

Chapter 7

Does the Recognition of Foreign Credentials Decrease the Risk for Immigrants of Being Mismatched in Education or Skills?



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7.1 Introduction

Migrants are generally found to earn less than natives do upon arrival in the host labour market (e.g., Chiswick 1978; Borjas 1994). Various explanations have been proposed, such as the fact that the quality and compatibility of foreign human capital might differ from those of local human capital (e.g., Friedberg 2000) or simply because of labour market discrimination (e.g., Lang and Lehmann 2012). Alternatively, because they have information on the labour markets in both the country of origin and the host country, they should be able to compare their expected labour market outcome in both countries (Borjas and Bratsberg 1994). Thus, they might be ready to accept a poorer situation than would their native counterparts in the host country but improve their labour market outcome when they expect a worst position in the country of origin. Migrants are then expected to work in a lower position than the position of natives with the same observed education and experience levels. Such a *downgrading* appears to be a widespread phenomenon in developed economies and means that immigrants with foreign-acquired skills are paid less than are natives for a comparable set of measured skills (Dustmann et al. 2016).

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However, skills mismatches among migrants are an issue in how they represent a “brain waste” for the migrant and for the host economy.

Among the factors explaining immigrant downgrading in the forms of overeducation (when workers have more education than is required for their jobs) or skills mismatch more generally are the imperfect transferability of foreign credentials and skills acquired abroad (Chiswick and Miller 2008, 2009). This problem often results from poor knowledge of the foreign educational system held by the employers in the host country (e.g., Buzdugan and Halli 2009). Consequently, employers minimize uncertainty by prioritizing workers educated in the home country or by hiring overeducated migrants. This handicap for migrants can be partially reverted by means of foreign credential assessment. In other words, the recognition of foreign credentials might be a means to avoid or overcome situations of overeducation (see for instance Nielsen 2011; Pecoraro 2011).

The literature on the possible effect of recognizing skills acquired abroad is rather scarce. Brücker et al. (2016) studied the employment and wage effects of occupational recognition. Based on a linked dataset from the IAB-SOEP Migration survey and the German social security data, their empirical analysis shows gains from occupational recognition in the German labour market.¹ Accounting for the dynamic structure of their data, they also indicate a faster assimilation of immigrant earnings relative to native earnings resulting from occupation recognition. A more recent study by Tani (2017) also investigated whether assessing foreign education increases returns to schooling of migrants in Australia. Using data from the Longitudinal Survey of Immigrants to Australia (LSIA), he indicates substantial wage improvements when foreign qualifications are officially assessed. Assessing foreign education provides, then, a clearer signal of productivity, improving the transferability of human capital and migrants’ economic assimilation.

In parallel, a significant number of papers have examined the determinants and consequences of migrants’ overeducation, with a particular focus on the wage effects (e.g., Chiswick and Miller 2008, 2009; Green and McIntosh 2007; Lindley 2009; Nielsen 2011). Few focussed on the migrants’ strategies to avoid overeducation or skills mismatch. However, the effect of the recognition of the foreign qualification on the mismatch is not documented in the literature. This chapter aims at filling this gap with original data from an immigration country such as Switzerland.

The aim of this chapter is to investigate the relationship between foreign credential recognition and both educational and skills mismatches. To our knowledge, such a relationship has never been investigated. We focus on the migrant population living in Switzerland, which represents one-third of the country’s workforce, according to the Swiss Federal Statistical Office.² The availability of new data from the Migration-Mobility Survey allows us to measure a mismatch based on the

¹The IAB-SOEP Migration Sample is a household survey conducted jointly by the Institute for Employment Research (IAB) in Nuremberg and the German Socio-Economic Panel (SOEP) at DIW Berlin.

²31% in 2017, cf. <https://www.bfs.admin.ch/bfs/fr/home/statistiques/catalogues-banques-donnees/communiqués-presse.assetdetail.2633986.html>. Accessed 25 May 2018.

migrant's self-assessment of job matching in terms of education and actual skills. For this purpose, after a review of the literature (Sect. 7.2) and a description of data and methods (Sect. 7.3), we initially measure the incidence of both educational and skills mismatches among groups of (recent) migrants defined according to the place of origin and the status of recognition of the foreign diploma (Sect. 7.4.1). In a second step, we aim at verifying to what extent there is a significantly positive relationship between the foreign-acquired education (whether or not officially recognized) and the probability of being overeducated or in a situation of skills mismatch. Finally, the reasons explaining educational mismatch and skills mismatch are investigated (Sects. 7.4.2 and 7.4.3). The chapter closes with a conclusion (Sect. 7.5).

7.2 Review of the Literature

Various theoretical models have been advanced to explain the presence of overeducation in the labour market (for overviews, see Hartog 2000; Leuven and Oosterbeek 2011). Among them is the human capital model (Becker 1964). According to it, skills learnt in formal education constitute an incomplete measure of the human capital endowment, which includes other important elements such as early ability (either acquired or innate, before entering the schooling system), skills acquired through training on the job, and labour market experience. Workers with different levels of education can provide the labour market with the same amount of human capital. In line with Becker's model, overeducation might then substitute for a lack of other elements of the human capital endowment (Sloane 2003). In other words, although the human capital endowment is vaster than the *educational knowledge*, the existence of overeducation does not imply excess human capital per se and could be associated with a lack of *non-educational knowledge*. This explanation is particularly prevalent for migrants who, to some extent, might lack knowledge of the local language, lack knowledge concerning local legislation, or face a lack of networks within the local market.

Sicherman and Galor (1990) proposed an adaptation of the human capital model in which overeducation is considered an opportunity for occupational upgrading and is thus a temporary state at the early stage of a career. According to this model of career mobility, the wage penalty for being overeducated is compensated for by future wage growth through promotion or on-the-job training. Based on US data, the authors found support for the career mobility model, which was also demonstrated by subsequent studies (e.g., Robst 1995; Rubb 2006; Sicherman 1991). Although the empirical evidence on the link between overeducation and upward mobility is not clear-cut in the context of European labour markets (e.g., Baert et al. 2013; Büchel and Mertens 2004; Korpi and Tählin 2009), a recent study by Grunau and Pecoraro (2017) confirms Sicherman and Galor's prediction for Germany. By analogy, according to Sicherman and Galor (1990), migrants can be assigned to jobs for which they are overeducated and can accept low wages during the first years in

the host country, with the hope of improving their position and earnings in the following years.

