Participation in Employer-sponsored Training in Canada's Regions

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Abstract

This paper uses data from the 2003 Canadian Adult Education and Training Survey to investigate whether the effect of participation in employer-sponsored training in the form of work-related courses is the same, conditional on individual, job-related and firm characteristics, across six different regions of Canada. The distribution of each characteristic across regions is presented and differences in the incidence of employer-sponsored training across regions are discussed. Probit models are used to estimate the effect of a number of characteristics on participation in employer-sponsored training. The findings indicate that regional differences in decisions to take employer-sponsored training (by employees) and to support work-related training (by employers) are not only affected by regional differences in individual, firm and work-related characteristics, but also by regional differences in the impact of each characteristic.

I. Introduction

In a modern economy, human capital investment becomes an effective resource to enhance the earnings of individuals, promote the productivity of firms and even to increase the competitiveness of a country. Meanwhile, the rapidly changing economy requires employees themselves to update their work skills and performance to keep pace with this change, much of which involves new technology. In addition to attracting qualified and skilled new employees, firms also provide job-related training to employees who are already in the workplace. This further study or training is labeled "adult education and training" (AET), which is related to the adult's current job or personal interests in Canada. According to a report on adult education and training conducted by Statistics Canada (2001), individuals took job-related studies or training achieve higher levels of performance in their work no matter who is the provider of the training.

Canada's investment in initial (pre-employment) education is among the highest in OECD countries, but participation in formal adult education and training is lower than in some other advanced countries (Baran, Berube, Roy, and Salmon, 2000). There are many factors influencing the decisions of employees to engage in and employers to provide work-related training. In terms of learning, the participation rate in job-related training differs among provinces in Canada.

In this paper, I will investigate regional differences in participation in job-related training (courses) that is sponsored by employers. Since individual, job-related and firm characteristics all have an impact on the incidence of employer-sponsored training, whether the same determinants will generate a similar effect in different regions is an

interesting topic for research. Several previous studies either studied the effect of different characteristics on participation in work-related training, or compared regional differences in determining the incidence of job-related training. However, none of them divided the whole sample into separate regions and studied regional differences or similarities in the effect on participation generated by various characteristics.

The remainder of this paper is organized as follows. Section II reviews previous studies on the impact of job-related training and participation in employer-sponsored training. Section III describes the data extracted from the 2003 Adult Education and Training survey (AETS) and also provides a descriptive analysis of the participation rate in employer-sponsored training (courses) in Canada's regions. Section IV presents the empirical analysis and discusses the findings. Section V concludes the study.

II. Background and Literature Review

Nowadays, human capital investment is an extremely important ingredient for firms to promote productivity. Life-long learning in the form of post-school human capital investment also becomes a crucial issue for individuals trying to maintain their competitive advantage in the labour market and avoid having their skills become obsolete. Individuals who have already left school accumulate knowledge, qualifications and skills either through learning by doing or through adult education and training, such as job-related training. In order to enhance productivity and workplace performance, firms may provide training to employees. A number of previous studies have examined the impact of and participation in employer-sponsored training.

Job-related training programs usually encourage workers to obtain general or specific skills. The difference between general and specific skills is that specific skills are only useful for the current employer, but general skills can be applied widely (Becker 1964). However, because of the existence of asymmetric information in the labour market, the turn over might be increased after employees obtaining general skills training. Thus most human capital theories argue that firms prefer investing in specific training to prevent the return to the investment from being shared with potential competitors. The decisions to take training (made by workers) and to sponsor training (made by firms) should take cost and return into account. To both individuals and firms, the benefits of additional job-related training should outweigh the costs. Participation in work-related training should lead to both higher wages for employees and higher productivity for firms (Hum and Simpson 2002). The positive impacts of employer-sponsored training will induce employers to invest in and employees to take up specific job-related training. Consequently, several characteristics would influence the kind of employer most likely to invest in training, as well as the type of employee most likely to receive training.

Some early studies confirm that there exists a positive relationship between employer-sponsored training and the level of workers' wages (Lynch, 1992; Lillard and Tan, 1992). To avoid measurement problems such as heterogeneity bias due to differences in the nature of the training offered by different firms that occurred in previous studies, Bartel (1995) utilizes a data set collected from the US personnel records of a large company and examines the impact of training on workers' wages and job performance. The results show that training is positively and significantly related to wages. In other

words, individuals will obtain higher wages if they received training in the company even when the selection bias in assignment to training is eliminated. Feinstein, Galindo-Rueda, and Vignoles (2004) find a large positive effect of work-related training on individuals' wages, but this effect is not significant for all workers. They estimate a first-difference model using data obtained from the British National Child Development Study (NCDS) between 1990 and 2000. According to their findings, workers who have higher levels of skills and previous education are more likely to get the opportunity for training and, in turn, obtain higher incomes.

