E C O N O M I C S B U L L E T I N

An analysis of perceived overqualification in the Swiss labor market

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Abstract

This paper takes Switzerland as a case study and examines the determinants of (perceived) overqualification in a macroeconomic setting where there is indeed excess demand for qualified labor. Our analyses show that overqualification in the Swiss labor market cannot be explained by possible rigidities and discrimination. Hence, the labor market in Switzerland must in general be considered as efficient. Hence, unobserved heterogeneity should indeed account for the phenomenon of overqualification / overeducation. Nonetheless, women's family commitments are found to restrict the full utilization of their investment in human capital. Thus, there exists some room for policy measures to improve the job – education match of women (especially of those who have children between 0 – 6 years of age) by increasing the availability of external child care facilities and / or making child care at home more affordable.

This study has been realized using the data collected in the "Living in Switzerland Survey" (1999−2003) by the Swiss Household Panel (SHP), Université de Neuchâtel − a project financed by the Swiss National Science Foundation Program, SPP, "Switzerland Towards the Future" under the grants 5004−53205, 5004−57894, 5004−67304 (www.swisspanel.ch). We gratefully acknowledge the financial support by the Swiss National Science Foundation (Research project no. 5004−069458/1).
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1. Introduction

The phenomenon of overeducation occurs when a person's educational qualifications are superior to his/her job.[1] Following Freeman's (1976) seminal book and Duncan and Hoffman's (1981) paper, various studies in the literature on overeducation report the incidence of overeducation to cover between 10 to 35 percent of the workforce.[2] In this paper, we examine the determinants of overeducation in the Swiss labor market, where about 15-20 percent of the workforce consider themselves as being overqualified for the job they perform.[3]

In the context of the literature on overeducation, Switzerland presents an interesting case to investigate since the phenomenon of job – education mismatch in the form of overqualification can be analyzed in a macroeconomic setting where excess demand for qualified labor is rather the norm and unemployment rates are generally low.[4] In principle, the shortage of qualified labor should increase the pressure in the labor market to match educational qualifications of employees and high-skill-requiring jobs. In particular, employers should be investing more in searching for qualified labor, which results in lower information costs for employees. Even more importantly, employees should be less willing to accept a job mismatch if only little job search costs are needed to find a job with no educational mismatch. Then, the question is why about 15-20 percent of the labor force in Switzerland still classify themselves as overeducated or overqualified under such favorable labor market settings. Does this sub-optimal job-education match arise from possible systemic / institutional rigidities, or discrimination by employers against women, foreigners, and part-time workers? Or, is it a frictional / temporary phenomenon in nature? Could it be due to individuals' unobserved characteristics, such as differences in ability and motivation? This paper seeks answers to these questions and suggests policies to improve the job-education match (especially for women) in the Swiss labor market.

The rest of the paper is organized as follows. Section 2 provides a brief review of the literature on the theories of overeducation. Section 3 discusses how the authors of this paper handled the maze of definitional and measurement problems found in the overeducation literature in conducting their empirical work. Section 4 presents the empirical results from the probit estimates, and Section 5 concludes.

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[1] A person's qualifications for the job performed is a broad term encompassing both his/her formal education and any relevant informal education plus on-the-job-training. Thus, it should be a better and more up-to-date measure of one's human capital. In the empirical part of this paper, we confine ourselves to the broader measure, i.e., overqualification. Nevertheless, the terms overeducation and overqualification are generally used interchangeably in the literature.

[2] Notwithstanding measurement problems, the incidence of overeducation, on average, is about 25%. The range of estimates is, however, large. There appears to be less overeducation in European countries than in the United States, albeit the difference (21.5% vs. 26.3% on average) turns out to be statistically insignificant in the meta-analysis [e.g., Groot and Maasen van den Brink, 2000] See, Sloane (2002, Table 1) for a comprehensive review of the studies on overeducation.

[3] In our sample, 21 percent and 19 percent of all working women and men, respectively, report (direct self-response method) that they are overqualified for the job they perform. Narrowing the sample only to those who are working in an occupational field related to their educational background, the incidence of overqualification reduces to about 15 percent for both women and men.