It is not surprising to observe an increased level of educational mismatch among migrants compared with natives (Aleksynska and Tritah 2013; Leuven and Oosterbeek 2011). This point is particularly true for cohorts of immigrants who arrived in the first decade of the twenty-first Century in the United Kingdom (Lindley 2009), a result that is confirmed based on 13 European countries by Prokic-Breuer and McManus (2016) except among workers with the highest cognitive proficiency. Piracha and Vadean (2013) and Visintin et al. (2015), among others, propose reviews of the literature on migrant educational mismatch. Visintin et al. (2015) used data on almost 700,000 workers in 86 countries to better describe the migrant groups experiencing overeducation in Europe. According to the authors, this situation is generally more common among migrants from the EU15 and Asia but not among those from Africa or South America.

Among the reasons suggested for the higher likelihood of migrant overeducation, the imperfect international transferability of human capital is mentioned by Chiswick and Miller (2009) in the case of foreign-born men in the United States and by Nieto et al. (2015) for immigrants from non-EU countries. Tani et al. (2013), Sanromá et al. (2015) and Basilio et al. (2017) confirm the importance of this interpretation for immigrants to Australia, Spain and Germany, respectively; they show evidence of significant variation in the wage returns from nominally equivalent qualifications obtained in different countries.

Other alternative explanations have been suggested. One frequently mentioned is that overeducation might be due to discrimination in the destination labour market (Battu and Sloane 2004; Nielsen 2011). Inadequate language skills of migrants is another factor highlighted by Green and McIntosh (2007) and Prokic-Breuer and McManus (2016). Piracha et al. (2012) also argued that migrants' overeducation in the destination country is to a large extent explained by the matching status prior to migration, a worker being overeducated in the country of origin having a higher probability to be in the same situation after migration. This finding is in line with a human capital model of migration in which skills are not always fully utilized in the home country (Nowotny 2016). Thus, overeducated migrants are negatively self-selected, that is, have a lower skill level than non-migrants.

In Switzerland, regulated professions such as medicine and law require a formal recognition of foreign qualifications. According to the State Secretariat for Education and Innovation (SERI), which oversees the recognition procedures, "A profession is deemed to be regulated when legal or government provisions stipulate that a specific qualification is required to work in the given profession". This requirement not only affects occupations in the health sector (e.g., physician, psychologist, and assistant in community health) and in the law sector (e.g., barristers and solicitors) but also concerns various other occupations (such as taxi driver, teacher, and civil engineer). In the case of differences between the migrant's foreign education and the corresponding diploma acquired in Switzerland, the SERI can require an aptitude test to

verify the skills content. Occasionally, additional years of education are required.³ This requirement can discourage people from initiating the procedure when the upgrading process is too complicated.

For the non-regulated occupations, recognition is not necessary. In this case, the employer decides whether to hire the migrant. The employer also might ask the migrant to attend additional education or on-the-job training. To some extent, the migrant can request an official assessment of his or her credentials to meet Swiss standards, which can help to find a job corresponding to his or her actual skills. Such a process is generally proposed by unemployment offices or organizations that facilitate migrants' integration in the labour market.

Switzerland presents rather low rates of educational mismatch in international comparisons (Quintini 2011). Consequently, the high proportion of migrants in its population tends to increase the average extent of overeducation because migrants are more affected than natives are (Pecoraro 2011). However, Switzerland is an interesting case to study in this context, in particular because of the availability of survey data that provide information on educational and skills mismatch for recently arrived migrants.

7.3 Data and Methods

The Migration-Mobility Survey 2016, described in Chap. 2 of this book, was used to estimate the link between job mismatch and the place of education on one hand, and the recognition of foreign qualifications on the other hand. As a reminder, the sample includes 11 groups of migrants from different countries or regions of birth. Among countries that were excluded were the Balkan countries and the Asian countries, India excepted. Therefore, the survey is not representative of the entire working population of foreign nationality, although the largest groups of migrants living in Switzerland, representing together 68% of the active migrant population, are part of the survey. Moreover, the survey oversampled migrants who arrived in the last 2 years. Weights are computed to make the data representative of the migrant population living in Switzerland (see Chap. 2). When interpreting the results, we must remember that the survey covers the migrants who arrived in the last 10 years in Switzerland.

For this chapter, migrants without any formal education are excluded because we are primarily interested in the transfer of foreign-acquired education into the Swiss labour market. Due to a technical problem, the survey did not collect any information on the recognition of foreign qualifications among PhD holders; therefore, this group is also excluded. Only migrants with a job are included in the analysis (4,190 persons).

³SBFI, recognition of foreign qualifications, <https://www.sbf.admin.ch/sbf/en/home/bildung/recognition-of-foreign-qualifications/recognition-procedure-on-establishment.html>. Accessed 14 June 2018.

The respondents were invited to indicate the country in which the highest educational qualification was obtained (question D2). Countries are grouped in four broad regions: education acquired in Switzerland (reference), in a EU28/EFTA country, in another OECD country, or in another country in the rest of the World.

Concerning the recognition of foreign qualification, one question is about the official requests made by the respondents to obtain a certificate of equivalence when their highest educational qualification was acquired abroad. The following answers are included: (1) Yes, the certificate was obtained; (2) Yes, but the certificate was not obtained; (3) Yes, but the procedure is not yet complete; (4) No, it was not necessary; and (5) No, for other reasons.

Educational and skills mismatches are both derived from the worker's self-assessment method. Although all measurement methods tend to induce measurement error (see, e.g., Hartog 2000; Leuven and Oosterbeek 2011, for the pros and cons of each existing measurement method), the subjective method presents the advantage of relaxing the assumption that all jobs within a given occupation have the same requirements.

The measure of educational mismatch is based on the comparison between the highest level of education obtained by the respondent and the answer to the following question: "What type of education do you feel is most appropriate for your current job?" The respondent could answer as follows: (1) No formal educational qualification; (2) Compulsory education; (3) Higher secondary education not giving access to universities (or similar); (4) Vocational education and/or training; (5) High school-leaving certificate giving access to universities (or similar); (6) Advanced technical and professional training; (7) Bachelor or equivalent; (8) Master or equivalent; or (9) PhD or equivalent.

