Title
Skill mismatch in the labour market and adult learning

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Chapter 7

Skill Mismatch in the Labour Market and Adult Learning

Summary

This chapter explores the issue of skill mismatch in the labour market and its relationship to adult learning. The extent and distribution of mismatch between the day to day literacy related requirements of workers and the literacy skills they have obtained is an important issue that can be addressed with the ALL data. Understanding better the interaction of the supply of, and demand for, literacy skills can have important consequences for industrial policies and labour market structures that foster demand, on the one hand, and lifelong learning policies and education structures that shape supply, on the other. According to the methodology applied to conduct the data analyses, skill mismatch is found to be on the order of about 30 to 40 per cent in all countries surveyed. As defined for the purposes of this chapter, mismatch includes both skill deficits and skill surpluses. It is found that the distribution of surplus tends to be concentrated among younger age cohorts as well as women and non-immigrants, while deficits tend to accrue to men, older adults and immigrants. Skill match-mismatch is also found to have a strong link to the incidence of participation in adult education as well as to the sources of financing that support participation.

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Skill Mismatch in the Labour Market and Adult Learning

7.1 Overview and highlights

This chapter explores the issue of skill mismatch in the labour market and its relationship to adult learning. The extent and distribution of mismatch between the day to day literacy related requirements of workers and the literacy skills they have obtained is an important issue that can be addressed with the ALL data. Understanding better the interaction of the supply of, and demand for, literacy skills can have important consequences for industrial policies and labour market structures that foster demand, on the one hand, and lifelong learning policies and education structures that shape supply, on the other. According to the methodology applied to conduct the data analyses, skill mismatch is found to be on the order of about 30 to 40 per cent in all countries surveyed. As defined for the purposes of this chapter, mismatch includes both skill deficits and skill surpluses. It is found that the distribution of surplus tends to be concentrated among younger age cohorts as well as women and non-immigrants, while deficits tend to accrue to men, older adults and immigrants. Skill match-mismatch is also found to have a strong link to the incidence of participation in adult education as well as to the sources of financing that support participation.

Key findings of these analyses are:

- The total proportion of skill matches across countries is consistently around 60 to 70 per cent, including both high- and low-skill matches.
- Approximately 10 to 30 per cent of the workforce, depending on the country, falls into the category of 'skill deficit'.
- The reserve of skills, or skills surplus, varies substantially by country. Hungary and Norway have over 30 per cent of working adults with a skills surplus whereas Italy's reserve is around 13 per cent.
- Gender differences in skill mismatch are for the most part marginal but the proportion of high-skill matches is higher for men in more than half of the countries considered, including Norway, the Netherlands, New Zealand, Switzerland and the United States.

- Generally, more women than men are in jobs that do not make full use of their literacy skills.
- Consistent with skill-age distributions, skill surpluses are generally higher among younger age cohorts. Close to 40 per cent of all youth and young adults who are in the labour market in Hungary and Norway are in a skill surplus situation. The estimate is also comparatively high in Bermuda, Canada and the Netherlands, where there are about 30 per cent of young adults in a skill surplus situation.
- For a majority of countries, significant numbers of immigrants do not have the literacy skills required in their jobs. This is especially the case in countries with high immigration rates, like Canada, New Zealand, Switzerland and the United States.
- Workers in high-skill matches tend to participate more in adult education on average than any other workers. This is followed by workers in a skill deficit situation. The lowest participation rates are among workers in a low skill match situation.
- There are more women than men in the high skill group who participate in adult education and training, which is consistent with gender differences in the overall participation rate for employed men and women.
- Employers display the highest propensity to invest in workers who are in high-skill matches. This is followed by those in deficit situations, surplus situations and low-skill matched situations.
- In a number of countries, results suggest that government financing appears to reach those in high-skill matched situations as well as those in surplus situations more than those in a skill deficit or low-skill match situation.

7.2 Skill mismatch in the labour market and adult learning

This chapter explores the issue of skill mismatch in the labour market and its relationship to adult learning. According to the methodology applied to conduct the data analyses, skill mismatch is found to be in the order of about 30 to 40 per cent in all countries surveyed. As defined for the purposes of this chapter, mismatch includes both skill deficits and skill surpluses. It is found that the distribution of surplus tends to be concentrated among younger age cohorts as well as women and non-immigrants, while deficits tend to accrue to men, older adults and immigrants. Skill mismatch is also found to have a strong link to the incidence of participation in adult education as well as to the sources of financing that support participation.

The first section introduces the concept of skill mismatch in the context of the Adult Literacy and Lifeskills survey. The second section presents comparative data on the extent of skill mistmatch. The third section considers the socio-demographic profile of who is matched or mismatched. The last section considers the relationship between skill mismatch and participation in adult learning.

7.3 Why skill mismatch matters

The extent and distribution of mismatch between the day to day literacy related requirements of workers and the literacy skills they have obtained is an important issue that can be addressed with the ALL data. Understanding better the interaction of the supply of, and demand for, literacy skills can have important consequences for industrial policies and labour market structures that foster demand, on the one hand, and lifelong learning policies and education structures that shape supply, on the other.

Remedial training for workers with "skill deficits" – those who have low skills but nevertheless engage relatively often in literacy and numeracy related activities for productive purposes – has received much attention in recent years not only because deficits reflect labour market inefficiencies which can hamper productivity growth but also because of on-going technology biased change. The latter fosters more jobs which require higher levels of literacy skills. But there are also many workers who have high levels of literacy skills but do not fully exploit them at work (Krahn and Lowe, 1998; Boothby, 1999). This has been referred to as a "skills surplus", which is presumably good for growing knowledge economies in the long run. But a lack of skill use in the workplace may be problematic in the short term because skills might be lost due to lack of use. Literacy skills are like muscles that develop if you use them, otherwise they can be lost (OECD and HRDC, 1997). Therefore, the demand for, and use of, literacy skills should not be taken for granted.

7.4 Extent of skill match-mismatch on the labour market

In this chapter, skill match-mismatch is defined by the fit between the measured literacy skills of workers and the extent to which they engage in literacy related tasks on the job. Conceptually, workers with low literacy skills who are employed in jobs requiring comparatively high engagement in literacy related tasks are said to be in a "deficit" situation, whereas workers with medium to high-skills who are employed in jobs requiring comparatively low engagement in literacy related tasks are said to be in a "surplus" situation. Empirically, persons with reading engagement scores below the median were assigned to the "low to medium-low engagement" category, and those scoring above were assigned to the "medium-high to high-engagement" category. Similarly, persons scoring at Levels 1 and 2 on the prose literacy scale were assigned to the "low-skills" category, and those scoring at Levels 3 and 4/5 were assigned to the "medium- to high-skills" category. These two variables were used to define the following four categories:

- Low-skills, low- to medium-low engagement ⇒ Low-skill match
- Low-skills, medium-high to high-engagement ⇒ Deficit mismatch
- Medium to high-skills, low- to medium-low engagement ⇒ Surplus mismatch
- Medium to high-skills, medium-high to high-engagement ⇒ Medium to high skill match

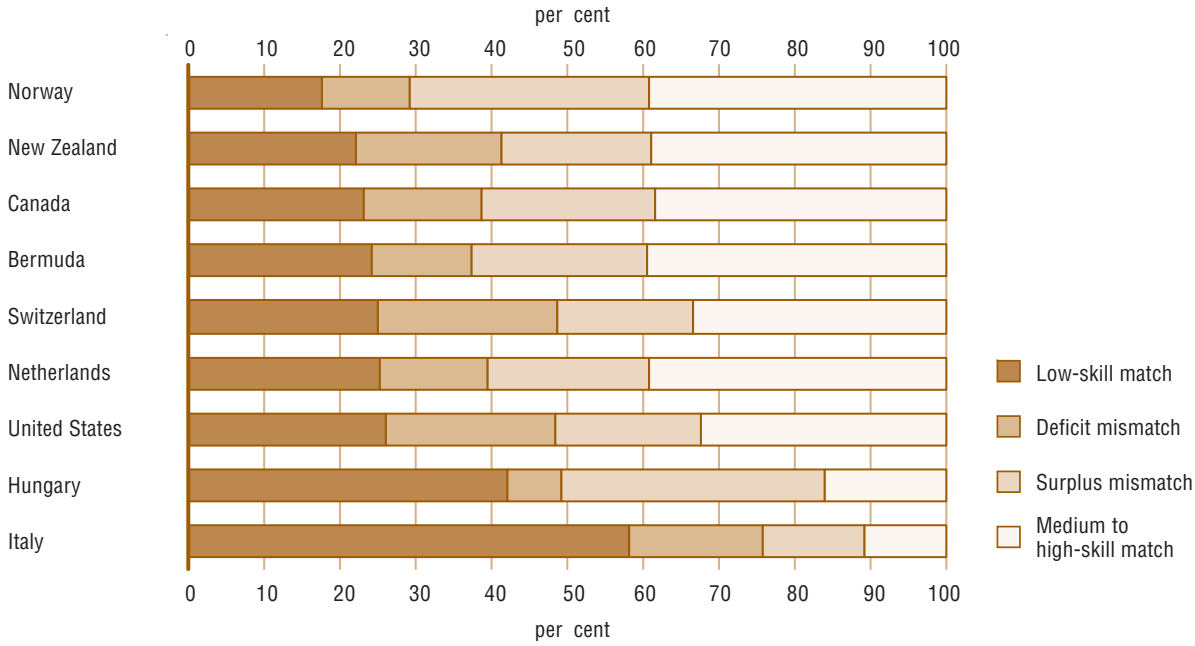
As can be seen from Figure 7.1, this categorisation results in a pattern according to which the proportion of skill matches is consistently around 60 per cent in most countries (70 per cent in Italy). This is not surprising since

one would expect that over time workers with higher skills would find their way into jobs requiring more skills, whereas those with few skills would not move up. Matches include both high-skill and low-skill matches. Hungary and Italy have the highest proportions of low-skill matches with 42 and 58 per cent, respectively, of their low skill workers matched in low skill jobs. Canada, New Zealand and Norway have the lowest proportion of their work forces in low skill matches, ranging from 18 to 23 per cent. Conversely, medium to high skill matches are lowest in Hungary and Italy, but consistently around 40 per cent in Bermuda, Canada, New Zealand, the Netherlands and Norway. Switzerland and the United States are in between with about 33 per cent of their workforces in high-skill matches and 25 per cent in low-skill matches.