[4] The average unemployment rate between 1980 and 2003 was 2.1%. Nevertheless, the supply of highly educated individuals in Switzerland, measured by the enrolment rates of students in tertiary education, is amongst the lowest within the OECD.

2. A Review of the Theories of Overeducation

There are two main competing approaches to explain the overeducation phenomenon. First, it is argued that overeducation represents market inefficiencies due to rigidities and consequent adjustment problems of qualifications supplied and demanded in the labor market. These rigidities, which limit the optimal job - educational qualifications match of workers, could result from informational problems (especially for those at the beginning of their working career), restricted mobility of the labor due to part-time work or geographical factors, or gender or nationality discrimination by employers.[5] In addition, a rather limited responsiveness of the job structure to changes in the relative supplies of educated labor might also limit an optimal functioning of the labor market. As a result, an increasing supply of highly educated individuals does not find the jobs corresponding to their educational qualifications. Signaling effects might also lead to increased supply of overeducated workers. Hence, they end up accepting jobs for which they are *genuinely overqualified*. This creates a bumping-down process of highly qualified workers into lower qualified jobs, eventually crowding out lower educated workers into unemployment. Lower flexibility of wages at the low-end might further contribute to this crowding-out process. Under this approach, the incidence of overeducation points to inefficiencies in the functioning of the labor market, which can be reduced by policy measures.

A different line of the literature on the causes of overeducation [e.g., Bauer (2002) and Chevalier (2003)] argues that overeducation mainly reflects unobserved differences in personal characteristics, such as ability and motivation, other unmeasured skills, or differences in the quality of education. According to this view, overeducation is said to be *apparent*, but labor markets are considered as efficient.

These two approaches have distinct implications both in terms of the causes and the policy consequences of the phenomenon of overeducation. Under the first approach, for example, one would expect *a priori* that new comers into the labor market, foreigners, part-time workers, or geographically less mobile persons are more likely to work in a job for which they are overqualified. To the contrary, if overeducation can neither be related to excess supply of qualifications nor to observed rigidities of supply of or demand for labor which could limit an optimal job-education-match, then unobserved heterogeneity linked to personal characteristics like ability and motivation or the lack of other unmeasured skills should explain this phenomenon. Under this approach, there is no underutilization of investment in human capital, and the need for policy measures are rather limited.

3. Who Is Really Overeducated? A Review of Measurement Problems

Matters of definitions and measurement problems are one of the hardest obstacles to deal with in empirical research and the literature on overeducation is no exception. First of all, there are several ways of defining / measuring who is overeducated and who is not. One obvious method is to ask the people directly. This method allows the respondents to compare their overall qualifications to the requirements of the job currently performed. As such, it allows for changes in the job descriptions. Hence, it might provide a broader and a more up-to-date means to evaluate the quality of one's job-education match from the very perspective of the individual involved. However, the direct-self-response method is a subjective measure and it may suffer from a self-response bias. This should not normally be a problem as long as there is no uncontrolled systematic bias or correlation of the responses across individuals.

[5] Sloane (2002) provides an overview of the literature. For studies about the impact of geographical factors and marital status, see Büchel (2000), Büchel and Battu (2003) and Dolton and Silles (2001). The relationship between ethnic minority status and overeducation was investigated by Battu and Sloane (2002).