In an imperfectly competitive labour market, employee wages might not be equal to the value of their marginal product. Accordingly, instead of estimating the impact of work-related training on productivity only in terms of employee wages, many studies consider the effect of training at both the individual and industry level. In investigating the US labour market, Lynch (1997) finds a positive effect of work-related training on wages and also on firm productivity, which, in turn, might affect wage equity and unemployment. Black and Lynch (1996) use an employer-based approach and the US Educational Quality of the Workforce National Employers' Survey. They find a positive impact of human capital investment on firm productivity. The interesting finding is that this impact is especially noticeable in the nonmanufacturing industry. Using panel data for British industries covering 1983 to 1996, and employing GMM estimation, Dearden, Reed and Reenen (2006) conclude that "a 1% point increase in training is associated with about a 0.6% increase in productivity and a 0.3% increase in hourly wages" (p. 400). This result suggests that the use of wages as the only determinant of productivity will ignore

the benefits of training captured by firms. Similarly, Almeida and Carneiro (2005) take both wages and the productivity of firms into account, and estimate the rate of return to firm investments in human capital using data from the Portuguese census of large manufacturing firms between 1995 and 1999. They demonstrate that for those firms which offer training, the returns are substantial, without considering how the returns are distributed between employees and firms.

Looking at the Canadian labour market, Hum and Simpson (1996) believe that employer-supported training can lead to higher returns that are shared about equally between firms and individuals. Using data from a series of Canadian Adult Education and Training Surveys, Gawley (2002) examines the relationship between training and Canadians' annual income during the 1990s. The results are interesting in that training participation shows a weakly positive effect on annual income; however, employer-sponsored courses (job-specific training) have a significant positive effect on annual income. He concludes that "this pattern would be expected considering that employer-sponsored courses provide individuals with the specific-skills and knowledge required of their occupational tasks, and consequently have more salient impacts for productivity and earnings" (p. 21). In addition, people who attend training have higher levels of average annual income than those who do not.

There are several factors which influence participation in work-related training, among which individual, firm and job-related characteristics are the most important. When estimating the relationship between participation and these characteristics, most authors use discrete choice models. Typically, they use logit or probit models. Binary

choice models in terms of logit and probit often yield similar results, so the choice between these two is probably due to practical reasons or researcher preferences. Admittedly, there are still differences between the logit and probit models. The logistic distribution has heavier tails than the normal distribution that underlies the probit model, and it is convenient to interpret the marginal effects in terms of odds ratios using logit regression. Gordon, Lin, Osberg and Phipps (1994) demonstrate that "probit and logit models generate different marginal effects as sample size increases" (p. 29). Authors have also used different data sources; most of the Canadian authors extract data from a series of Adult Education and Training Survey (AETS), while foreign authors use data which is analogous to the Canadian AETS.

Among the individual characteristics that have been found to influence participation in training, the previous education level is an important factor. Based on the British National Child Development Survey (NCDS), Blundell, Dearden, and Meghir (1996) find that firms are more likely to invest in more-educated people and those having previously received work-related training. In analyzing the status of Canadian adult education and training (AET), Baran, Berube, Roy, and Salmon (2000) conclude that well-educated people who have already acquired better learning abilities tend to have greater access to employer investment in human capital and thus generate higher returns. Moreover, Bishop (1994) points out that new hires with relevant previous work experience or who previously received formal employer-sponsored job training will require less training in the new company, or the costs of the training for them are lower. These new hires are more likely to be more productive, and are paid higher wages initially.

Age usually plays a significant role in participation in training. Young people begin work after they have obtained a degree or diploma, and they lack practical experience compared to their older colleagues. Thus, they have a greater need for training and may be more likely to seek additional training. At the same time, young people have a longer working life and innovation capability, which makes employers more willing to provide job-related training to them. A number of previous studies have demonstrated that age has a negative effect on participation in training, including Booth (1991) using the British Social Attitudes Survey, and Krueger and Rouse (1998) using a US population and company survey. More specifically, Livingstone (2001) concludes in his report based on the 1998 Canadian New Approaches to Lifelong Learning Survey (NALL) that young working people between their mid-twenties and mid-forties are more likely to be involved in different types of training (especially formal training) and courses to accumulate knowledge or skills. Employees beyond their mid-forties participate less in all types of training and courses.