Figure 7.1

The distribution of skill mismatch

The distribution of skill mismatch, by country, 2003 and 2008



Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Several other notable observations can be drawn from Figure 7.1. First, the proportions of low versus high-skill matches not only provide an indication of how skilled a workforce is but also the extent of the demand for, and supply of, literacy skills (see Table 7.1 in Annex 7). By extension, the data also offer an insight into the extent of skill mismatch, namely the deficit in literacy skills as well as the surplus. Second, while mismatch is apparent in every country, the extent of it varies. Presumably, a certain level of mismatch is expected in the labour market but whether 10 per cent, for example, is normal cannot be answered with certainty. Higher rates, however, are likely to suggest a need for adjustment.

The data presented in Figure 7.1 suggest that approximately 7 to 24 per cent of the workforce, depending on the country, fall into the category of 'skill deficit'. Countries with a comparatively high skills deficit feature a high proportion of workers with low functional literacy skills who are nevertheless working in jobs that require medium-high to high-engagement in literacy related tasks. This points to labour market inefficiencies and may have negative consequences for productivity as well as workplace health and safety issues, especially as the skill profiles of occupations augment because of continued skill biased technological change, for example, through the diffusion of ICTs and personal computers in workplaces in all sectors and at all levels. The workforces in Switzerland and the United States feature the highest levels of skills deficit with about 24 and 22 per cent of workers categorised as having a relatively low level of literacy skills when considering the frequency and variety of reading tasks they are required to perform at work. Bermuda, Hungary, the Netherlands and Norway register smaller deficits.

Similarly, the reserve of skills, or skills surplus, as defined by the number of workers with medium to high functional literacy skills employed in jobs requiring low to medium-low engagement also varies substantially by country. Hungary and Norway have reserves of skill over 30 per cent whereas Italy's reserve is around 13 per cent. Overall country performances as measured by ALL tend to be related to the size of skill reserves. While a skills surplus is good for growing knowledge economies in the long run, a lack of skill use in the workplace may be problematic in the short run because it exposes workers to the risk of skill loss. Practice engagement is important to nurture and develop skills (Reder, 2009; Desjardins, 2004). By extension workers who are deprived of the opportunity to perform complex literacy tasks may lose some of their proficiency. This forms an important and complex policy issue and points to a need for considering how industrial and labour market policies can foster skill use on the job. Some comparative research has suggested that structural conditions in a given country may in fact allow employers to compete on the basis of low-skill strategies, whereas elsewhere high-skill strategies are used to pursue the production of similar goods and services (Brown, Green and Lauder, 2001).

7.5 Who is matched or mismatched?

This section investigates the demographic and socioeconomic characteristics of skill mismatch by considering interactions with variables such as gender, age, immigration and occupational status.

Gender

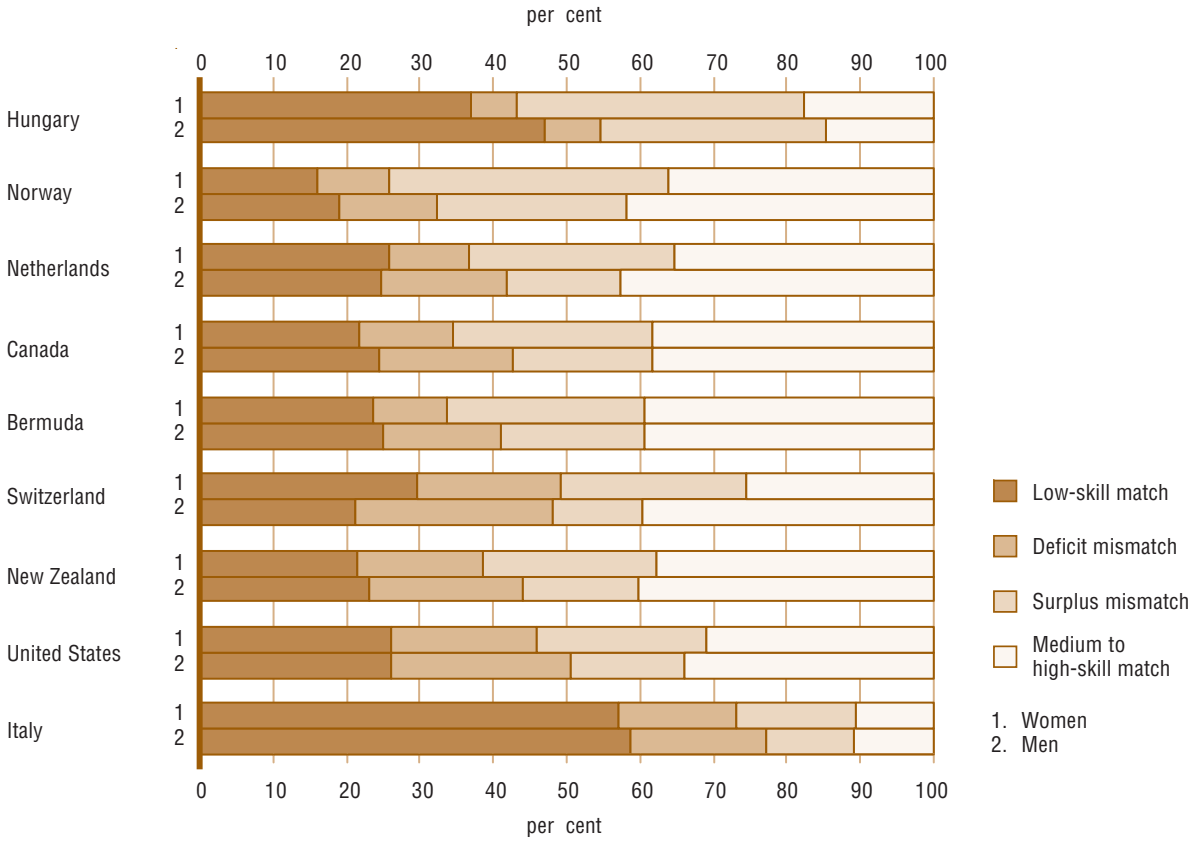
Gender differences in skill mismatch are for the most part marginal but there are some country differences revealed in Figure 7.2 that are worth noting. First, the proportion of medium to high skill matches is higher for men in more than half of the countries considered, including Norway, the Netherlands, New Zealand, Switzerland and the United States. The difference is most pronounced in Switzerland where 40 per cent of men are matched in medium to high skill jobs compared to 26 per cent of women. Men and women are equally matched in medium to high skill jobs in Bermuda, Canada and Italy, while there are more women than men who are matched in medium to high skill jobs in Hungary. Second, skill surpluses tend to be biased towards women while skill deficits tend to be biased towards men. This implies that there are generally more women

than men who are in employment that does not make full use of their literacy skills. Conversely, there are more men than women who are in jobs requiring a high level of engagement in reading even if they have a low level of literacy skill.

Figure 7.2

Skill mismatch by gender

The distribution of skill mismatch, by gender and by country, 2003 and 2008



Countries are ranked by the per cent of women in a surplus mismatch situation in the workplace.