The objective measures of overeducation involve the calculation of the number of years necessary to perform the tasks in an occupational field, and comparing it to the number of years of formal education of the individuals working in that field. Objective measures, in principle, do not suffer from a self-response bias. However, the classification of the sample into the categories of "overeducated", "matched", and "undereducated" is usually done by statistical methods. Hence, it involves some degree of arbitrariness since the size of the sample of "overeducated" workers and employees changes according to the statistical decisions taken. For example, should one use the mean or the mode of the distribution of the number of years of schooling in an occupational field as a cut-off line? Or, how many standard deviations should one allow from the mean to classify a worker as overeducated? In addition, should on-the-job-training be included in the education measure and how? One way to get around these statistical problems is the expert opinion method to set the number of years of schooling necessary to perform the job in an occupational field. While this sounds like the most objective measure, the available sources may be outdated and not capture the changes in job characteristics overtime. Furthermore, expert evaluations are general in nature: they are provided for occupational categories, and not for specific jobs. Sloan (2002, Section 3) and Chevalier (2003) provide a further discussion of the measurement issues in the overeducation literature. It is also shown that the correlation coefficients among the measures of overeducation from the above described three methods are indeed low. Thus, the choice of method for determining who are overeducated depends on the availability of data (survey and expert opinions may not be available for every country) and the researchers' preferences.

We use the direct-response method as the measure of overqualification in the empirical part of our study in views of its advantages discussed above. Nevertheless, taking the possible self-response bias into account, we also add the adjective "perceived" in front of overeducation / overqualification. The survey data are obtained from the Swiss Household Panel (SHP, www.swisspanel.ch).[6]

Another issue in defining those who are overqualified arises from the fact that some people work in fields unrelated to their educational backgrounds and they may indeed be overqualified / overeducated for the job performed. This phenomenon could occur due to a deterioration in the job-education-match and / or as a consequence of an occupational reorientation due to personal preferences [e.g., Sicherman (1991)]. In addition, occupational changes might reflect structural shifts in labor demand due to technological change. For instance, an increase in demand for IT-supporters and a lower demand for accounting experts might lead some accounting experts to work temporarily or even permanently in an IT-supporter job (an unrelated occupation field to their formal educational background), for which they might arguably be overqualified. Even in an efficient education and labor market, the adjustments of the supply of educational qualities to changing demand conditions take time. In this context, overeducation is indeed "genuine"; but, as long as it has a rather "frictional" nature, it does not represent a market failure. Nevertheless, there may be an undelying "discouraged overeducated worker effect" behind the occupational field change decisions with implications for public policy measures.

The question relating to definitional and measurement issues here is whether the people who are overeducated but work in an unrelated job to their formal educational background should be included in the empirical analysis or not. Previous research on overeducation analyzed the determinants of overeducation irrespective of whether the job performed relates to one's educational qualifications or not. In this paper, we mainly focus on the determinants of (perceived) overqualification only for those who are willing to work in

[6] The question asked in the SHP is whether the respondent evaluates her/his education level as (a) above, (b) the same, or (c) below the requirements of the job she/he is performing. The fourth option (d) is to indicate that the educational background and the requirements of the current job are "unrelated".

occupational fields that are in line with their educational backgrounds – which should provide a "core" measure of overqualification / overeducation. On the negative side, this approach excludes the possible discouraged overeducated worker effect. On the positive side, it might be a stronger test for the presence (or lack thereof) of market inefficiencies in the educational qualifications-job-match process since it focuses on employees/workers who are willing to work in occupational fields best suited to their investment in human capital. In order to address the downside of excluding the workers/employees who pursue a different kind of job than their formal education would suggest, we conduct our empirical analysis one more time: this time including the individuals that work in an "unrelated" field to their educational background and classifying all of them as overeducated.[7]

4. Explaining Overeducation in Switzerland

In this section, we estimate the determinants of overqualification in the Swiss labor market by utilizing the direct-self-assessment data obtained from the Swiss Household Panel (SHP) data set for 1999. The sample is restricted to those individuals who are presently working in an occupational field relating to their educational backgrounds.

The sample for which we have data on all the explanatory variables contains 2223 entries, of which the estimable sample sizes for male and female respondents are 1182 and 1033, respectively. The explanatory variables used in the model and the estimation results are shown in Table 1, while Table 2 presents some descriptive statistics on the explanatory variables (both Tables are at the end of the paper). The model is estimated by using the standard probit estimation method for the (1) overall sample (2) males only, and (3) females only.[8] The model's explanatory variables are chosen in line with the theoretical discussion in Section 2 to enable the testing of the two alternative theories about the phenomenon of overeducation.