Overeducation (resp. undereducation) is defined as situations in which the highest level of education achieved is higher (resp. lower) than the one that is considered the most appropriate for the current job. This measurement approach is standard in the overeducation literature (see, e.g., Duncan and Hoffman 1981; Hartog 2000; Leuven and Oosterbeek 2011).

Skills mismatch is computed based on the following question: "On a scale from 0 'not at all' to 7 'to a very high extent', to what extent are your knowledge and overall skills utilized in your current work? By knowledge and overall skills, we mean your formal education and the skills you obtained while working (on-the-job

Table 7.1 Coherence between educational and skills mismatch (in %)

	Skills mismatch		
	No	Yes	Total
Educational mismatch			
Adequate education	54.2	2.9	57.1
Undereducation	12.8	0.9	13.6
Overeducation	19.9	9.4	29.3
Total	86.8	13.2	100.0

Sample size: 4,171

Source: Migration-Mobility Survey 2016. Weighted results

training).” This question is similar to those generally used in the overskilling literature (see, e.g., Allen and van der Velden 2001; Green and McIntosh 2007; Mavromaras et al. 2012). Answers ranging from 0 to 3 are viewed as reflecting skills mismatch because answers ranging from 4 to 7 are viewed as reflecting a good or perfect use of skills.

In line with the literature, the consistency between both indicators is relatively low (Table 7.1); only 54% of the respondents report an adequate education and adequate skills, and 33% of the respondents report adequate skills but are either undereducated (13%) or overeducated (20%). Moreover, 10% report both skills and educational mismatches (9% overeducation, 1% undereducation), and 3% report a situation of skills mismatch while being adequately educated (Table 7.1). This low degree of consistency is explained by the fact that both dimensions reflect different, but also complementary, notions of human capital utilization. Educational mismatch is a rather objective measure but solely based on the worker’s educational credential, whereas skills mismatch translates largely into satisfaction in terms of skills utilization on the job. The latter indicator can also reflect dissatisfaction concerning the tasks that are given to the migrant worker.

Different regression models were applied to the data to determine the statistical associations between the key variables under study (country of education and request for recognition of diploma) and the risk of either educational mismatch or skills mismatch. Our expectation concerning these associations is formulated in accordance with Chiswick and Miller’s (2009) evidence of imperfect international transferability of human capital and with Brücker et al. (2016) results showing improved labour market adjustment due to occupational recognition; the recognition of foreign credentials is expected to be negatively related to overeducation and skills mismatch more generally. Standard control variables were integrated into the models. Those confounding factors are the following:

- Gender: men (reference), women
- Age and age squared
- Level of education: compulsory education, higher secondary education not giving access to universities, vocational education and/or training (reference), high school-leaving certificate giving access to universities, advanced technical and professional training, bachelor or equivalent, master or equivalent
- On the job training: no (reference), yes
- Work experience (in year) and work experience squared
- Job before migration: none (reference), in the same company, in a different company
- Years since migration and year since migration squared
- Comprehension of the local language: understand everything in a conversation, most of the conversation, part of the conversation, some words and phrases, nothing at all (reference)
- Speaks the local language: fluently, somewhat fluently, not very well, some vocabulary, not at all (reference)

- Permit: resident permit B, settlement permit C (reference), short-term permit L, DFAE (diplomat) and Ci (members of the families of intergovernmental organizations and for members of foreign representations)
- Country of origin (question B1 “Which country do you consider to be your country of origin?”): countries bordering Switzerland (that is Germany, France, Italy and Austria; reference), other EU28/EFTA, other Europe, North America, Africa, South America, Asia (and the rest of the World)
- Matrimonial status: single (reference), married, other
- Regions of residence according to the Swiss typology (categorization of the 26 cantons)⁴: Lemanic Region (Vaud, Valais, Geneva; reference), Mittelland (Bern, Fribourg, Solothurn, Neuchâtel, Jura), North-West Switzerland (Basle-Country, Basle-Town, Argovia), Zurich, East Switzerland (Glarus, Schaffhausen, Appenzell Inner-Rhodes, Appenzell Outer-Rhodes, St. Gall, Grisons, Thurgovia), Central Switzerland (Lucerne, Uri, Schwyz, Obwalden, Nidwalden, Zug), Ticino.

Because the dependent variables present different forms, two different models are tested. We use a multinomial logit regression model to identify the determinants of educational mismatch. This model is appropriate to express the probability of both overeducation and undereducation, the alternative being an absence of mismatch. We assume that educational mismatch for individual i is determined by the following model: $M_i^* = O_i \alpha + X_i \beta + e_i$, with $i = 1, 2, \dots, N$. O is a vector including the key variable under study (either country of education or recognition of diploma), X is a vector including control variables (including a constant), and e is a term reflecting the unobservable component of educational mismatch. Given that the latent model is not observed, we define the polytomous variable M as the realization of three possible states:

$$M_i = j = \begin{cases} 1 & \text{if } M_i < \mu_1 & (\text{adequate education}) \\ 2 & \text{if } \mu_1 \leq M_i < \mu_2 & (\text{undereducation}) \\ 3 & \text{otherwise.} & (\text{overeducation}) \end{cases}$$

The probabilities for individual i to be in situation j are

$$\mathbb{P}(M_i = j | O_i, X_i) = \frac{\exp(O_i \alpha_j + X_i \beta_j)}{\sum_{h=1,2,3} \exp(O_i \alpha_h + X_i \beta_h)}$$

We rely on three specifications to estimate the determinants of educational mismatch and of whether foreign credentials are transferable in the host labour market. Therefore, in addition to the confounding variables, each specification includes additional explanatory variables that measure education acquired abroad and the

⁴SFSO, regions of analyses, <https://www.bfs.admin.ch/bfs/fr/home/statistiques/themes-transversaux/analyses-spatiales/niveaux-geographiques/regions-analyse.html>. Accessed 14 June 2018.

status of foreign credential recognition: the country of education (specification 1), the status concerning the recognition of a foreign diploma (specification 2), and an interaction between the recognition of a foreign diploma and the country of education (specification 3). The relative risk ratios are presented along with the level of significance (* < 0.10; ** < 0.05).