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Age

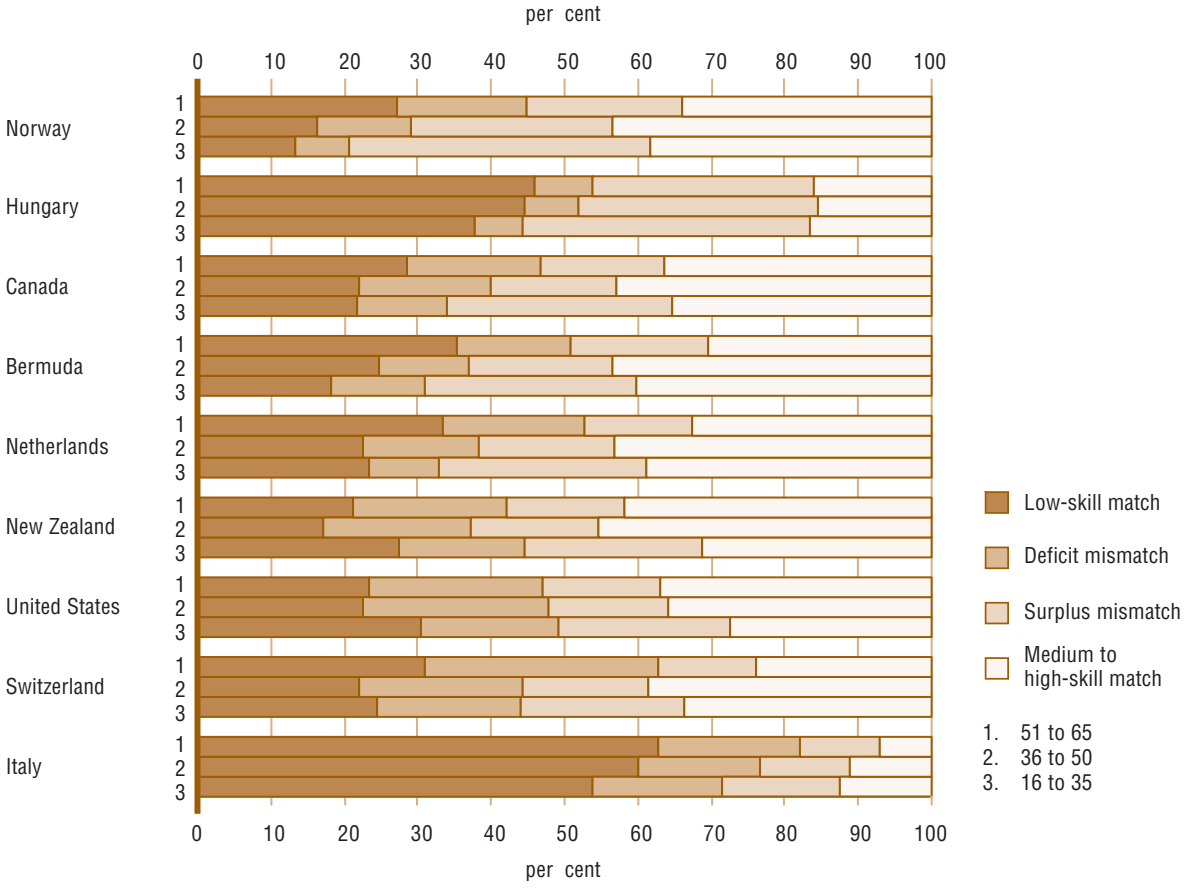
Consistent with age-skill distributions, Figure 7.3 presents data suggesting that skill surpluses are generally higher among younger age cohorts. For example, around 40 per cent of all youth and young adults who are in the labour market in Hungary and Norway are in a skill surplus situation. The estimate is also comparatively high in Bermuda, Canada and the Netherlands, where there are about 30 per cent of youth and young adults in a skill surplus situation. This might be so because there are typically more youth and young adults in temporary or entry level jobs for which skill requirements are not necessarily commensurate with their area of study or level of literacy skill. The degree of matches should naturally increase with age as workers find their way into jobs that have a better fit with their level of skill. But notable levels of skill surpluses remain among

older age cohorts. Hungary, for example, has the highest levels of skill surplus. It also has the lowest levels of skill deficit across all age groups. For the majority of countries, at least 15 per cent of older cohorts are in a surplus situation. Only Italy and Switzerland feature comparatively low levels of surplus among older age groups, namely 11 and 13 per cent, respectively. Along with Switzerland, the United States and New Zealand feature among the highest levels of skill deficit among older age cohorts.

Figure 7.3

Skill mismatch by age group

The distribution of skill mismatch, by age group and by country, 2003 and 2008



Countries are ranked by the per cent of youths and young adults aged 16 to 35 who are in a surplus mismatch situation in the workplace.

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Immigration

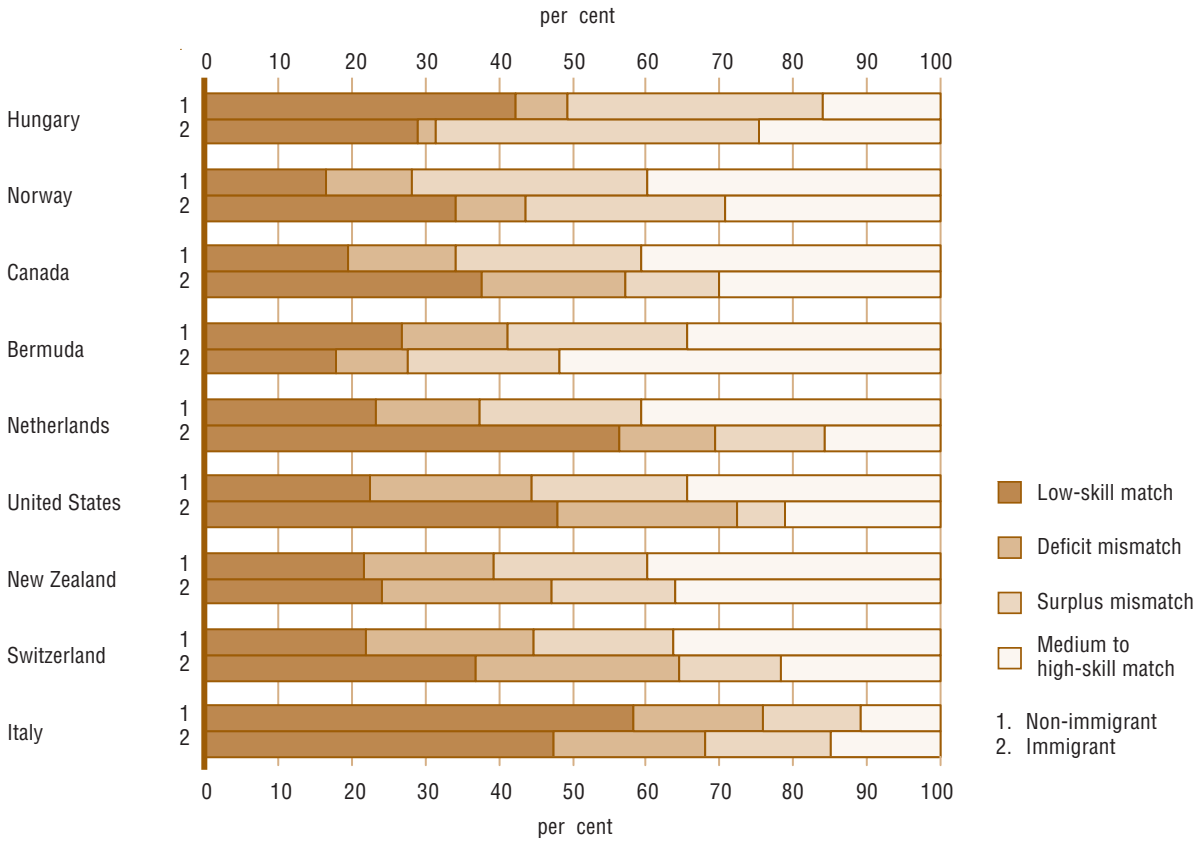
The difference between the proportion of immigrants and non-immigrants who are seen to be in a surplus situation in the labour market can be substantial. The data in Figure 7.4 indicate that this is especially the case in Canada and the United States, where there are about 12 and 14 per cent more non-immigrants than immigrants who are in a skill surplus situation. While the reverse is observed

in Italy and Hungary, there are about 4 to 7 per cent more non-immigrants than immigrants in a skill surplus situation in the remaining countries. This is not surprising since many immigrants must adapt to and develop the local language which can be crucial for demonstrating literacy skills in the host country's language. Indeed, in countries with high immigration rates, like Canada, New Zealand, Switzerland and the United States, immigrants are found to be more likely to be in a literacy deficit situation than in a literacy surplus situation.

Figure 7.4

Skill mismatch by immigration status

The distribution of skill mismatch, by immigration status and by country, 2003 and 2008



Countries are ranked by the per cent of immigrants in a surplus mismatch situation in the workplace.