The variables "male", "non-Swiss", and "part-time job" provide information on personal characteristics other than the education level and allow us to test whether there is a different likelihood of overeducation for men, foreigners, and part-time workers. If these variables are found to be significant, one may conclude that there are rigidities and biases in the functioning of the job-education matching process in Swiss labor market.

The variables "age", "experience", and "tenure" are included in the model to test whether search and/or signaling effects play a role in explaining the phenomenon of overeducation.[9] The finding of a significant and negative relationship between experience or tenure and the incidence of overeducation, for example, would give support to the search theory explanation which sees overeducation as a phase of adaptation in the early stages of one's working life [e.g., Hartog (2000)].

Next, we control for a number of variables capturing the respondents' education level. These variables are included to test whether the incidence of overeducation depends on the level of education. Some university graduates (social sciences and humanities, for example)

[7] The percentage of respondents in our sample who report that they are working in an unrelated field to their educational backgrounds is 7.7%. It would indeed be interesting to test for the extent of the discouraged overeducated worker effect, but our data set does not contain information on the job – education match status of those who are working in an unrelated field

[8] The sample includes employees aged between 18 and 65 years, who are Swiss or foreigners with an annual or a permanent residential permit, and have obtained at least compulsory schooling. The reference person is Swiss, single, who has obtained a vocational education degree and has no children. The dependent variable is dichotomous taking value "1" when a person is overeducated and "0" otherwise. Survey weights are used and marginal effects are reported.

[9] Alternatively, formal education may also be a substitute for other forms of human capital investment, such as, experience and on-the-job training, explaining thus also a higher incidence of overeducation for those who are new to the labor market. See, also Sloane (2002) for further discussion.

may find it more difficult to find a job corresponding to their education level than those who have a lower level of education but are specialized in technical professions.

The next block of variables contains information on one's family and marital status with an emphasis on testing whether women with children are more likely to be overeducated. The children's age is also taken into account. At this point, we would like to elaborate more on the special situation of women with children in the Swiss labor market.

In Switzerland, the labor force participation of married women with children is rather low (and mostly in part-time jobs) compared to married women in other countries with similar employment environments. This fact is mainly explained by rather unfavorable institutional arrangements concerning child care and maternity leave in Switzerland. Family preferences may constrain married women in their job search, especially geographically. According to the theory of differential overqualification (Frank, 1978), for instance, the location of the household is chosen to optimize the job-education match of the full-time worker of the household, especially in smaller labor markets. Thus, women may end up accepting full-time or part-time jobs for which they are overqualified, which is in line with the theory of differential overqualification. Second, the high costs and the scarcity of external childcare in Switzerland reduce the average working time of mothers. Overeducation of mothers may then be even more pronounced in the case of part-time employment decisions since more demanding jobs are frequently restricted to full-time workers. Furthermore, women with children have usually interrupted career spells due to giving births and shorter experience spells (number of years at the same job).

The importance of looking at the determinants of women's overeducation is highlighted also by the fact that women's enrolment in tertiary education in Switzerland is the lowest within Europe, increasing only slowly. If female (especially the married) university graduates frequently take jobs for which they are overqualified, it might deter the graduates of the upper secondary schools from pursuing university level education. Hence, knowing more about the profile of those who are overeducated might provide new insights for education, gender, and population policies.

Last but not the least, we introduce some control factors that should help capture individual heterogeneity better. These variables are: "satisfaction with health status", "difficulties in professional or private life", and "social skills / emotional support from close friends". For people with difficulties in their social interactions or those with less satisfactory health status, for instance, the quality of the job – education match may not be of prime importance. Of course, it may not be completely correct to assume that there is unilateral causality from these variables to being overqualified for the job performed. A stress-illness relationship, for example, could lead to reverse causality. That is, working permanently in a position for which the person is overqualified could be the cause of his/her "difficulties in professional / private life" and poor "health status". However, since we also control for the perceived "social-skills and emotional support from close friends" in our analyses, it should be less likely that it is only the perceived overeducated status of the person which is causing all his/her problems.[10] Still, there can be some otherwise unobserved personal characteristic (that is, a missing third variable) which may lead at the same time to the status of being overeducated, cause difficulties in professional / private life, and also restrict the career