Participation in training also differs between men and women. Barron, Black and Loewenstein (1993) and Green (1993) demonstrate that men are more likely to receive work training than women. In Canada, using the Adult Education and Training Survey, de Broucker (1997) and Hum and Simpson (2002) arrive at the same conclusion that men have a slightly higher probability of participating in training.

Family responsibilities are supposed to be a constraint for people considering attending or receiving training. After studying the Canadian labour force, Hui and Smith (2004) state that having a spouse, especially one who received higher education, will

reduce individuals' probability of participating in an employer-supported training activity, for both men and women. Furthermore, the presence of pre-school children yields a larger negative effect on taking training for women than for men. As children grow older, the negative effect will be mitigated. However, Xu and Lin (2007) indicate that family circumstances such as marital status and the presence of preschool children do not have a consistent impact on participation in training.

Common sense suggests that union members are more likely than non-union members to attend work-related training due to the union's bargaining power. Unionization thus cannot be ignored when studying training participation. Empirically, several studies have confirmed this positive relationship (Hui and Smith, 2004; Xu and Lin, 2007). Using the 1995 US Survey of Employer-Provided Training (SEPT95) and a probit model, Frazis, Gittleman and Joyce (2000) investigate the relationship between the incidence of formal job-related training and the characteristics of employers as well as employees. However, their results imply that nonunion workers have a higher probability of obtaining formal training than their counterparts at union establishments. In order to deal with the negative or insignificant union impact on education and training, Livingstone and Raykov (2005) critically revise sampling procedures by choosing a more representative sample and suitable indicators. They apply the Canadian Adult Education and Training Survey, Labour Force Survey (LFS), and New Approaches to Lifelong Learning Survey to re-test the relationship between union membership and training incidence. Their results demonstrate that unionized workers are more likely to participate in education and training and are more likely to be supported by their employers.

Firm size usually will have a positive effect on participation in training because of economies of scale in training provision and the stability due to good remuneration packages and promotion hierarchies that increase retention of trained staff. Therefore, there should be less training activity in small firms, and this prediction is supported by Kapsalis (1997) and Hum and Simpson (2002) using Canadian data. However, there still exist different findings. Based on a sample of employees who participated in government-subsidized on-the-job training, Gunderson (1974) reveals that "larger companies have an advantage in training primarily because they can internally place their trainees after training, not because they are more likely to have their trainees complete training" (p. 97). Since the US National Organizations Survey includes more information about respondents' employers, Jacobs, Lukens and Useem (1996) find that compared with job and employer attributes, individual characteristics are less powerful determinants of training. They also reveal that rather than firm size, internal firm structure, operation rules and adaptability to the changing market are critical factors affect employers' decision to provide training.

The type of work and the length of time spent at work are important factors which influence the provision of employer-supported training. Job tenure might be treated as an indicator of loyalty to the employer, and thus is also considered as a determinant. Turnover is negatively associated with the provision of training, but its effect is insignificant in employer-sponsored training (Frazis, Gittleman and Joyce, 2000). Hum and Simpson (2002) find that public-sector workers are more likely to participate in training than their private-sector counterparts. They also find that individuals who worked

in supervisory or professional positions have a higher probability of receiving training than others. However, job tenure has an insignificant effect on the incidence of training in their study. Likewise, Hurst (2008) also uses the Canadian AETS and demonstrates that longer tenure workers tend to have a higher probability of undergoing training than their shorter tenure counterparts. Employers are more likely to invest in full-time workers than part-time workers.

The investment in workers' training sponsored by employers becomes more interesting when taking regional differences into account. As argued by Gunderson (1998), a regional economy is used to being restricted by the location of raw resources and the cost of transportation, since firms are more concerned about the distance between the markets of their inputs and their product. When entering into the information era, however, the competition for human capital becomes more important. Since labour force costs include wages, regulatory costs and training expenses, firms take both the cost and productivity into account. Although there are high costs of living in urban areas, a larger number of skilled workers in the labour market is the most attractive factor for firms in making their location decisions. Thus it is possible that employers in metropolitan or urban regions will not sponsor job-related training, since there exist many potential qualified workers and the investment in human capital probably outweighs other costs.

In previous Canadian studies, some authors have examined regional differences in participation and investment in employer-sponsored training. Hui and Smith (2004) investigate the determinants of participation and the duration of public and private adult education and training in Canada using the 1998 AETS. They use a probit model to

analyze how participation is determined, and an important finding is the existence of large differences among provinces in the incidence of training. Surprisingly, the differences across provinces in the distribution of employee attributes and employer characteristics are not the causes. They also point out that unemployment rates and provincial adult training policies should be taken into account, but are not able to do so in their detailed analysis.