We use a logistic regression model to explain the probability (*p*) of skills mismatch according to different factors, including whether education is acquired abroad (specification 1'), whether foreign education has been recognized (specification 2') or both (specification 3'). The formula is the following:

$$\text{logit}(p) = \ln\left(\frac{p}{1-p}\right) = X_i\beta,$$

where *X* is a vector of explanatory variables (including a constant), and the exponential value of β provides the odds ratios associated with each of the explanatory variables in the three specifications.

Given the cross-sectional nature of the data and the empirical methods outlined above, we cannot address adequately the issue of non-random selection into the application process for recognition as stressed by Brücker et al. (2016) and Tani (2017). Accordingly, the expected results should best be interpreted conservatively as descriptive. Finally, all descriptive and regression analyses incorporate individual weights to consider the sampling design of the Migration-Mobility Survey and thus obtain reliable estimates concerning the population of interest. Accordingly, we calculate robust standard errors using the “linearization” variance estimator based on a first-order Taylor series linear approximation (Eltinge and Sribney 1997).

Table 7.2 Educational mismatch and skills mismatch according to the status of recognition of foreign qualification (in %)

Recognition of foreign qualification	Educational mismatch				Skills mismatch		
	Adequate education	Under-education	Over-education	Total	Adequate skills	Skills mismatch	Total
Swiss qualification	74.9	9.3	15.8	100.0	97.4	2.6	100.0
Yes, obtained	68.7	10.9	20.3	100.0	93.3	6.7	100.0
Yes, not obtained	36.4	16.5	47.1	100.0	80.6	19.4	100.0
Yes, not completed	55.1	0.2	44.7	100.0	66.9	33.1	100.0
No, not necessary	61.2	13.8	24.9	100.0	89.2	10.8	100.0
No, other reasons	28.1	16.3	55.7	100.0	71.7	28.3	100.0
Total	57.1	13.6	29.3	100.0	86.9	13.1	100.0

Sample size: 4,184

Source: Migration-Mobility Survey 2016. Weighted results

7.4 Results

7.4.1 Incidence of Educational and Skills Mismatches

Table 7.2 shows the proportion of respondents who are adequately educated, under-educated or overeducated according to the status of recognition of foreign qualification. This table also displays the incidence of skills mismatch. The proportion of migrants with adequate qualifications is the highest among those educated in Switzerland (75%) or among those who obtained recognition (69%). It is the lowest among those who requested recognition but did not obtain it (36%) and among those who did not ask for recognition for other reasons (28%).

The group of those who did not ask for recognition for other reasons is also characterized with a high incidence of overeducation (56%), which also affects approximately 45% of the persons who asked for recognition but did not obtain it. By contrast, overeducation is rather low (less than 25%) among migrants who did not need recognition or obtained it. The incidence of overeducation is the lowest among persons who obtained their diploma in Switzerland.

Skills mismatch, which arises in 13% of the sample, is less frequent among migrants educated in Switzerland (3%) or having obtained recognition (7%) than among other groups, in particular those not having obtained recognition (33%) or not having requested it (28%).

Table 7.3 provides the distribution of educational and skills mismatch according to the region of origin, which was self-reported by the respondents. The share of persons with adequate education is higher among those from North America (69%)

Table 7.3 Education mismatch and skill mismatch according to the region or origin (in %)

Countries of origin	Educational mismatch				Skill mismatch		
	Adequate education	Under-education	Over-education	Total	Adequate skills	Skills mismatch	Total
Countries bordering Switzerland	64.4	11.8	23.8	100.0	91.2	8.8	100.0
Countries from other EU28/EFTA	42.9	19.3	37.7	100.0	79.4	20.6	100.0
Countries from other Europe	51.6	8.9	39.4	100.0	92.5	7.5	100.0
North America	68.8	9.7	21.5	100.0	91.0	9.0	100.0
Africa	53.9	14.5	31.5	100.0	85.0	15.0	100.0
South America	38.1	9.1	52.8	100.0	73.8	26.2	100.0
Asia	77.7	5.0	17.3	100.0	92.2	7.8	100.0
Total	57.0	13.6	29.3	100.0	86.9	13.1	100.0

Sample size: 4,171

Source: Migration-Mobility Survey 2016. Weighted results

Table 7.4 Reasons for educational mismatch and skills mismatch, among those concerned (in %)

	Overeducation	Skills mismatch
To avoid unemployment	30.2	31.5
Inadequate knowledge of one of the national languages	18.2	21.1
Lack of jobs with corresponding qualifications	16.6	18.9
Family obligations	14.5	12.7
A change of career	13.7	9.3
No interest in changing jobs	12.4	7.3
Qualifications obtained abroad are not recognized in Switzerland	11.8	15.6
Future salary improvements and promotional opportunities	11.5	6.8
To be able to study at the same time	6.4	5.7
Origin, religion or social background	1.1	1.9
Health reasons	1.0	1.1
Other obstacle	9.3	13.9
No particular obstacles	18.6	12.6
Sample size	1,185	553

Note: Multiple answers possible

Source: Migration-Mobility Survey 2016. Weighted results

and Asia (most of them being Indian migrants, 78%), who generally arrive in Switzerland with a job contract from multinational companies or universities. This share is also high (64%) among migrants from countries bordering Switzerland (Austria, France, Germany, and Italy). It is lower among migrants from another European country (primarily Portugal and Spain, 43%) and from South America (38%). The latter group has the highest incidence of overeducation (53%), whereas the incidence of undereducation is the highest among migrants from other EU28/EFTA countries (19%).

The highest rate of skills mismatch is observed among South Americans (26%) and migrants from other EU28/EFTA countries (20%). This rate is less than 10% among migrants from countries bordering Switzerland, Asia, other Europe and North America.

Migrants who were either overeducated or mismatched in skills were asked to provide the reasons for their current situation (Table 7.4). For both indicators of mismatch, the main reason is the wish to avoid unemployment, i.e., the wish to work even when its cost is to be overeducated or mismatched in skills. Approximately 30% of the respondents reported this reason. The second reason, which constitutes approximately 20% of the migrants, refers to the lack of local language skills. Lack of jobs with corresponding qualifications, family obligations and a change of career are other reasons that are mentioned.