[10] Johnson and Johnson (1996, 1999, 2000) analyze the relationship between perceived overqualification, psychological well-being, health status, and job satisfaction using data from the USA. Their results generally support the stress-illness hypothesis. On the other hand, Hersch (1991) finds a higher likelihood of "quit intention" for overqualified workers employed by manufacturing and warehouse firms in Oregon, USA. In view of these findings, the determinants of why a person in a permanently overqualified position does not quit the job deserve further investigation.

mobility of the person. Nevertheless, such factors can best be deemed as part of the remaining unobserved individual heterogeneity.

Table 1 shows the results of our estimations. First of all, looking at the results for the overall sample (Column 1), we find that only "tenure", "university education", and "satisfaction with health status" variables are found to be have positive and statistically significant coefficients at 5 % level. The control variables for possible rigidities and discrimination in the labor market (e.g., gender, women with children, part-time workers, and foreigners) are not found to be statistically significant. There is some evidence that university graduates have a higher likelihood of getting jobs for which they are overqualified, but the overall incidence of overqualification decreases with increasing tenure – giving support to the temporary overqualification hypothesis arising from a search theory framework. These results point to a rather efficient functioning of the job-education matching process in the Swiss labor market, and the phenomenon of overqualification can be said to be *apparent*.

Column 2 of Table 1 shows the results obtained by restricting the sample only to male respondents. Here, we also see a similar picture to the above discussion: age, experience, part-time work, or being a foreigner are not statistically significant, while tenure and university level education are. In addition, we find that married men and those with higher "social skills / emotional support from close friends" have a lower marginal likelihood of a sub-optimal job-education match. These findings suggest that unmeasured heterogeneity might as well be linked to time-varying factors as motivation and effort which may stem from innate ability differences.

Column 3 of Table 1 displays our findings when the sample is restricted only to female respondents. Again, we find that age, experience, part-time work, or being a foreigner are not statistically significant. The statistically significant variables and their estimated signs in parentheses are: tenure (-), technical and vocational school (+), vocational tertiary school (+), university (+), child/children below six years of age living in the same household (+), and satisfaction with health status (-). These results imply that women are not discriminated in the education level – job matching process according to whether they are Swiss or not, or whether they prefer to work part-time or full-time. Nevertheless, the incidence of overeducation is likely to be higher for women with higher or technical / university education and especially if they have children under six years of age. Given that the experience variable for women is not significant but the tenure variable is, this confirms again the search explanation as discussed before.

Similar to the findings for the overall sample, the incidence of overeducation decreases as one's health situation improves. But very clearly and contrary to Frank's (1978) theory of differential overqualification, marital status is not found to have a significant and positive impact on women's probability to work in a job for which they are overqualified.[11]

To check whether these results are sensitive to the exclusion of those working in an unrelated occupational field, we repeat the above empirical analysis by including them in the sample. In the absence of information on their perceived job – educational qualifications match, we classify all of them as overeducated. With this modification, the sample size increases to 2401 (1259 men and 1142 women). Table 3 presents the outcome of this estimation.

The estimation results shown in Table 3 are remarkably similar to those in Table 1. Again, the "male", "Swiss nationality", and women's "marital status" variables are found to be insignificant even when those individuals working in "unrelated" occupations are included in the sample. For the sample combining both men and women, the "university level education" variable is again significant but the incidence of overqualification is found to

[11] Our results should be interpreted as only suggestive when it comes to the testing of the differential overqualification hypothesis since some additional variables capturing the degree of geographic mobility of the respondents should also be included in the equation for making a more proper test.

decrease with increasing tenure. This is an important finding since the "tenure" variable has a robust, significant, and negative coefficient both for men and women regardless of the sample definition – supporting our previous findings that the presence of overeducation in the Swiss labor market is partly due to frictional factors. Nevertheless, women's family commitments towards their children (below 18 years of age) are again found to be a factor hindering the quality of their job – educational qualifications match.