Using data extracted from the AETS (1991 to 2002) and the Workplace and Employee Survey (WES 1999 to 2001), Xu and Lin (2007) provide a trend analysis of participation in training and focus on examining the effects of worker attributes and firm characteristics jointly on participation in employer-sponsored training in Canada. The WES is a good complement to the AETS because it provides more details on employer characteristics, and thus the use of both the AETS and the WES makes it possible to investigate the effects of both individual and firm characteristics. They apply a logit model instead of a probit model to provide interpretations of the marginal effects of explanatory variables in terms of odds ratios. The results show that Atlantic Canada and Quebec exhibited lower training participation rates in earlier years. However, the substantial regional differences disappeared by 2002.

In the following part of this paper, I will concentrate my attention on Canadian regional differences in the incidence of participation in employer-supported training. Previous studies examining regional differences usually include dummy independent variables for each province, but do not allow the coefficients of other variables to differ across regions. Other characteristics such as individual or job-related attributes are

assumed to generate the same effects in each region. However, I attempt to investigate whether the same characteristics have different effects on participation in training across regions. In other words, coefficients can differ across regions.

III. Data and Descriptive Analysis

1. Data Source

The data used in this paper are obtained from publicly released microdata files of the 2003 Adult Education and Training Survey (AETS). The AETS is a series of national longitudinal surveys conducted by Statistics Canada. Their objective is to measure participation in adult education and training. As a supplement to the Labour Force Survey (LFS), the AETS not only contains information on respondents' personal, geographic and socio-economic characteristics, but also provides information on training types and the role of employers in supporting such training in the previous year. Therefore, the AETS is an appropriate instrument to study the incidence of training across regions.

The most recent version of the AETS was conducted in 2003. In this version, Statistics Canada made some improvements to the content of questionnaires and modified the definitions of some concepts, as compared to the previous versions of 1992, 1994 and 1998. In particular, job-related training was divided into formal and informal training, instead of only formal job-related training. Formal job-related training refers to courses or programs related to a worker's current or future job rather than his own interest or hobbies. By attending these planned courses and programs, people acquire some form of formal recognition after their completion. Informal job-related training is labeled as

"self-directed learning" in the 2003 AETS, and is conducted by individuals themselves -- for example by using the internet or asking for advice from relevant authorities to develop job-related skills or knowledge. Obviously, people cannot obtain formal certification from this type of training.[1] The term "employer-sponsored" is defined as whether the employer "paid for the tuition fee or provided other support like allowing a flexible work schedule or affording transportation for the courses / programs."[2]

For the econometric analysis in this paper, I extracted data from the 2003 AETS dataset using the data extraction tool ODESI.[3] In addition to labour force information and demographic characteristics, the AETS inquires about the reasons for taking training and the barriers to training faced by respondents, the number of courses / programs they are attending, as well as the effectiveness of the participation. However, the lack of detailed information regarding the employer's characteristics and the individual's income level makes it difficult to examine the impact of employer-sponsored training on both workers and employers. Accordingly, my focus in the present paper is on provincial differences in participation in employer-sponsored training instead of the effects of such training.

2. Sample and Variable Selection

The 2003 AETS includes a total of 25,056 respondents, while residents of Indian

[1] See the definition provided by Statistics Canada. http://www.statcan.gc.ca/pub/81-004-x/def/4068728-eng.htm and http://www.statcan.gc.ca/pub/81-004-x/def/4068729-eng.htm.
[2] See AETS (2003) Questionnaire CP_Q26 and CP_Q29 http://www.statcan.gc.ca/imdb-bmdi/instrument/3879_Q1_V2-eng.pdf
[3] ODESI: Ontario Data Documentation, Extraction Service and Infrastructure Initiative. This project is jointly funded by the Ontario Council of University Libraries (OCUL) and the BPS Supply Chain Secretariat, Ontario Ministry of Finance.

reserves, Nunavut, the Yukon and the Northwest Territories are excluded. This paper restricts the analysis to employed persons aged 25 to 64, who are neither self-employed nor full-time students. Individuals who are unemployed or not belonging to the labour force in the reference year (2002) are unlikely to have access to employer-sponsored training. Respondents who are self-employed may sponsor the training themselves, which could be identified as self-financed rather than employer-supported.