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Occupation

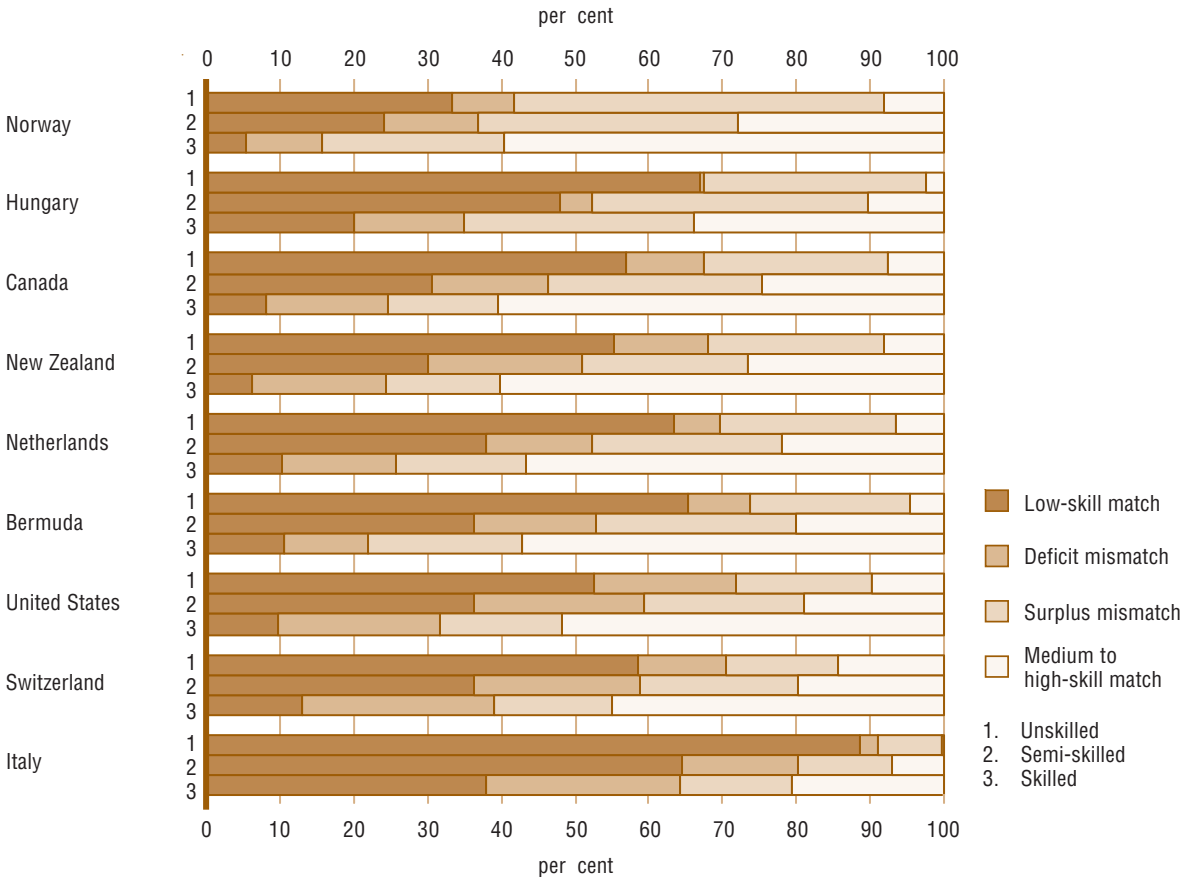
Deficits and surpluses are apparent in every country but differences by type of occupation can be sharp. As can be seen from Figure 7.5, the tendency among unskilled occupations is for the proportion of surpluses to outnumber the proportion of deficits. Only in the United States are there as many unskilled workers who are in surplus situation as there are in a deficit situation. Hungary and Norway feature the highest proportion of workers who are in a surplus situation, particularly among the unskilled. In contrast, Italy, Switzerland and

the United States feature high deficits in their skilled sectors, with 26, 26 and 22 per cent, respectively of their workers who are in skilled jobs, but score below Level 3 on the prose literacy scale. Deficits in the skilled sector are lowest in Bermuda (11%), Canada (16%), Hungary (15%), the Netherlands (16%) and Norway (10%). Among semi-skilled occupations, deficits are highest in Switzerland (23%), the United States (23%), and New Zealand (21%); and lowest in Hungary (5%), Norway (13%) and the Netherlands (14%).

Figure 7.5

Skill mismatch by occupation

The distribution of skill mismatch, by occupation and by country, 2003 and 2008



Countries are ranked by the per cent of unskilled occupations with adults in a surplus mismatch situation in the workplace.

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

7.6 Participation in adult learning and skill mismatch

What is the impact of skill match-mismatch on participation in adult education and training? Previous research suggests that not everyone has equal chances to participate in adult education and training and that this can depend partly on job characteristics (OECD and Statistics Canada, 2000; Tuijnman and Boudard, 2001). Figure 7.6 offers a first glance at how participation rates in adult education and training vary with whether workers are in a skill match or mismatch situation.

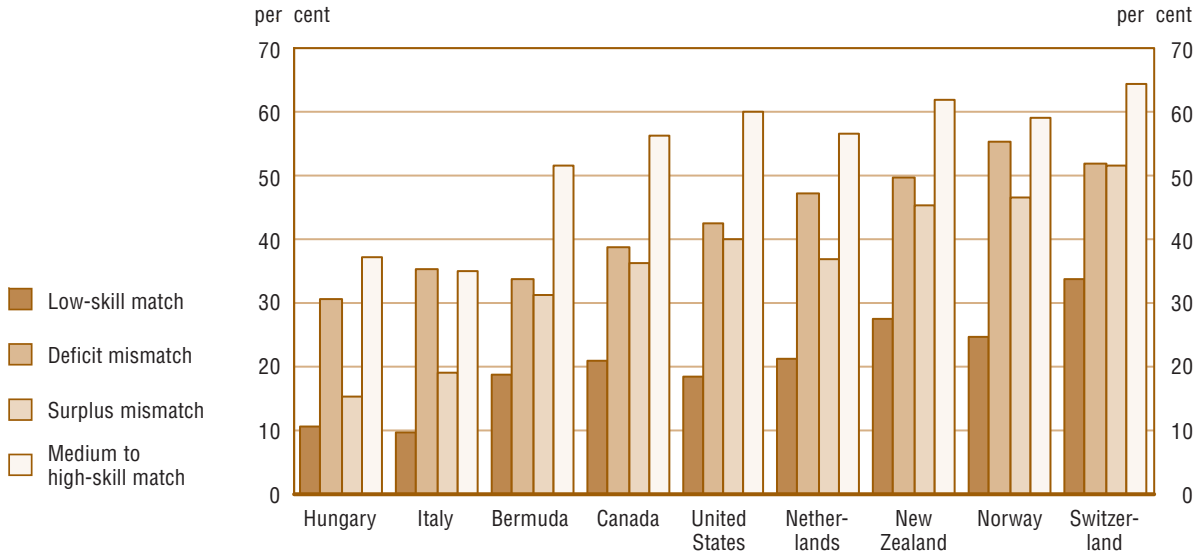
The pattern is more or less consistent. Workers in high-skill matches tend to participate more in adult education on average than any other workers. Countries with the highest participation rates among the medium to high skill match group are Switzerland (64%), New Zealand (62%), the United States (60%), Norway (59%), the Netherlands (57%) and Canada (56%). Those with the lowest participation rates among the medium to high skill match group are Italy (35%) and Hungary (37%). Only in Italy do workers in a deficit situation participate nearly to the same extent as those in medium to high skill match situation (35%). Workers in a skill deficit situation feature the second highest rate of participation followed by those in a surplus situation. The lowest participation rates are among workers in a low skill match situation. Only 10 and 11 per cent of those in a low skill match situation in Italy and Hungary, respectively, participate in adult education. The rate of participation among the low skill match group can reach as high as 34 per cent in Switzerland.

Figure 7.6

Participation and skill mismatch

Per cent of adults aged 16 to 65 years (excluding full time students aged 16 to 24) participating in adult education and training during the 12 months preceding the interview, by match-mismatch categories and by country, 2003 and 2008

A. Participation in any course or programme



Countries are ordered according to their overall participation rate in education and training.

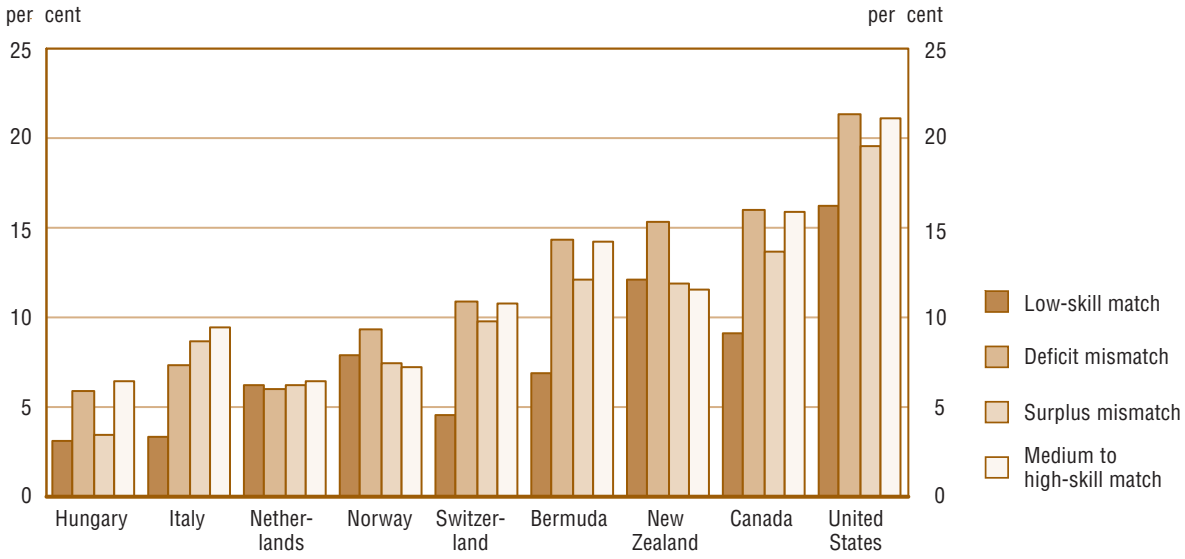
Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Figure 7.6 (concluded)

Participation and skill mismatch

Per cent of adults aged 16 to 65 years (excluding full time students aged 16 to 24) participating in adult education and training during the 12 months preceding the interview, by match-mismatch categories and by country, 2003 and 2008

B. Participation in other organized learning activities



Countries are ordered according to their overall participation rate in education and training.