The effects of the soft factors capturing individual heterogeneity, such as "satisfaction with health status", "difficulties in professional or private life", and "social skills / emotional support from close friends" are also found to be similar to our previous discussion.

The main difference between the results shown in Table 1 and Table 3 is the "part-time job" status. In the overall sample, part-timers are found to have a higher likelihood of overqualification for the job they are performing when the sample includes those people working in "unrelated" occupations to their educational backgrounds. Considering that part-time work was not found to be a significant factor explaining overqualification for those with a good occupational field – educational background match, individual preferences and/or the dualistic nature of the market for part time work might be the underlying reason for this finding. In addition, it should be noted that we classified all individuals working in an unrelated occupational field as overeducated/overqualified. Since this may not necessarily be the case, the impact of part-time work should be seen as an upper bound in Table 3.

5. Conclusions

In this paper, we used household survey data to analyze the determinants of job – skills mismatch in the form of overqualification in the Swiss labor market for a sample of individuals who work in an occupational field relating to their educational backgrounds. We also checked for the sensitivity of the findings by extending the sample definition to include those who are working in unrelated occupational fields to their educational backgrounds. Our empirical results show that the phenomenon of overeducation or (broadly speaking) overqualification is not hinting at inefficiencies in the functioning of the labor market in Switzerland. Overall, we do not find evidence for labor market rigidities which limit the allocative efficiency of the supply of human capital especially for persons who work in a job related to their educational qualifications. In particular, women (married or single), part-timers, and foreigners are found to have as equal access to jobs that are in line with their education level as full-time working males with Swiss citizenship. When the individuals with an occupational field – educational background mismatch are included in the sample, part-timers are found to have a higher likelihood of overqualification. Nevertheless, part-time work is not found to be a factor explaining the overeducated status of those with jobs in line with their educational background. An individual's decision to work part-time in an unrelated occupational field to his/her studies might be a voluntary phenomenon stemming from life-style and working preferences, or it may be also be due to the tightness of the market for part-time work within their occupational field. More research about the motives and constraints for persons changing their occupational field is needed.

It is notable the incidence of overqualification in the Swiss labor market declines with increasing tenure regardless of the sample definition. This is consistent with the search theory explanation of overeducation. Given that we have also controlled for a number of soft factors (such as social skills, difficulties in professional and private life, and health status), the phenomenon of overqualification in Switzerland should also be partly reflecting the remaining unmeasured heterogeneity of the individuals. Following the arguments of Bauer (2002) and Chevalier (2003), these factors could be individual differences in ability, motivation, or possibly the unmeasured differences in the quality of education. Therefore, the phenomenon of job – education mismatch in the form of overqualification in the Swiss labor market

should be seen as *apparent*, but the labor market should be considered as efficient. From a policy point of view, these results imply that the incidence of overqualification in the Swiss labor market does not in general reflect an inefficient use of public funds invested in education.

Nevertheless, our results also indicate that the job – educational qualities match of women with higher education and women with young children might still be improved. It should be noted that the relatively disadvantaged situation of women with higher education and women with young children in the Swiss labor market, however, does not stem from the considerations of Frank's (1978) theory of differential overqualification. Institutional characteristics, such as the lack of access to or high costs of external child care, could rather be the reason. Provisioning of external child care facilities or making child care at home more affordable would help increase women's (especially those with higher and technical education) labor force participation rates in full time jobs in occupational fields for which their education levels match the job profile well. Given that economic growth in Switzerland is potentially constrained by the growth rate of labor supply, motivating women and providing incentives (also to the employers) to keep them integrated in the labor market after giving birth should lead to better utilization of women's investment in education and contribute positively to the economic growth potential in Switzerland.