Unfortunately, it is difficult to accurately identify full-time students in the data file. In the survey, the variable LFEMT02 indicates the labour force status of respondents in 2002, and the variable LF_Q01B asks whether the respondents are employees in the same year. However, the variable PSCHOOLN indicates the *current* student status for respondents aged 15 to 64, not their student status in 2002. It is possible that respondents were full-time students during 2002 but not when they answered the questionnaire, which might result in some errors in the estimation. Nonetheless, this variable was used to exclude full-time students. As a result, there are 14,234 observations left in the sample after excluding observations with missing values for some of the explanatory variables.[4]

The AETS provides residential information in the form of province of residence and whether the individual lived in a metropolitan area. In Canada, there exist provincial differences in labour market organization, population composition and industry structure. In order to investigate regional differences in the rates of the participation in employer-sponsored training, the whole sample is divided into six regional subsets -- Atlantic Canada (Newfoundland and Labrador, Prince Edward Island, Nova Scotia and

[4] This sample size is comparable to that of Hurst (2008), whose sample consisted of 17,400 individuals. The smaller size of my sample can be explained by the fact that I exclude full-time students and include some additional explanatory variables in my model.

New Brunswick), Quebec, Ontario, the Prairies (Manitoba and Saskatchewan), Alberta and British Columbia -- instead of ten provinces, due both to the relatively small sample sizes for some provinces and to the socio-economic similarities among the Atlantic provinces and the Prairie provinces. The numbers of observations for each region are 2425, 2764, 4272, 2036, 1495 and 1242 respectively, and for some purposes each of the subsamples is further subdivided into men and women. The six regional variables are all dichotomous variables that equal 1 if the respondent is living in the region or province and 0 otherwise.

In order to investigate regional differences in the relationship between training incidence and various characteristics, I first define the dependent and independent variables. Although the 2003 AETS includes two forms of employer-sponsored job-related training -- programs and courses -- I am only concerned with participation in job-related courses and therefore use variable TECR, which asks respondents whether they took employer-sponsored courses, as the dependent variable. Job-related courses consist of courses, workshops, seminars or tutorials which are helpful for the current job, while job-related programs are related to formal schooling leading to diplomas or degrees.[5] Usually, the length of courses is shorter, and the arrangement is more flexible compared with programs. As argued by Hurst, "Course training was chosen because it is the larger contributor to the overall participation rate" (2008, p. 13). For the above-mentioned reasons, the key variable of interest, the rate of participation in employer-sponsored training, is derived from the information on employer-sponsored

[5] The 2003 AETS defined job-related courses as courses, workshops, seminars or training related to a current or future job.

job-related courses. The dummy dependent variable takes the value of 1 if the individual attended employer-sponsored courses and 0 otherwise.

Individual, family and job-related characteristics are treated as independent variables, including demographic variables such as age, birth in Canada, immigration status, marital status, education level, spouse's education level, household income level, presence of pre-school children and the numbers of individuals in the economic family, and labour force survey variables such as union membership, firm size, job tenure, industry and occupation.

Individuals aged 65 and older are frequently retired from work, and this category of individuals is excluded from my sample. Both native-born Canadians and landed immigrants or permanent residents of Canada are considered as Canadian residents in this paper. Unfortunately, 99% of the respondents in my sample are Canadian residents, and thus I can only consider differences between native-born and foreign-born Canadians in the participation in employer-sponsored courses, presumably due to their ability to mastering the official languages.

Education is by the level of formal schooling: the first group is Grade 8 or lower and Grade 9 or 10, the second group is Grade 11 to 13, the third group is some post secondary certificate or diploma and the fourth group is university degree or higher. I use the 2002 household income variable to measure respondents' income level. In order to make the number of observations in each income level relatively equivalent, I reclassified the household income levels into income less than $20,000, $20,000-40,000, $40,000-60,000, $60,000-80,000 and income over $80,000 -- five groups. With respect to children, the

2003 AETS only includes information on the presence of pre-school child aged 0 to 5, rather than the total number of children in the family.

For job tenure, I re-categorized the six groups into less than 1 year, 1-6 years, 6-10 years, 10-20 years and more than 20 years. The variable PFRMSIZE, which provides the number of employees at all locations of the firm, is used to construct the explanatory variables for firm size, which is classified into less than 20, 20-99, 100-500 and more than 500 employees in the firm. With respect to the type of occupation, the variable OCCWB2, which divides white collar workers into professional and clerical workers, is more detailed and thus more helpful for this study. Industries are divided into goods-producing industries and service-producing industries. The variable PPEMP indicates whether employees work for the private or the public sector. While it might have been desirable to further disaggregate the type of occupation and industry, the public use version of the AETS does not permit one to do so.

It is important to note here that the variables indicating union status, firm size, job tenure and full/part time job apply to *current* employees, rather than employees in 2002. All the variables retrieved from the 2003 AETS are listed in Appendix A.