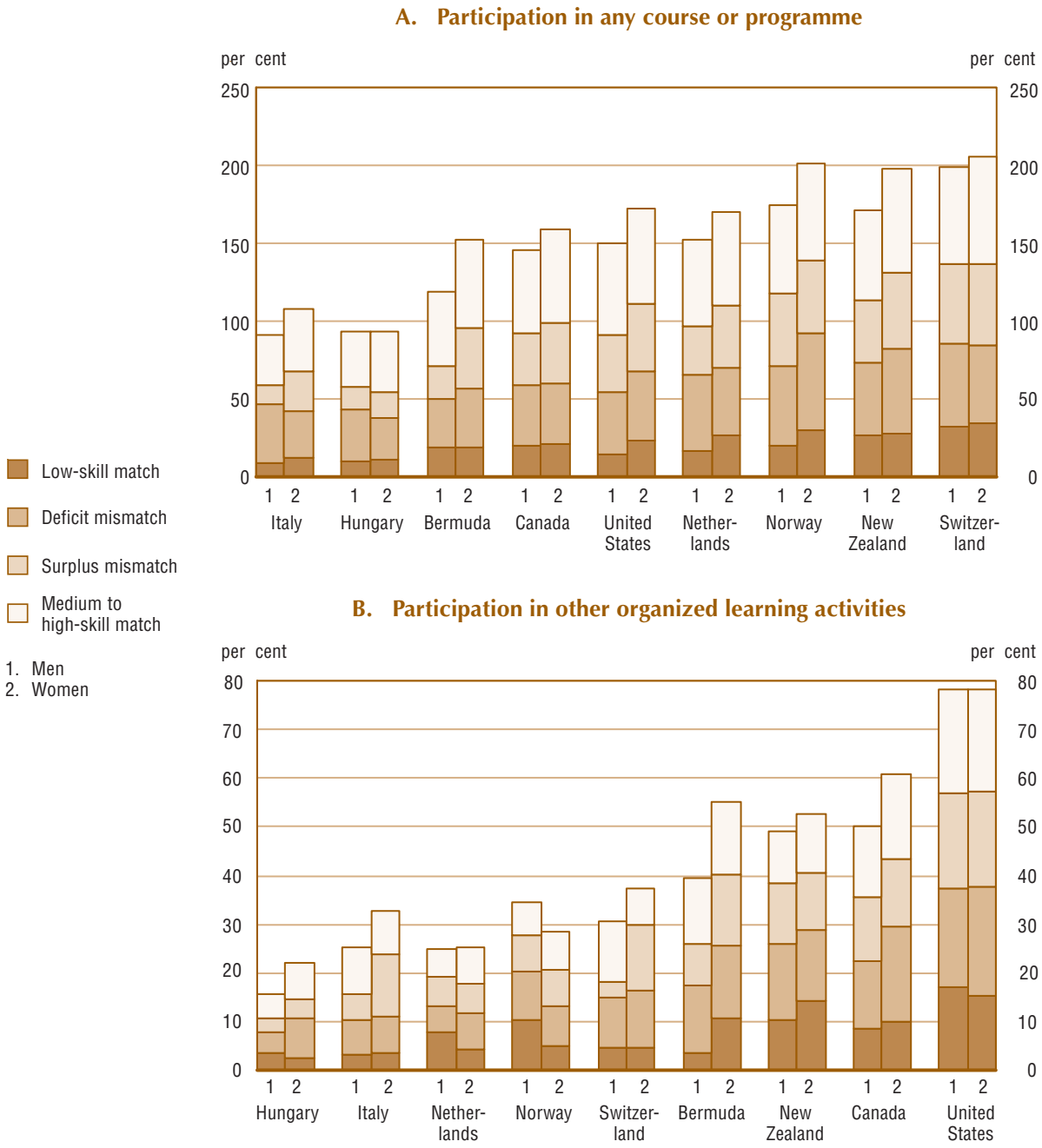
Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Gender differences in the participation rates are apparent in every group and country but this does not change the overall pattern. As can be seen from Figure 7.7, there are consistently more women than men in the medium to high skill group who participate in adult education and training, which is consistent with gender differences in the overall participation rate for employed men and women. The difference in the medium to high skill match group can reach as high as 9 to 10 per cent in Bermuda and New Zealand. The same pattern more or less holds for the surplus and low skill match group. While there are no gender differences in the participation rate among the low skill match group for Bermuda and Hungary, differences that are biased towards women can be as high as 9 to 10 per cent in the Netherlands, Norway and the United States, and can be as low as 1 to 3 per cent in Canada, Italy, New Zealand and Switzerland. Similarly, while there are no gender differences in participation rates among the surplus group for Norway and Switzerland, differences that are biased toward women can reach as high as 17 per cent in Bermuda and 13 per cent in Italy. Among the deficit group, men are found to participate more than women in Italy (8% difference), Hungary (6% difference), the Netherlands (5% difference) and Switzerland (4% difference). These latter results are consistent with prior findings which suggest that men more often than women receive employer support for taking up adult education and training (see OECD and Statistics Canada, 2005).

Figure 7.7

Gender, participation and skill mismatch

Per cent of adults aged 16 to 65 years (excluding full time students aged 16 to 24) participating in adult education and training during the 12 months preceding the interview, by gender, by match-mismatch categories, and by country, 2003 and 2008



Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Depending on the fit between the job and the worker, employers as well as the adults themselves may have varying propensities to invest in further education and training. Figures 7.8 and 7.9 present data that allow for a closer look at the sources of financing by skill match-mismatch. Three findings stand out.

First, and not surprisingly, employers display the highest propensity to invest in workers who are in medium to high skill matches. This is followed by those in deficit situations, surplus situations and low-skill matched situations. Although the magnitude of propensities varies by country, the overall patterns are rather consistent. The adjusted odds ratios presented in Figure 7.9 support this conclusion. The adjusted results reveal, however, that in Italy and Norway, workers in deficit situations benefit the most from employer financing for further education and training.

Second, self financing is concentrated among workers who are in a surplus or medium to high skill match situation. Adjusted odds ratios confirm that workers in medium to high skill matches display the highest propensity to finance their own investment in adult education and training, followed by those in surplus situations, deficit situations and low-skill matched situations, respectively. This finding is consistent with prior research which suggests that private sources of investment in adult education tend to be concentrated among those who already have comparatively high levels of skill.

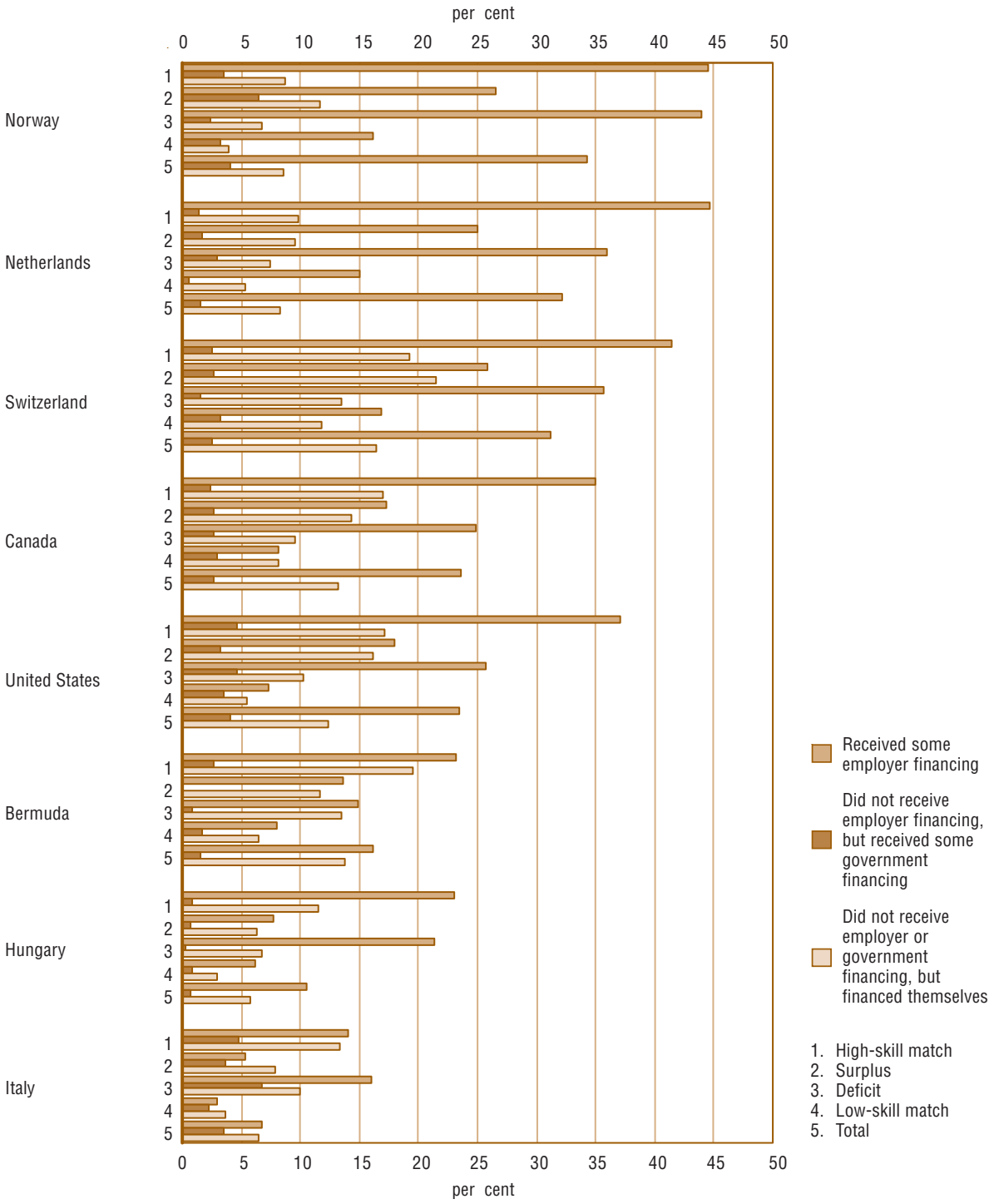
Employers have also been found to direct investment in training to those who are either already skilled, or more educated, and hence often deemed by the employer to be more trainable or efficient trainees (see for example, OECD and Statistics Canada, 2005). The data presented in Figure 7.9, however, suggest that the pattern is more complex. While the combined level of employer support directed to workers in a medium to high skill match and surplus situation exceed the employer support given to the deficit group, the latter in fact tends to attract more employer support than the surplus group. This makes sense since employers stand to benefit from productivity gains by directing support to those who need it most, namely workers in the deficit group.