Table 7.5 Results of multi-logit models. Determinants of under- and over-education (relative-risks ratios)

	(1)			(2)			(3)		
	UE	OE	UE	OE	UE	OE	UE	OE	
Women	0.64** (0.12)	1.60** (0.18)	0.62** (0.11)	1.58** (0.19)	0.64** (0.12)	1.58** (0.19)	0.64** (0.12)	1.58** (0.19)	
Age	0.90 (0.07)	1.08 (0.07)	0.90 (0.07)	1.07 (0.07)	0.90 (0.07)	1.07 (0.07)	0.90 (0.07)	1.07 (0.07)	
Age squared	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	
Compulsory education	7.28** (2.05)	2.07** (0.51)	7.40** (2.08)	2.64** (0.67)	7.75** (2.2)	2.64** (0.67)	7.75** (2.2)	2.64** (0.67)	
Higher secondary education (no access to university)	13.59** (4.45)	3.05** (0.86)	13.06** (4.25)	3.61** (1.03)	14.07** (4.64)	3.61** (1.03)	14.07** (4.64)	3.60** (1.03)	
High school (access to university)	3.60** (1.15)	8.22** (2.12)	3.59** (1.14)	9.25** (2.53)	3.72** (1.20)	9.25** (2.53)	3.72** (1.20)	9.27** (2.54)	
Advanced technical and professional training	0.58* (0.19)	3.50** (0.81)	0.63 (0.20)	3.70** (0.89)	0.59 (0.19)	3.70** (0.89)	0.59 (0.19)	3.75** (0.91)	
Bachelor or equivalent	0.45** (0.14)	1.54* (0.35)	0.50** (0.15)	1.86** (0.42)	0.50** (0.15)	1.86** (0.42)	0.50** (0.15)	1.87** (0.43)	
Master or equivalent	0.04** (0.02)	1.43* (0.29)	0.05** (0.02)	1.79** (0.37)	0.05** (0.02)	1.79** (0.37)	0.05** (0.02)	1.81** (0.37)	
On-the-job training: yes	1.61* (0.44)	0.62** (0.13)	1.66* (0.45)	0.68* (0.14)	1.62* (0.45)	0.68* (0.14)	1.62* (0.45)	0.69* (0.14)	
Work experience	0.99 (0.02)	0.98 (0.02)	0.99 (0.02)	0.98 (0.02)	0.98 (0.02)	0.98 (0.02)	0.98 (0.02)	0.98 (0.02)	
Work experience squared	1.00* (0.00)	1.00 (0.00)	1.00* (0.00)	1.00 (0.00)	1.00** (0.00)	1.00 (0.00)	1.00** (0.00)	1.00 (0.00)	
Job in the same company as before immigration	1.23	0.65**	1.27	0.74**	1.32	0.74**	1.32	0.73**	

	(0.21)	(0.08)	(0.22)	(0.09)	(0.23)	(0.09)
Job in a different company than before immigration	1.32	0.46**	1.33	0.50**	1.38	0.50**
	(0.34)	(0.09)	(0.33)	(0.10)	(0.35)	(0.10)
Years since migration	1.10	0.95	1.09	0.98	1.11	0.98
	(0.14)	(0.07)	(0.13)	(0.07)	(0.14)	(0.08)
Years since migration squared	0.99	1.00	0.99	1.00	0.99	1.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Understand most of a conversation in the local language	1.04	1.01	1.01	0.94	0.99	0.94
	(0.25)	(0.18)	(0.24)	(0.17)	(0.24)	(0.17)
Parts of a conversation	0.94	1.03	0.87	0.94	0.87	0.93
	(0.27)	(0.22)	(0.25)	(0.21)	(0.25)	(0.21)
Some words and phrases	1.17	1.32	1.04	1.14	1.06	1.15
	(0.44)	(0.35)	(0.39)	(0.31)	(0.40)	(0.31)
Nothing at all	0.24**	1.01	0.21**	0.92	0.22**	0.91
	(0.16)	(0.44)	(0.14)	(0.38)	(0.15)	(0.38)
Speak the local language somewhat fluently	0.55**	1.24	0.58**	1.25	0.55**	1.25
	(0.14)	(0.23)	(0.15)	(0.23)	(0.14)	(0.23)
Does not speak very well	0.68	1.18	0.71	1.22	0.69	1.22
	(0.19)	(0.25)	(0.19)	(0.26)	(0.19)	(0.26)
Knows some vocabulary	0.47**	1.00	0.49**	1.03	0.48**	1.03
	(0.16)	(0.25)	(0.16)	(0.26)	(0.17)	(0.26)
Does not speak the local language at all	0.63	1.26	0.69	1.41	0.66	1.40
	(0.34)	(0.42)	(0.36)	(0.46)	(0.35)	(0.46)
B permit	0.67*	1.09	0.68*	1.12	0.67*	1.13
	(0.15)	(0.18)	(0.16)	(0.19)	(0.15)	(0.20)
Diplomat/Ci permit	1.49	0.53	1.70	0.57	1.59	0.57
	(0.85)	(0.33)	(1.03)	(0.36)	(0.94)	(0.36)

(continued)

Table 7.5 (continued)

	(1)		(2)		(3)	
	UE	OE	UE	OE	UE	OE
L permit	0.94 (0.39)	2.91** (0.87)	0.84 (0.35)	2.54** (0.78)	0.85 (0.36)	2.57** (0.79)
Origin countries from other EU28/EFTA	0.73 (0.16)	2.03** (0.28)	0.78 (0.17)	1.93** (0.27)	0.73 (0.16)	1.92** (0.27)
Origin countries from other Europe	1.27 (0.65)	1.88 (0.73)	0.82 (0.41)	1.87 (0.74)	1.28 (0.69)	1.85 (0.74)
Origin countries from other OECD	1.44 (0.85)	3.22** (0.79)	1.93** (0.76)	1.02 (0.21)	1.98* (0.79)	1.02 (0.21)
Origin countries from Africa	1.13 (0.65)	1.36 (0.41)	0.64 (0.36)	1.26 (0.32)	1.08 (0.60)	1.22 (0.34)
Origin countries from South America	2.81** (1.06)	2.62** (0.67)	0.99 (0.33)	2.39** (0.45)	2.92** (1.13)	2.19** (0.57)
Origin countries from Asia and other	1.68 (0.86)	0.59 (0.19)	0.68 (0.32)	0.65 (0.17)	1.88 (0.96)	0.62 (0.20)
Married	0.80 (0.15)	0.90 (0.13)	0.78 (0.15)	0.89 (0.13)	0.79 (0.15)	0.89 (0.13)
Other civil status	0.61* (0.18)	0.81 (0.16)	0.66 (0.19)	0.87 (0.18)	0.63 (0.18)	0.88 (0.18)
Mittelland	1.06 (0.24)	1.24 (0.20)	1.06 (0.24)	1.26 (0.21)	1.07 (0.24)	1.27 (0.21)
North-west Switzerland	1.60 (0.49)	1.18 (0.26)	1.60 (0.48)	1.26 (0.28)	1.65* (0.50)	1.25 (0.28)
Zurich	1.60* (0.40)	0.90 (0.17)	1.64** (0.41)	0.96 (0.18)	1.67** (0.42)	0.95 (0.18)
East Switzerland	1.30 (0.41)	1.43 (0.34)	1.37 (0.42)	1.62* (0.40)	1.36 (0.43)	1.62** (0.40)