3. Sample Characteristics

Table 1 and Table 2 present descriptive statistics for selected characteristics of the sample by region. The two tables provide a general picture of patterns in the data. The mean value of a dummy variable represents the proportion of observations taking the value 1 in the sample. The first part of Table 1 shows that the largest proportion of

respondents resides in Ontario, while the smallest proportion lives in the Atlantic provinces, which conforms to the country's actual population distribution.

Similarly, table 2 reveals both similarities and differences across regions. The distributions of age and marital status are similar in the six regions. For both male and female respondents aged between 25 and 64, nearly 90% are distributed evenly across the 25-34, 35-44 and 45-54 age groups, while about 10% are left in the 55-64 age group. About 65% of people in the sample have a spouse, although the proportion is lower in Quebec at about 61%. The ratio of native-born to foreign-born Canadians is about 3:1 in British Columbia for both men and women in the sample, which is the lowest compared with other provinces. This is likely because British Columbia is a popular destination for immigrants. Alberta and Ontario are two other provinces in which many foreign-born people reside.

With respect to the distribution across education levels, about half of the respondents living in each region received post secondary education, although the proportion is lower among males than among females. However, women in Alberta are slightly less likely than men to have a post secondary certificate or diploma. The percentage of people with a university degree is relatively high in Ontario and in the western provinces at about 22%.

As for the household income level, at least 50% of families have an income between $20,000 and $60,000, except in Ontario. Although fewer households have an income exceeding $80,000, Ontario, Alberta and British Columbia have relatively large proportions of residents with incomes over $80,000, equal to 25%, 23% and 20% respectively.

A large proportion of respondents (80%) do not have pre-school children, and this proportion is similar across regions. There are few respondents living in families with five or more family members. In the Prairie provinces, Alberta and British Columbia, over half of the economic families have only one or two members.

Up to 40% of workers in Quebec and 44% of female workers in the Prairie Provinces are union members, whereas only 26% of workers in Alberta belong to a union. Men have a higher probability of holding full time jobs than their female counterparts in each region. Respondents are more likely to work for large sized firms than for small firms, and most people have 1-6 years of job tenure. The industrial composition of the workforce is quite similar across regions in that workers -- especially female workers -- are more likely to be engaged in services-producing industries than in goods-producing industries.

Regarding workers' occupational distribution within regions, over 40% of male employees are blue collar. However, fewer than 10% of female employees fall into this category, especially in the western provinces. The proportion of blue collar workers is largest in Quebec and the Atlantic provinces, at 28% overall. For both men and women in the sample, professional jobs are more common than clerical and service jobs. The exception is that women in Alberta are slightly more likely to be engaged in service jobs than in professional jobs.

In sum, although there are some differences, there still exist many similarities in the distribution of population in terms of personal, family and job-related characteristics within regions in the sample. Therefore, if the effect of each characteristic on the

probability of receiving employer-sponsored training was the same in each region, one would not expect to see large differences in participation rates across regions. However, participation rates might well differ if the effects of particular characteristics differed across regions.

4. Participation in employer-sponsored training

Table 3 presents the overall provincial pattern of participation rates in employer-sponsored training in the sample.[6] In Canada, the average rate of participation in employer-sponsored training is 27.63% for men, 29.78% for women and 28.75% for all. It is notable that women are more likely than men to take employer-supported courses within all provinces except Prince Edward Island. The difference in the participation rates between men and women is largest in Nova Scotia at up to 9 percentage points; nevertheless, the differences are smaller among other regions at about 2 percentage points.

In general, the incidence of participation in employer-sponsored courses for both men and women is relatively high in western provinces. Oil and energy production is the pillar of industry in Alberta and Saskatchewan, and oil wealth might provide a boost to employers' decision on providing training. Although the overall participation rate (27.13%) is lower in the Atlantic provinces, it is surprising that the three Maritime provinces have a much higher proportion of workers taking employer-supported training compared to Newfoundland and Labrador. The rate in Nova Scotia (31.35%) is especially

[6] Weights are not used in deriving Table 3.

close to that of the western provinces. This is may be due to the development of oil production and on the technology of production in this area, requiring qualified workers. Employers thus have more incentive to provide training. However, Newfoundland and Labrador has the lowest participation rate (20.62%) among regions, which is probably attributable to the already well-developed off-shore oil projects and the fishing industry. Another possible reason is the socio-economic characteristics of this province, as Hui and Smith (2004) mention that "Newfoundland is the only province that provides no special supports to employers for adult education or training" (p. 50).

With regard to the two most populous provinces in the country, Ontario has a slightly higher than average participation rate, whereas Quebec has a relatively lower proportion of employees taking training. A possible explanation could be that there are already a large number of professional and skilled workers in the labour markets of these two provinces.