Third, results presented in Figures 7.8 and 7.9 suggest that government financing appears to reach at least as much those in medium to high skill matched situations as well as those in surplus situations. This is consistent with findings that reliance on market based approaches and performance criteria used to allocate funding for targeted strategies may end up benefiting those who already have the most skills because they are most likely to succeed (Rubenson and Desjardins, 2009).

Figure 7.8

Participation, source of financing and skill mismatch

Per cent of adults aged 16 to 65 years (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by source of financing,by match-mismatch categories, and by country, 2003 and 2008

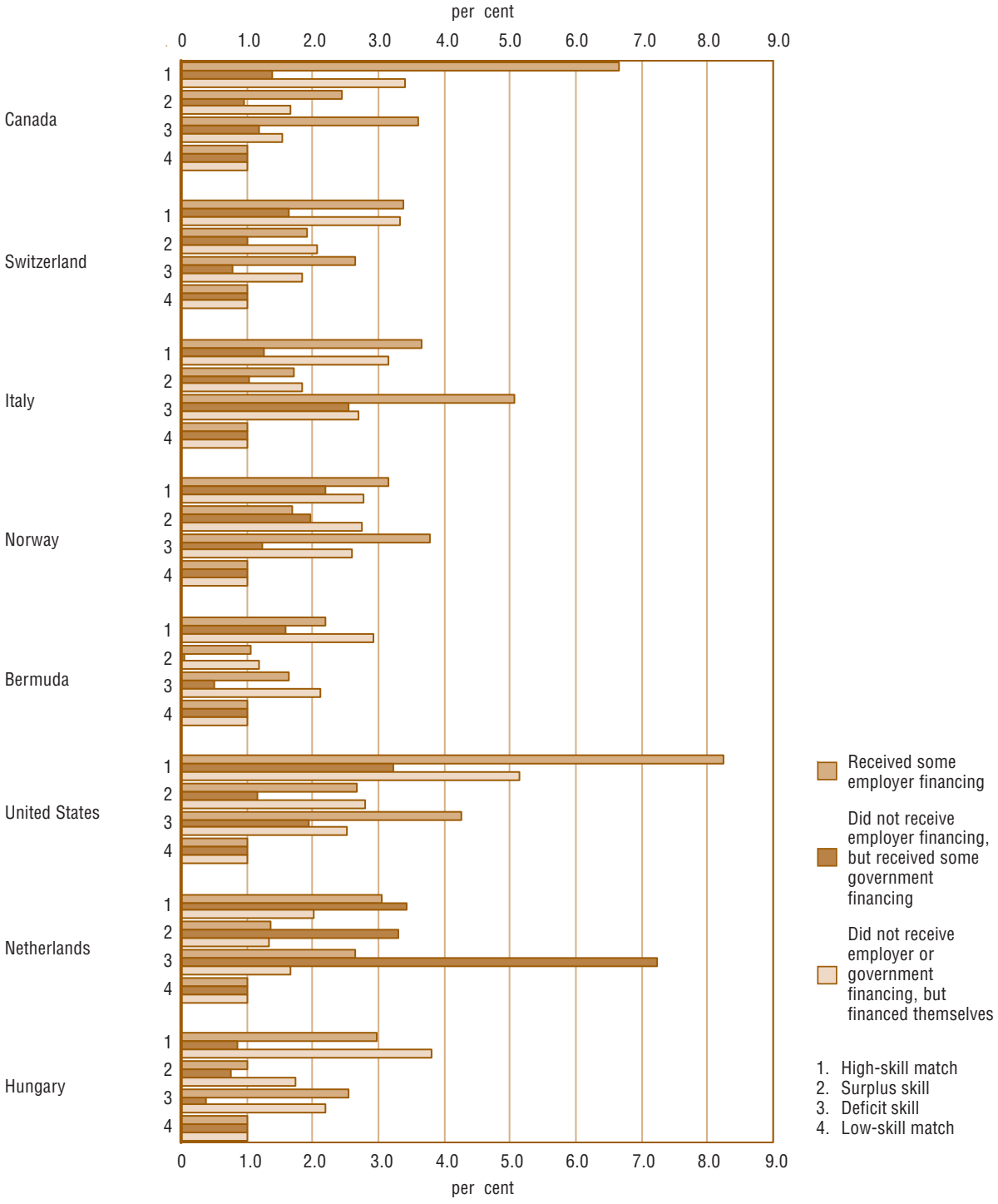


Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Figure 7.9

Effect of match-mismatch on participation in adult education

Adjusted odds ratios of adults aged 16 to 65 years (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by match-mismatch, by type of financing, and by country, 2003 and 2008



Note: Adjusted for age, sex, education, occupational type, and firm size.
Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

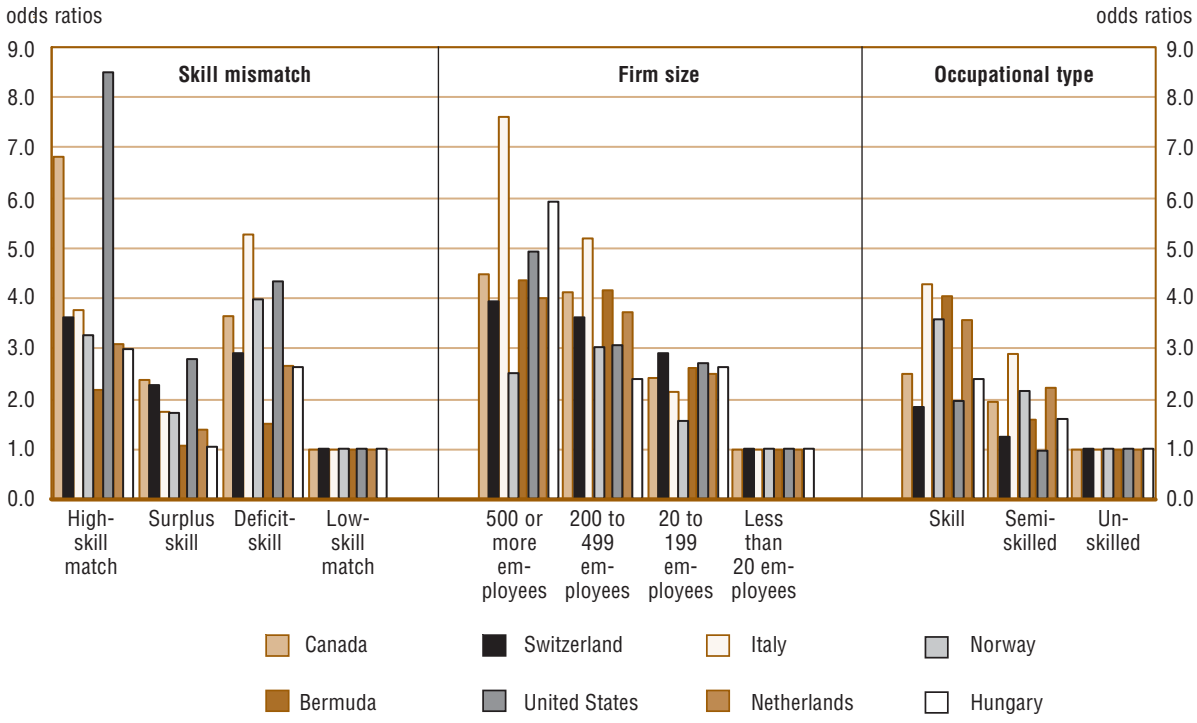
Results of a more detailed data analysis that examined the determinants of receiving employer support for participating in adult education and training are presented in Figure 7.10.1. Being in a medium to high skill match or deficit situation ranks among the strongest determinants of receiving employer financed adult education. The effect associated with the former category is very strong in Canada and the United States. It is important to note that both these categories (medium to high skill match and deficit) reflect medium to high engagement in reading practices at work, which are characteristics attached to the nature of the job. Other important determinants known from previous research are typically firm size, initial educational attainment and age, all of which are shown to also have an important relationship with participation in Figure 7.10.2. In Italy, working in a large firm is the most important determinant of receiving employer financed adult education.

Together these findings support the notion that employer support for adult education is a function of favourable job characteristics (i.e., high skill job tasks, large firm) first and foremost, but that individuals with favourable individual characteristics (i.e., highly skilled) combined with favourable job characteristics (i.e., high demand for skill) benefit the most. But this is not necessarily the case in all countries. Employers in Italy and Norway seem to target skill deficiency comparatively more.