Central Switzerland	1.18 (0.45)	0.92 (0.24)	1.23 (0.46)	1.04 (0.26)	1.24 (0.47)	1.03 (0.26)
Ticino	1.18 (0.34)	1.26 (0.28)	1.18 (0.34)	1.23 (0.28)	1.17 (0.34)	1.24 (0.28)
Education from the EU28/EFTA	0.93 (0.36)	2.05** (0.59)				
Education from other OECD	1.22 (0.75)	0.46** (0.15)				
Education from the rest of the World	0.26** (0.13)	2.28** (0.79)				
Recognition of foreign qualification obtained			0.70 (0.33)	1.03 (0.35)		
Recognition of foreign qualification not obtained			1.61 (1.00)	3.15** (1.27)		
Recognition of foreign qualification not completed			0.04** (0.04)	2.82** (1.21)		
Recognition not necessary			0.84 (0.33)	1.67* (0.48)		
No recognition for other reasons			1.57 (0.65)	5.65** (1.77)		
Education from the EU28/EFTA or other OECD						
Recognition obtained					0.75 (0.36)	0.97 (0.35)
Recognition not obtained					1.93 (1.22)	2.58** (1.16)
Recognition not completed					0.00** (0.00)	2.87** (1.30)

(continued)

Table 7.5 (continued)

	(1)		(2)		(3)	
	UE	OE	UE	OE	UE	OE
Recognition not necessary					0.87 (0.34)	1.66* (0.48)
No recognition for other reasons					1.74 (0.73)	5.86** (1.90)
Education from the rest of the World						
Recognition obtained					0.16 (0.18)	2.03 (1.08)
Recognition not obtained					0.20 (0.28)	6.26** (3.47)
Recognition not completed					0.40 (0.53)	2.44 (1.65)
Recognition not necessary					0.25** (0.13)	1.82 (0.68)
No recognition for other reasons					0.38 (0.23)	4.52** (1.90)
Constant	3.31 (5.04)	0.02** (0.03)	3.36 (5.13)	0.02** (0.03)	3.11 (4.76)	0.02** (0.03)
Observations	4,063	4,063	4,066	4,066	4,063	4,063
Percentage correctly predicted	67.5%		68.6%			68.9%

Note: The outcome variables are dummies of undereducation (UE) and overeducation (OE). Linearized SE in parentheses, ** p < 0.05, * p < 0.10. Reference groups are men, vocational education and/or training (highest level of education), on-the-job training: no, no job before immigration, does not understand the local language at all, does not speak the local language at all, C permit, birth countries bordering Switzerland (Italy, Germany, France, Austria), Single, Lake Geneva (Vaud, Valais, Geneva), highest level of education acquired in Switzerland. Individuals without any formal education or with a PhD are excluded
Source: Migration-Mobility Survey 2016. Weighted results (normalized weights)

7.4.2 *Factors Explaining Educational Mismatch*

Estimation results on the determinants of educational mismatch are presented in Table 7.5. We first discuss the estimates of relative-risk ratios for the control variables before commenting on the estimates associated with the country of education and the recognition of a foreign diploma.

Gender is significantly associated with the risk of both overeducation and undereducation; women are less likely to be undereducated but are more likely to be overeducated compared with men. A low level of education increases both risks, whereas a high level of education increases the risk of being overeducated but diminishes the risk of undereducation.

On-the-job training is statistically significant, and can be viewed as an investment that improves human capital accumulation. That is, it is positively associated with the risk of undereducation but is negatively associated with the risk of overeducation.

Compared with a situation in which migrants are unemployed before migration, those migrants working for either the same or another company are significantly less likely to be overeducated. By contrast, having a job before migration is not statistically associated with the risk of undereducation. This result can be explained by the fact that migrants arriving in Switzerland after an episode of unemployment or immediately after obtaining their diploma are more inclined to work even when their educational qualifications do not correspond to the job requirements. Most likely, those migrants consider the current job in Switzerland an opportunity for occupational upgrading.

The results also show that a low knowledge of the local language is not related to overeducation but is negatively associated with the risk of undereducation. Moreover, holding an annual permit B, compared with a long-term permit C, is negatively associated with the probability of overeducation.⁵ Although surprising, this result can be explained by the fact that holders of a resident permit B generally fill jobs for which there exist labour shortages (Pecoraro and Ruedin 2017). A short-term permit L, in contrast, increases the probability of undereducation.

Compared with migrants originating from one of the neighbouring countries, the probability of undereducation is higher among migrants from South America (except in specification 2) and migrants belonging to an OECD country outside Europe (except in specification 1). The risk of overeducation is higher among other EU28/EFTA migrants, migrants from an OECD country outside Europe (specification 2), and from South American countries.

When those confounding factors are controlled for, we find that the place of education plays a significant role in the case of both undereducation and overeducation (see specification 1). For a migrant, having obtained his diploma in a country from the rest of the World significantly decreases the probability of being undereducated,

⁵ Given the close correlation between permits and the duration of residence in Switzerland, the association between years since migration and the probability of educational mismatch is generally not significant. The same applies when examining the determinants of skills mismatch.

compared with a situation in which the highest diploma was obtained in Switzerland. In contrast, having obtained the diploma not in Switzerland increases the risk of being overeducated. Such an increase is observed among migrants educated in a EU28/EFTA country. By contrast, the risk is reduced for those having obtained their diploma in another OECD country. The latter result can most likely be explained by the specificities of North Americans, who generally arrive in Switzerland for work purposes with high-quality educational credentials. For the migrants belonging to the group of “other countries”, the situation is different because this group is more heterogeneous, with an overrepresentation of migrants arriving in Switzerland with reasons other than professional (see Chap. 5 of this book).