Table 4 shows how the rates of participation in employer-supported training associated with a variety of characteristics vary across the six regions for all individuals in the sample, and for men and women separately. The cross-regional comparison of characteristics is helpful in determining whether workers with the same characteristics have similar participation rates in different regions or provinces. Overall, there is a decreasing tendency to take employer-financed courses as age increases for both men and women in all six regions. However, this is not a monotonic decrease for all regions, and the effect of age is not consistent. Senior workers aged 55-64 have the lowest participation rate among regions except in British Columbia. In the eastern provinces,

workers aged 25 to 44 have the highest incidence rate, while in the western provinces, workers aged 35 to 54 are the most likely to receive training. Because most young workers aged 25 to 34 started their career after completing formal schooling, they may have good learning skills and advanced knowledge. Thus the employer will probably have some incentive to invest in them. People in the 35 to 44 age group are still relatively young and have a longer working life ahead of them than those over 45, which might provide an incentive to give them more training. Employees with a spouse are also more likely to undergo training courses than those without a spouse, with the exception of female workers in Atlantic Canada and Alberta. The participation rates of woman with spouses in these two regions are 29.07% and 32.96%, which are slightly higher than for those without a spouse.

The relationship between the participation rates of native-born and foreign-born Canadians varied across regions. For both male and female employees in Quebec, Ontario, the Prairie provinces and Alberta, native-born residents are more likely to participate in employer-sponsored training than the foreign-born. Although the native-born still have a higher participation rate than the foreign-born in the Prairie provinces and British Columbia, the difference is small. Interestingly, foreign-born people are more likely than the native-born to receive in training in the Atlantic provinces.

Table 4 also shows that one's education level is positively associated with training participation for both men and women in all regions in the sample, which supports the theoretical argument presented in previous studies: a higher level of education leads to a higher incidence of training. For people who have received 0-8 years or some secondary

education (Grade 9 or 10), women are less likely to receive training than men in all regions except British Columbia. However, women holding a university degree have a higher participation rate compared to men with a university degree in all provinces. In particular, the participation rate is much lower for men with a university degree in Ontario compared with their counterparts in other provinces. The situation with respect to the spouse's education level is quite similar.

Participation rates monotonically increase with the level of income for all regions. Men in Quebec, Ontario, the Prairies and Alberta have very low participation rates (less than 8%) in taking employer-sponsored courses in the under $20,000 income category. An interesting finding is that the participation rates are relatively similar across regions for the income categories $60,000-$80,000 and over $80,000. Generally, the western provinces have a larger proportion of people taking employer-sponsored courses than the eastern provinces in each income category. The regional difference is larger in the first two income categories for men and in the $60,000-$80,000 income category for women.

In Quebec, Ontario and British Columbia, male employees with children of pre-school age take more training than those without; on the contrary, females with young children take less training than their counterparts without. Females with pre-school children are less likely to have training compared with males who have pre-school children in all regions except Atlantic provinces. In the Prairies, 38.24% of persons with children of pre-school age participate in employer-sponsored training, which is the highest participation rate for this group across regions. The difference in the participation rate between people with and without young children is also the largest in the Prairies at

about 7 percentage points. With regard to the participation rates of respondents in economic families with different numbers of members, they are fairly similar for all five categories across regions. However, one might expect that members of small families would be more likely to participate in employer-sponsored training due to fewer family responsibilities. The largest regional difference in the incidence of participation is about 20 percentage points between the Prairie provinces and British Columbia, for men in families with five or more members.

Union members appear to have higher training incidence except in the case of men in Quebec and Ontario. The rates of participation in employer-sponsored training of female union and non-union workers in Atlantic Canada are 46.77% and 26.58% respectively, which constitutes the largest gap among all regions. However, union and non-union women in Quebec and Ontario have quite similar participation rates.

Full-time workers participate more in employer-sponsored training than part-time workers for both men and women and in all regions. This difference is especially obvious in the Atlantic provinces, where the full-time workers' participation rate is about 18 percentage points higher than that of part-time workers. However, part-time workers in Alberta and British Columbia have much higher probabilities of receiving training than those in Atlantic Canada and Quebec.

Job tenure is not consistently related to participation in training in all regions. Admittedly, workers with less than one year of tenure appear to be much less likely to take employer-sponsored courses, perhaps because employers tend to invest in employees who have shown loyalty to them. Employees with more than 20 years of tenure have

higher rates of participation in all regions. For instance, in the Atlantic provinces, Ontario, the Prairies and British Columbia, the participation rate either for men or for women exceeds 40%. To a large extent, western regions have higher proportion of people taking employer-sponsored training than eastern regions in each job tenure group.