Figure 7.10.1

Determinants of participation in employer financed adult learning

Adjusted odds ratios showing the likelihood of adults aged 16 to 65 (excluding full time students aged 16 to 24) receiving employer financed adult education and training during the 12 months preceding the interview, by various determinants, and by country, 2003 and 2008

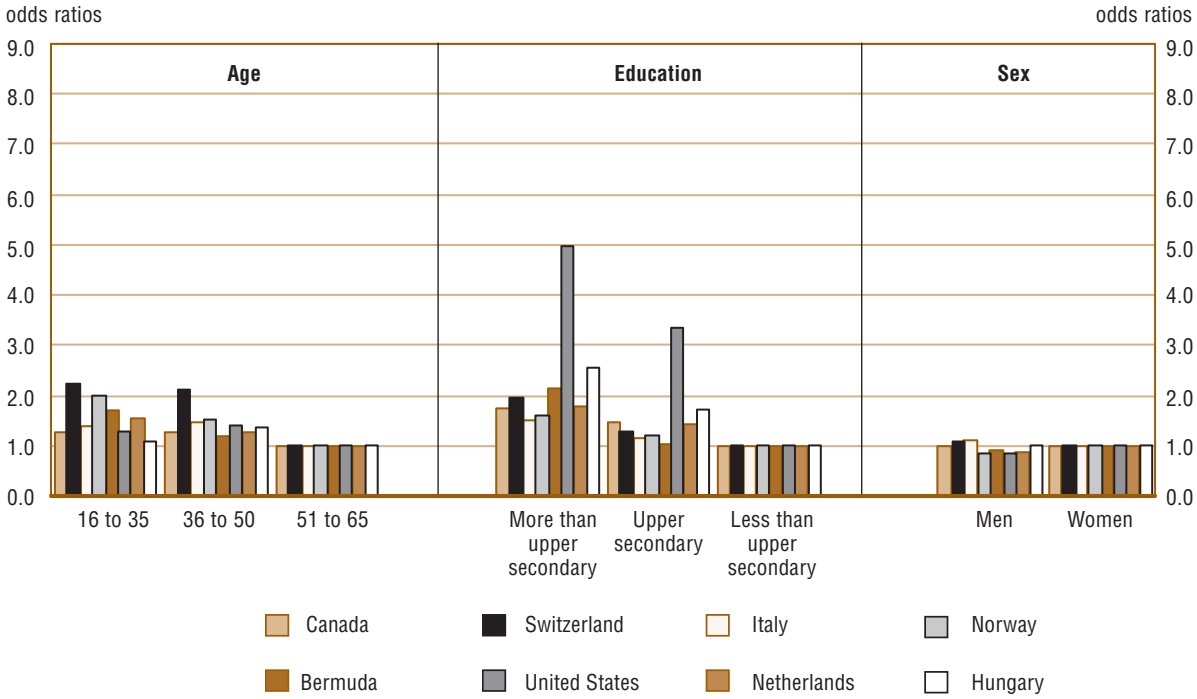


Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Figure 7.10.2

Determinants of participation in employer financed adult learning

Adjusted odds ratios showing the likelihood of adults aged 16 to 65 (excluding full time students aged 16 to 24) receiving employer financed adult education and training during the 12 months preceding the interview, by various determinants, and by country, 2003 and 2008



Note: Adjusted for age, sex, education, occupational type, and firm size.
Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Conclusion

Literacy skills are not only a function of initial schooling but also reflect a wide range of other factors including, not least, work practices such as engagement in literacy related tasks (see Desjardins, 2004). Much attention has been focused on skills deficits in recent years but skill surpluses can also be substantial. A lack of skill use in the workplace can be detrimental to the development and maintenance of individual and national skill profiles. Thus the demand for, and use of, skills should not be taken for granted. In general, much less thought has been given to how a lack in demand for skill in the labour market restricts large population groups from engaging in value added production and the further development of skills through flexible adult learning.

Skill mismatch in the labour market is in the order of about 30 to 40 per cent. This is based on a methodology that categorises workers into four groups (high-skill match, low skill match, surplus mismatches, and deficit mismatches). Deficit and surplus mismatch range from 10 to 30 per cent, depending on the country. High rates of mismatch suggest a need for adjustment; in particular, the need for an increased effort to train or retrain persons in deficit situations. Likewise, while high levels of surplus are good for growing knowledge economies, a lack of use in the workplace may lead to skill loss.

Skill surpluses tend to be concentrated among younger age cohorts as well as women and non-immigrants. The former is linked to entry level positions and temporary, often low skill jobs that many youth and students take up early in their life careers. Women however, are a traditionally disadvantaged group more generally, but not least in labour markets, which may point to more systematic under-utilisation of skills based on other allocation mechanisms operating in the labour market.

Finally, skill match-mismatch is found to have a strong link to the incidence of participation in adult education and training as well as to the sources of financing that support such participation. More generally, private sources of financing tend to be directed toward groups that already have high levels of skills, namely the high-skill match and surplus groups. But findings presented in this chapter indicate that employers in fact direct their financial support to workers in a deficit situation more often than those in a surplus situation. In most countries, public sources of financing are found to be reaching those who already have high levels of skills more than those who need it most, namely the low-skilled.

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Annex 7

Data Values for the Figures

Table 7.1

The distribution of skill mismatch, by country, 2003 and 2008

	Demand		Supply							
	Characteristics of jobs		Characteristics of workers		Market outcome		Match	Mismatches		Match
	Low skill jobs	Medium to high-skill jobs	Low skill workers	Medium to high-skill workers	Matches	Mis-matches	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match
	per cent				per cent					
Canada	46	54	39	61	62	38	23	16	23	38
Switzerland	43	57	49	51	58	42	25	24	18	33
Italy	72	28	76	24	69	31	58	18	13	11
Norway	49	51	29	71	57	43	18	12	32	39
Bermuda	47	53	37	63	64	36	24	13	23	40
United States	45	55	48	52	59	41	26	22	19	33
New Zealand	42	58	41	59	61	39	22	19	20	39
Netherlands	47	53	39	61	64	36	25	14	21	39
Hungary	77	23	49	51	58	42	42	7	35	16

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.2

The distribution of skill mismatch, by gender and by country, 2003 and 2008

	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match
	per cent			
Canada				
Men	24	18	19	38
Women	22	13	27	38
Switzerland				
Men	21	27	12	40
Women	30	20	25	26
Italy				
Men	59	18	12	11
Women	57	16	16	11
Norway				
Men	19	13	26	42
Women	16	10	38	36
Bermuda				
Men	25	16	20	40
Women	24	10	27	40
United States				
Men	26	24	16	34
Women	26	20	23	31
New Zealand				
Men	23	21	16	40
Women	22	17	23	38
Netherlands				
Men	25	17	16	43
Women	26	11	28	35
Hungary				
Men	47	8	31	15
Women	37	6	39	18

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.3

The distribution of skill mismatch, by age group and by country, 2003 and 2008

	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match
	per cent			
Canada				
16 to 35	22	12	31	35
36 to 50	22	18	17	43
51 to 65	29	18	17	36
Switzerland				
16 to 35	24	20	22	34
36 to 50	22	23	17	39
51 to 65	31	32	13	24
Italy				
16 to 35	54	18	16	13
36 to 50	60	17	12	11
51 to 65	63	19	11	7
Norway				
16 to 35	13	7	41	38
36 to 50	16	13	27	44
51 to 65	27	18	21	34
Bermuda				
16 to 35	18	13	29	40
36 to 50	25	12	20	43
51 to 65	35	15	19	31
United States				
16 to 35	30	19	23	27
36 to 50	23	25	16	36
51 to 65	23	24	16	37
New Zealand				
16 to 35	27	17	24	31
36 to 50	17	20	17	45
51 to 65	21	21	16	42
Netherlands				
16 to 35	23	10	28	39
36 to 50	23	16	19	43
51 to 65	33	19	15	33
Hungary				
16 to 35	38	6	39	17
36 to 50	45	7	33	16
51 to 65	46	8	30	16

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.4

The distribution of skill mismatch, by immigration status and by country, 2003 and 2008

	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match
	per cent			
Canada				
Immigrant	38	20	13	30
Non-immigrant	20	15	25	41
Switzerland				
Immigrant	37	28	14	22
Non-immigrant	22	23	19	36
Italy				
Immigrant	47	21	17	15
Non-immigrant	58	18	13	11
Norway				
Immigrant	34	10	27	29
Non-immigrant	16	12	32	40
Bermuda				
Immigrant	18	10	21	52
Non-immigrant	27	14	24	35
United States				
Immigrant	48	24	7	21
Non-immigrant	23	22	21	34
New Zealand				
Immigrant	24	23	17	36
Non-immigrant	22	18	21	40
Netherlands				
Immigrant	56	13	15	16
Non-immigrant	23	14	22	41
Hungary				
Immigrant	29	2	44	25
Non-immigrant	42	7	35	16

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.5

The distribution of skill mismatch, by occupation and by country, 2003 and 2008

	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match
	per cent			
Canada				
Skilled	8	16	15	60
Semi-skilled	31	16	29	25
Unskilled	57	10	25	8
Switzerland				
Skilled	13	26	16	45
Semi-skilled	36	23	21	20
Unskilled	58	12	15	14
Italy				
Skilled	38	26	15	21
Semi-skilled	65	16	13	7
Unskilled	88	3	9	0
Norway				
Skilled	5	10	25	60
Semi-skilled	24	13	35	28
Unskilled	33	8	50	8
Bermuda				
Skilled	11	11	21	57
Semi-skilled	36	16	27	20
Unskilled	65	8	22	5
United States				
Skilled	10	22	17	52
Semi-skilled	36	23	22	19
Unskilled	53	19	19	10
New Zealand				
Skilled	6	18	15	60
Semi-skilled	30	21	22	27
Unskilled	55	13	24	8
Netherlands				
Skilled	10	16	18	57
Semi-skilled	38	14	26	22
Unskilled	63	6	24	7
Hungary				
Skilled	20	15	31	34
Semi-skilled	48	5	37	10
Unskilled	67	0	30	3