In specification 2, we observe that the status of non-recognition of the foreign diploma is significantly related to the risk of overeducation. First, compared with the migrants holding a Swiss diploma, those who obtained recognition present a similar risk of overeducation. This risk is however significantly higher for those who considered recognition unnecessary (the relative risk of being overeducated is expected to increase by a factor of 1.67 given the other variables in the model are held constant) and for those who did not complete recognition (the relative risk is expected to increase by a factor of 2.82 *ceteris paribus*) or did not obtain it (the relative risk is expected to increase by a factor of 3.15 *ceteris paribus*). It is the highest among migrants who did not ask for recognition (the relative risk is expected to increase by a factor of 5.65 *ceteris paribus*), confirming the importance of the recognition of a foreign diploma in the host labour market. When focussing on the interactions between both variables (specification 3), we observe that those educated in EU28/EFTA countries face a higher risk of overeducation when recognition was not obtained. The same result is observed for migrants educated in other countries, in particular when recognition is not obtained or not requested for other reasons. For this group, the recognition of the diploma also leads to a situation in which the likelihood of overeducation does not significantly differ from that of migrants who have obtained a Swiss diploma. Results concerning undereducation are less clear and more difficult to address.

7.4.3 Factors Explaining Skills Mismatch

The determinants of skills mismatch were also examined using three specifications (Table 7.6), with the same variables on the right-hand side as the ones used for educational mismatch. Again, we describe the results related to the control variables before focussing on the two dimensions of interest, i.e., the country of education and the recognition of a foreign diploma.

The likelihood of skills mismatch is higher among women compared with men, among migrants from other EU28/EFTA countries, from other OECD countries (in specification 1' only) and from South America compared with migrants from countries bordering Switzerland. Compared with migrants who graduated from a vocational track, the odds ratio is lower among those with a tertiary-level education

Table 7.6 Results of logit models. Determinants of skills mismatch (odds ratios)

	(1')	(2')	(3')
Women	1.83**	1.82**	1.82**
	(0.26)	(0.26)	(0.26)
Age	1.04	1.02	1.02
	(0.08)	(0.07)	(0.07)
Age squared	1.00	1.00	1.00
	(0.00)	(0.00)	(0.00)
Compulsory education	0.60*	0.71	0.71
	(0.16)	(0.19)	(0.19)
Higher secondary education (no access to university)	0.78	0.87	0.87
	(0.21)	(0.24)	(0.24)
High school (access to university)	0.65	0.66	0.65
	(0.17)	(0.18)	(0.17)
Advanced technical and professional training	0.87	0.86	0.87
	(0.24)	(0.25)	(0.25)
Bachelor or equivalent	0.54**	0.61*	0.61*
	(0.15)	(0.17)	(0.17)
Master or equivalent	0.40**	0.47**	0.47**
	(0.1)	(0.12)	(0.12)
On-the-job training: yes	1.03	1.15	1.16
	(0.26)	(0.29)	(0.29)
Work experience	0.98	0.98	0.98
	(0.02)	(0.02)	(0.02)
Work experience squared	1.00	1.00	1.00
	(0.00)	(0.00)	(0.00)
Job in the same company as before immigration	0.55**	0.60**	0.60**
	(0.09)	(0.10)	(0.09)
Job in a different company than before immigration	0.15**	0.16**	0.16**
	(0.05)	(0.05)	(0.05)
Years since migration	0.89	0.91	0.91
	(0.08)	(0.08)	(0.08)
Years since migration squared	1.01	1.01	1.01
	(0.01)	(0.01)	(0.01)
Understand most of a conversation in the local language	1.05	1.01	1.04
	(0.23)	(0.22)	(0.23)
Parts of a conversation	1.43	1.37	1.38
	(0.39)	(0.38)	(0.39)
Some words and phrases	1.26	1.15	1.19
	(0.38)	(0.35)	(0.37)
Nothing at all	1.06	1.06	1.06
	(0.66)	(0.64)	(0.65)
Speak the local language somewhat fluently	1.16	1.12	1.11
	(0.26)	(0.25)	(0.25)

(continued)

Table 7.6 (continued)

	(1')	(2')	(3')
Does not speak very well	0.84	0.84	0.83
	(0.23)	(0.23)	(0.23)
Knows some vocabulary	1.20	1.21	1.19
	(0.37)	(0.38)	(0.38)
Does not speak the local language at all	1.08	1.13	1.10
	(0.43)	(0.46)	(0.45)
B permit	1.05	1.08	1.10
	(0.22)	(0.22)	(0.23)
Ci permit	0.64	0.69	0.71
	(0.53)	(0.56)	(0.58)
L permit	1.04	0.94	0.96
	(0.35)	(0.31)	(0.32)
Origin countries from other EU28/EFTA	2.22**	2.03**	2.03**
	(0.38)	(0.36)	(0.35)
Origin countries from other Europe	0.48	0.47	0.45
	(0.25)	(0.26)	(0.24)
Origin countries from other OECD	2.69**	1.18	1.18
	(0.75)	(0.35)	(0.34)
Origin countries from Africa	1.59	1.59	1.42
	(0.51)	(0.47)	(0.47)
Origin countries from South America	2.30**	2.24**	1.80*
	(0.71)	(0.51)	(0.54)
Origin countries from Asia and other	0.85	0.92	0.88
	(0.40)	(0.40)	(0.41)
Married	0.84	0.83	0.82
	(0.14)	(0.14)	(0.14)
Other civil status	1.06	1.09	1.10
	(0.27)	(0.29)	(0.29)
Mittelland	1.00	1.03	1.05
	(0.19)	(0.20)	(0.20)
North-west Switzerland	1.06	1.14	1.14
	(0.27)	(0.30)	(0.30)
Zurich	1.20	1.25	1.24
	(0.26)	(0.28)	(0.27)
East Switzerland	0.81	0.85	0.87
	(0.26)	(0.28)	(0.28)
Central Switzerland	0.93	1.03	1.03
	(0.28)	(0.31)	(0.31)
Ticino	1.28	1.21	1.24
	(0.38)	(0.36)	(0.37)