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Table 1. The determinants of overeducation in Switzerland (SHP 1999 data, probit estimation, reporting marginal effects)

	(1) All	(2) Men	(3) Women
Male	0.003	-	-
	(0.14)		
Age	-0.001	0.001	-0.001
	(0.73)	(0.41)	(0.69)
Experience	0.000	-0.001	0.001
	(0.16)	(0.78)	(0.83)
Part-time job	0.010	-0.000	-0.011
	(0.49)	(0.01)	(0.36)
Tenure	**-0.005**	**-0.005**	**-0.006**
	(3.71)**	**(3.13)****	**(2.32)***
Compulsory schooling	-0.055	-0.077	-0.031
	(1.71)	(1.70)	(0.70)
General training school	0.025	0.104	-0.072
	(0.35)	(1.00)	(0.80)
Full-time vocational school	0.038	0.056	0.017
	(1.08)	(0.98)	(0.39)
Upper secondary education (A-level)	0.010	0.012	0.008
	(0.38)	(0.29)	(0.23)
Vocational high education (certified)	0.041	0.040	0.033
	(1.28)	(1.07)	(0.54)
Technical or vocational school	0.072	0.041	**0.213**
	(1.77)	(0.90)	**(2.18)***
Vocational tertiary education	0.070	0.033	**0.164**
	(1.85)	(0.80)	**(2.05)***
University	**0.122**	**0.126**	**0.086**
	(4.54)**	**(3.42)****	**(2.19)***
Non-Swiss identity	0.002	0.024	-0.042
	(0.09)	(0.76)	(1.23)
Married or living in consensual partnership	-0.049	**-0.095**	0.004
	(1.73)	**(2.29)***	(0.10)
Separated, divorced or widowed	-0.057	-0.043	-0.066
	(1.73)	(0.84)	(1.57)
Number of children in household (HH), <18 yrs.	-0.011	0.008	-0.038
	(0.79)	(0.49)	(1.59)
Number of children not living in HH	-0.002	0.005	-0.009
	(0.15)	(0.30)	(0.53)
Child/children in HH, <=6 years	0.023	-0.031	**0.141**
	(0.68)	(0.76)	**(2.20)***
Child/children in HH, 7-13 years	0.017	0.001	0.053
	(0.43)	(0.01)	(0.81)
Child/children in HH, 14-17 years	0.046	0.022	0.085
	(1.18)	(0.44)	(1.41)
Number of adult children in HH, 18-30 years	-0.013	-0.022	0.003
	(1.01)	(1.23)	(0.15)
Number of adult children in HH, >30 years	-0.079	(--)	0.002
	(1.22)		(0.04)
Satisfaction with health status, min:0, max:10	**-0.010**	-0.007	**-0.014**
	(2.13)*	(1.11)	**(2.10)***
Difficulties in professional or private life, min:0, max:10	0.039	0.059	0.000
	(1.90)	**(2.10)***	(0.01)
Social skills / Emotional support from close friends, min:0, max:10	-0.006	**-0.008**	-0.003
	(1.92)	(1.94)	(0.56)
Number of Observations	2223	1183	1033
Pseudo R-Square	0.057	0.079	0.079

Notes: (*) significant at 5%; (**) significant at 1%. (-) observations dropped due to collinearity problems. (--) The impact could not be estimated due to lack of variation in the variable.

Table 2. Descriptive statistics for the variables in Table 1

	Men			Women		
Variable	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Overeducation	1458	0.15	-	1332	0.147	-
Age	1555	40.40	11.19	1474	40.35	11.66
Experience	1555	19.22	12.41	1474	12.49	10.65
Part-time	1555	0.11	-	1474	0.64	-
Tenure	1555	10.08	10.16	1474	6.72	7.18
Compulsary Schooling	1555	0.08	-	1474	0.11	-
General Training School	1555	0.01	-	1474	0.01	-
Full-time Vocational School	1555	0.04	-	1474	0.08	-
High School (A-Level)	1555	0.08	-	1474	0.14	-
Vocational High School (cert.)	1555	0.09	-	1474	0.04	-
Technical or Vocational School	1555	0.15	-	1474	0.05	-
Vocational Tertiary Education	1555	0.07	-	1474	0.02	-
University	1555	0.15	-	1474	0.11	-
Non-Swiss Nationality	1555	0.22	-	1474	0.15	-
Married or with a partner	1555	0.75	-	1474	0.68	-
Separated, Divorced, Widowed	1555	0.08	-	1474	0.15	-
Children < 18 yr in HH (yes/no)	1555	0.43	-	1474	0.37	-
Health Status (0-10)	1554	8.37	1.62	1473	8.29	1.74
Difficulties in Life (0-1)	1282	0.18	-	1158	0.18	-
Emotional Support (0-10)	1515	9.32	6.71	1451	9.31	6.46