0 true zero or a value rounded to zero

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.6

Per cent of adults aged 16 to 65 (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by match-mismatch categories, by country, 2003 and 2008

	A. Participation in any course or programme					B. Participation in other organized learning activities				
	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match	Total	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match	Total
	per cent					per cent				
Canada	21	39	36	56	41	9	16	14	16	14
Switzerland	34	52	52	64	**52**	5	11	10	11	**9**
Italy	10	35	19	35	**18**	3	7	9	9	**5**
Norway	25	55	47	59	**49**	8	9	8	7	**8**
Bermuda	19	34	31	52	**37**	7	14	12	14	**12**
United States	19	43	40	60	**42**	16	21	20	21	**20**
New Zealand	27	50	45	62	**49**	12	15	12	12	**13**
Netherlands	21	47	37	57	**43**	6	6	6	6	**6**
Hungary	11	31	15	37	**18**	3	6	3	7	**4**

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.7

Per cent of adults aged 16 to 65 (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by gender, by match-mismatch categories, by country, 2003 and 2008

	A. Participation in any course or programme					B. Participation in other organized learning activities				
	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match	Total	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match	Total
	per cent					per cent				
Canada										
Men	20	39	33	54	**40**	9	14	13	15	**13**
Women	22	39	39	59	**43**	10	20	14	17	**15**
Switzerland										
Men	32	53	52	62	**52**	5	11	3	13	**9**
Women	35	50	52	69	**51**	5	12	14	8	**9**
Italy										
Men	8	38	13	32	**17**	3	7	5	10	**5**
Women	12	30	26	40	**20**	4	8	13	9	**6**
Norway										
Men	20	51	46	58	**47**	10	10	8	7	**8**
Women	31	62	47	61	**51**	5	8	7	8	**7**
Bermuda										
Men	19	31	22	47	**33**	4	14	9	14	**10**
Women	19	38	39	57	**41**	11	15	15	15	**14**
United States										
Men	14	40	37	59	**40**	17	21	19	21	**20**
Women	23	45	43	62	**44**	15	22	20	21	**19**
New Zealand										
Men	27	46	40	58	**46**	10	16	13	11	**12**
Women	28	54	49	66	**52**	14	14	11	13	**13**
Netherlands										
Men	17	49	31	55	**41**	8	5	6	6	**6**
Women	26	44	40	59	**44**	4	7	6	7	**6**
Hungary										
Men	10	33	14	36	**17**	3	4	3	5	**4**
Women	11	27	16	39	**19**	3	8	4	8	**4**

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.8

Per cent of adults aged 16 to 65 years (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by source of financing, by match-mismatch categories, and by country, 2003 and 2008

	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match	Overall
			per cent		
A. Multiple sources of financing					
Canada					
Employer financed	8	25	17	35	24
Government financed	3	3	3	3	3
Self financed	9	11	17	21	16
Other financing	2	2	3	3	2
Switzerland					
Employer financed	17	36	26	41	31
Government financed	4	5	4	3	4
Self financed	15	22	30	30	24
Other financing	3	4	2	3	3
Italy					
Employer financed	3	16	5	14	7
Government financed	2	7	4	5	4
Self financed	4	10	8	16	7
Other financing	1	3	3	4	2
Norway					
Employer financed	16	44	27	44	34
Government financed	4	3	8	5	5
Self financed	6	9	15	13	12
Other financing	2	3	3	4	3
Bermuda					
Employer financed	8	14	13	21	15
Government financed	2	1	2	3	2
Self financed	7	14	13	21	15
Other financing	1	2	3	3	2
United States					
Employer financed	7	26	18	37	24
Government financed	4	6	4	6	5
Self financed	6	12	20	23	16
Other financing	2	2	4	2	2
Netherlands					
Employer financed	15	36	25	45	32
Government financed	1	3	2	2	2
Self financed	6	9	11	12	10
Other financing	1	1	1	1	1
Hungary					
Employer financed	6	21	8	23	11
Government financed	1	1	1	1	1
Self financed	3	11	8	15	7
Other financing	1	3	1	2	1

Table 7.8 (continued)

Per cent of adults aged 16 to 65 years (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by source of financing, by match-mismatch categories, and by country, 2003 and 2008

	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match	Overall
	per cent				
B. Mutually exclusive source of financing by priority: employer, government, self, other					
Canada					
Received some employer financing	8	25	17	35	24
Did not receive employer financing, but received some government financing	3	3	3	2	3
Did not receive employer or government financing, but financed themselves	8	10	14	17	13
Did not receive employer or government financing, nor self financing, but other source	2	2	2	2	2
Switzerland					
Received some employer financing	17	36	26	41	31
Did not receive employer financing, but received some government financing	3	2	3	3	3
Did not receive employer or government financing, but financed themselves	12	14	22	19	16
Did not receive employer or government financing, nor self financing, but other source	2	1	2	1	1
Italy					
Received some employer financing	3	16	5	14	7
Did not receive employer financing, but received some government financing	2	7	4	5	4
Did not receive employer or government financing, but financed themselves	4	10	8	13	6
Did not receive employer or government financing, nor self financing, but other source	1	3	2	3	1
Norway					
Received some employer financing	16	44	27	45	34
Did not receive employer financing, but received some government financing	3	2	6	4	4
Did not receive employer or government financing, but financed themselves	4	7	12	9	9
Did not receive employer or government financing, nor self financing, but other source	1	2	2	2	2
Bermuda					
Received some employer financing	8	15	14	23	16
Did not receive employer financing, but received some government financing	2	1	0	3	2
Did not receive employer or government financing, but financed themselves	7	14	12	20	14
Did not receive employer or government financing, nor self financing, but other source	0	2	2	2	1

Table 7.8 (concluded)

Per cent of adults aged 16 to 65 years (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by source of financing, by match-mismatch categories, and by country, 2003 and 2008

	Low-skill match	Deficit mismatch	Surplus mismatch	Medium to high-skill match	Overall
			per cent		
United States					
Received some employer financing	7	26	18	37	24
Did not receive employer financing, but received some government financing	4	5	3	5	4
Did not receive employer or government financing, but financed themselves	6	10	16	17	12
Did not receive employer or government financing, nor self financing, but other source	2	2	3	1	2
Netherlands					
Received some employer financing	15	36	25	45	32
Did not receive employer financing, but received some government financing	1	3	2	1	2
Did not receive employer or government financing, but financed themselves	5	8	10	10	8
Did not receive employer or government financing, nor self financing, but other source	1	1	1	1	1
Hungary					
Received some employer financing	6	21	8	23	11
Did not receive employer financing, but received some government financing	1	0	1	1	1
Did not receive employer or government financing, but financed themselves	3	7	6	12	6
Did not receive employer or government financing, nor self financing, but other source	0	2	1	2	1

0 true zero or a value rounded to zero

Notes: No data were collected on financing sources for participation in "other" adult education and training.
New Zealand did not collect and record data on financing sources in a consistent and reliable way.

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.

Table 7.9

Adjusted odds ratios of adults aged 16 to 65 years (excluding full time students aged 16 to 24) receiving adult education and training during the 12 months preceding the interview, by match-mismatch, by type of financing, and by country, 2003 and 2008

	Received some employer financing	Did not receive employer financing, but received some government financing	Did not receive employer or government financing, but financed themselves
		per cent	
Canada			
High-skill match	6.7***	1.4**	3.4***
Surplus skill	2.4***	0.9	1.7***
Deficit skill	3.6***	1.2	1.5***
Low-skill match	1.0	1.0	1.0
Switzerland			
High-skill match	3.4***	1.6	3.3***
Surplus skill	1.9***	1.0	2.1***
Deficit skill	2.7***	0.8	1.8***
Low-skill match	1.0	1.0	1.0
Italy			
High-skill match	3.7***	1.3	3.1***
Surplus skill	1.7**	1.0	1.8***
Deficit skill	5.1***	2.6***	2.7***
Low-skill match	1.0	1.0	1.0
Norway			
High-skill match	3.2***	2.2***	2.8***
Surplus skill	1.7***	2.0**	2.7***
Deficit skill	3.8***	1.2	2.6***
Low-skill match	1.0	1.0	1.0
Bermuda			
High-skill match	2.2***	1.6	2.9***
Surplus skill	1.1	0.1**	1.2
Deficit skill	1.6 *	0.5	2.1***
Low-skill match	1.0	1.0	1.0
United States			
High-skill match	8.2***	3.2***	5.1***
Surplus skill	2.7***	1.2	2.8***
Deficit skill	4.3***	1.9**	2.5***
Low-skill match	1.0	1.0	1.0
Netherlands			
High-skill match	3.0***	3.4**	2.0***
Surplus skill	1.4**	3.3**	1.3
Deficit skill	2.6***	7.2***	1.7**
Low-skill match	1.0	1.0	1.0
Hungary			
High-skill match	3.0***	0.9	3.8***
Surplus skill	1.0	0.8	1.8***
Deficit skill	2.6***	0.4	2.2**
Low-skill match	1.0	1.0	1.0

* p<0.10, statistically significant at the 10 per cent level
** p<0.05, statistically significant at the 5 per cent level
*** p<0.01, statistically significant at the 1 per cent level

Source: Adult Literacy and Life Skills Survey, 2003 and 2008.