(continued)

Table 7.6 (continued)

	(1')	(2')	(3')
Education from the EU28/EFTA	5.43**		
	(2.13)		
Education from other OECD	1.87		
	(0.87)		
Education from the rest of the World	6.56**		
	(3.05)		
Recognition of foreign qualification obtained		2.21	
		(1.12)	
Recognition of foreign qualification not obtained		6.20**	
		(3.50)	
Recognition of foreign qualification not completed		11.90**	
		(7.62)	
Recognition not necessary		4.69**	
		(1.87)	
No recognition for other reasons		10.21**	
		(4.19)	
Education from the EU28/EFTA or other OECD:			
Recognition obtained			1.90
			(1.05)
Recognition not obtained			3.88**
			(2.36)
Recognition not completed			13.06**
			(8.77)
Recognition not necessary			4.64**
			(1.84)
No recognition for other reasons			9.83**
			(4.07)
Education from the rest of the World:			
Recognition obtained			6.02**
			(3.73)
Recognition not obtained			19.60**
			(17.07)
Recognition not completed			3.81
			(3.18)
Recognition not necessary			4.57**
			(2.30)
No recognition for other reasons			12.33**
			(6.04)
Constant			0.03**
			(0.04)

(continued)

Table 7.6 (continued)

	(1')	(2')	(3')
Observations	4,071	4,074	4,071
Percentage correctly predicted	87.3%	87.4%	87.3%

Note: The outcome variable is a binary variable for the risk of skills mismatch. Linearized SE in parentheses, ** $p < 0.05$, * $p < 0.10$. Reference groups are men, vocational education and/or training (highest level of education), on-the-job training: no, no job before immigration, does not understand the local language at all, does not speak the local language at all, C permit, birth countries bordering Switzerland (Italy, Germany, France, Austria), single, Lake Geneva (Vaud, Valais, Geneva), highest level of education acquired in Switzerland. Individuals without any formal education or with a PhD are excluded

Source: Migration-Mobility Survey 2016. Weighted results (normalized weights)

(bachelor or master). Having a job before migration decreases the probability of skills mismatch, which confirms the results observed for the determinants of educational mismatch.

Having controlled for those control variables, the country in which the diploma was acquired appears to be significantly associated with the risk of skills mismatch (specification 1'). The estimated odds ratio is greater than five for those having completed their education in a EU28/EFTA country or in the rest of the World compared with the case in which the diploma is acquired in Switzerland. The risk of skills mismatch is also higher for those with a diploma from another OECD country, but the related estimate is not significant. Once again, the relatively good situation of this group on the labour market can be explained by the characteristics of the migrants from North America. Given the job opportunities and the wages in their country of origin, those migrants generally arrive in Switzerland when they have an assurance of obtaining a job that provides them better working conditions than they can expect in the country of origin. Such conditions are generally granted in the absence of skills mismatch. Moreover, among North American migrants, the circulatory migrants who are employed by their (multinational) companies are overrepresented; according to the survey, among North American migrants who had a job at the time of migration, 43% worked for the same company as before migration (job transfer) and then present a low risk of skills mismatch when reallocated in a new country.

Compared with a holder of a Swiss diploma, a migrant having obtained the recognition of a foreign diploma has a higher risk of skills mismatch (specification 2'), but the related estimate is not significant. Other groups have a higher risk of skills mismatch, significantly different from that of the reference population. This point is particularly true for people who have not completed recognition or who did not obtain it (compared with the migrants holding a Swiss diploma, the odds of being mismatched in skills is greater than ten in both cases). The interaction between both variables (specification 3') confirms those results, with the highest estimate of the odds ratio among people from the rest of the World not having obtained recognition.

7.5 Conclusion

Our analyses aimed at examining the relationship between the recognition of a diploma and the risk of skill mismatch. Before further discussion of the overall results, we must mention some limitations. First, analyses based on survey data are prone to different forms of social desirability bias, in particular for questions related to the level of education. Second, surveys on migrants are generally difficult to perform because this population is very mobile, which is particularly true for recently arrived migrants. Another issue when surveying recently arrived migrants is related to their capacity to understand the local language and to fill in survey questionnaires. However, as mentioned in Chap. 2, the survey was specifically designed for migrant populations, with a questionnaire translated into the migrants' mother tongue.

The main results are the following. First, concerning the incidence of overeducation, our results partially contradict those of Visintin et al. (2015), who observe that overeducation is more common among migrants originating from the EU15 and Asia but not among those from Africa and South America. Although the migrants from EU28/EFTA without common boundaries with Switzerland are shown to exhibit a high rate of overeducation (almost 40%), South American workers have the highest rate at more than 50%. The latter, who represent a small group of migrants in Switzerland, most likely suffer from a lack of support from their migrants' community in terms of professional integration. Moreover, migrants from Asia face a low incidence of overeducation compared with the reference group (i.e., migrants from EU28/EFTA countries bordering Switzerland), a result that can be explained by the highly educated profile of this group, largely composed of migrants from India.

Second, the significant association between the place of education and the risk of both skills and educational mismatches confirms the hypothesis of an imperfect international transferability of human capital mentioned by Chiswick and Miller (2009). Although educational systems abroad are most likely as good as the one in Switzerland in a large range of countries, foreign diplomas do not secure access to related jobs in Switzerland. Therefore, the recognition of foreign credentials can be viewed as a strategy to decrease the risks of overeducation and skills mismatch, in particular for the regulated professions.

Finally, by focussing on the link between job mismatch and foreign-acquired education, our analysis provides results that can have direct implications for the administrations in charge of the policies on the recognition of foreign diplomas. We show that the recognition of foreign credentials is expected to reduce the risk of skills or educational mismatch. Although this relationship are unlikely to be causal, specific policies that aim at encouraging requests for recognition of non-regulated professions and strategies to facilitate the process (for instance by promoting access to additional courses) might improve wages and, by extension, job satisfaction for migrants. Further research confirming that the causal effect of credential recognition is indeed beneficial to immigrants' assimilation in the host labour market is needed more than ever.

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