Source: Swiss Household Panel data for 1999 (www.swisspanel.ch) and authors' calculations.

Table 3. The determinants of overeducation in Switzerland including the individuals working in "unrelated" occupational fields to their education (SHP 1999 data, probit estimation, reporting marginal effects)

	All	Men	Women
Male	0.020		
	(0.89)		
Age	-0.001	-0.001	0.000
	(0.88)	(0.49)	(0.20)
Experience	-0.001	-0.002	-0.001
	(1.11)	(0.96)	(0.63)
Part-time job	**0.062**	0.066	0.030
	(2.68)**	(1.85)	(0.90)
Tenure	**-0.006**	**-0.006**	**-0.008**
	(4.53)**	**(3.73)****	**(2.86)****
Compulsory schooling	-0.056	-0.055	-0.054
	(1.65)	(1.10)	(1.14)
General training school	-0.007	0.053	-0.074
	(0.09)	(0.49)	(0.70)
Full-time vocational school	0.000	0.003	0.001
	(0.01)	(0.05)	(0.02)
Upper secondary education (A-level)	0.006	0.005	0.016
	(0.22)	(0.12)	(0.41)
Vocational high education (certified)	0.013	-0.003	0.063
	(0.38)	(0.07)	(0.91)
Technical or vocational school	0.079	0.038	**0.238**
	(1.84)	(0.79)	**(2.49)***
Vocational tertiary education	0.057	0.037	0.101
	(1.41)	(0.84)	(1.13)
University	**0.075**	**0.079**	0.053
	(2.68)**	**(2.11)***	(1.23)
Non-Swiss identity	0.033	0.049	-0.012
	(1.31)	(1.51)	(0.30)
Married or living in consensual partnership	-0.050	-0.064	-0.035
	(1.64)	(1.53)	(0.77)
Separated, divorced or widowed	-0.038	0.001	-0.084
	(1.01)	(0.02)	(1.73)
Number of children in household (HH),<18 years	-0.012	0.011	-0.045
	(0.78)	(0.60)	(1.70)
Number of children not living in HH	0.010	0.019	-0.010
	(0.81)	(1.19)	(0.52)
Child/children in HH, <=6 years	0.017	-0.044	**0.144**
	(0.47)	(0.99)	**(2.13)***
Child/children in HH, 7-13 years	0.007	-0.007	0.030
	(0.17)	(0.13)	(0.44)
Child/children in HH, 14-17 years	0.066	0.023	**0.130**
	(1.63)	(0.42)	**(2.06)***
Number of adult children in HH, 18-30 years	-0.013	-0.022	-0.003
	(0.91)	(1.12)	(0.15)
Number of adult children in HH, >30 years	-0.050	-0.109	-0.005
	(0.71)	(1.09)	(0.07)
Satisfaction with health status, min:0, max:10	**-0.011**	-0.011	-0.012
	(2.28)*	(1.64)	(1.59)
Difficulties in professional or private life, min:0, max:10	0.041	**0.065**	-0.010
	(1.86)	**(2.24)***	(0.30)
Emotional support from close friends, min=0, max=10	**-0.008**	**-0.008**	-0.008
	(2.43)*	**(1.98)***	(1.54)
Number of Observations	2401	1259	1142
Pseudo R-square	0.0607	0.0817	0.0550

Notes: See Table 1.