There is a monotonically increasing relationship between firm size and training provision or participation in all provinces, except for female workers in Alberta and British Columbia. Female workers in these two provinces in firms of 100-500 employees are more likely to receive / take training than their counterparts in larger firms. For the smallest size firm, the participation rate of men in Quebec is the lowest, but for the largest size firms, men in Ontario are less likely to be involved in employer-supported training.

Workers in service industries have a higher probability than those in goods-producing industries of receiving employer-sponsored courses. This difference is largest in Quebec at about 8 percentage points. Public sector workers have a considerably higher participation rate than do private sector workers. This is likely due to the public sector's policy of supporting employees' improvement of skills and knowledge. Although participation rates are higher in the public sector in each region, public sector workers in Quebec have the lowest participation rate compared to their counterparts in other regions.

Compared with blue collar employees, white collar workers attend more training. However, female blue collar workers in Alberta have a slightly higher probability of receiving training than female clerical workers. For white collar occupations, professional and managerial workers are more likely to attend employer supported courses than clerical and sales workers in all regions.

It is evident that participation rates in employer-sponsored courses differ across regions. There exist larger gaps in the incidence of participation with respect to certain covariates within Atlantic Canada; however, this kind of difference is small among western regions. There are both regional differences and similarities in the rate of participation conditional on various characteristics. Some of the differences are relatively large, but in general, there are similar patterns in the participation rate within regions. This finding, to some extent, confirms the conclusion of Hui and Smith (2004) that differences among provinces in the incidence of training are not the result of differences across provinces in the distribution of employee attributes and employer characteristics. Another interesting finding is that male-female differences in participation the employer-courses are not that big overall, but are quite large conditional on some characteristics. In order to further investigate the effect generated by characteristics, an econometric analysis within a multi-variate framework is essential.

IV. Econometric Results and Discussion

1. The Probit Model

In this section, I will investigate the effect of a variety of characteristics on participation in employer-supported courses, and whether the same characteristics have a similar impact in different regions. Since I consider the respondents' decision whether to take/receive these courses or not, I am dealing with a discrete choice. Thus the dependent variable is a binary variable equal to 1 if the respondent takes the training, and 0 otherwise. Similarly, due to the limitations of the public use data file, all the independent

variables are dichotomous variables as well. For the econometric analysis, linear regression models are problematic in this case. However, the probit model can be used to analyze how participation is affected. Suppose Y denotes the presence or absence of the employer-sponsored courses, x represents the personal, family and job-related characteristics, and β is a set of parameters. Then the model takes the form:

$$\text{Prob}\,(Y = 1 \mid x) = \Phi(x'\beta),$$

where $\Phi(x'\beta)$ is assumed to be the standard normal cumulative distribution function.[7]

Either in economic theory or in reality, workers and employers should take both costs and benefits into account. Workers will consider the opportunity cost of taking the training as well as the increase in earnings; likewise, employers measure the net returns after providing the training. Therefore, the probit model in this paper can be expressed in the form of an index function model. As explained by Greene (2008), the difference between benefit and cost can be represented by an unobserved variable y^*, where $y^* = x'\beta + \varepsilon$. Assuming that ε has a standard normal distribution, Y=1 (presence of courses) if $y^* > 0$ and Y=0 (absence of courses) if $y^* \leq 0$. The model can be estimated using the method of maximum likelihood. A similar model was estimated by Hui and Smith (2004).

In addition, I also compute the marginal effect of each characteristic on the probability of the employer-supported training following the probit estimation. The marginal effect of an independent variable indicates the slope of the predicted function if the independent variable is continuous. In all my cases, the marginal effect is the difference in the probability of taking courses when the dummy independent variable

[7] For further details, see Greene (2008) p. 772-773.

changes in value from 0 to 1, while holding other variables constant.

2. Estimation Results

The probit model is first estimated for the nation as a whole and then for the six regions respectively. In addition, the corresponding marginal effects are presented as well. In order to investigate the influence of the estimated characteristics for the whole population in the country based on the sample, weighted estimation is also conducted. In general, the coefficients of probit estimation merely tell us whether a certain independent variable (one of the various characteristics) has any statistically significant effect on the dependent variable (incidence of training), as well as the direction of that effect. In addition, the marginal effects after probit indicate the corresponding magnitude of such effects.

2.1 Pooled Model

The model of participation in employer-sponsored training was first estimated using a sample that was pooled across regions to facilitate comparisons with previous studies and to confirm that regional difference do exist. The estimation results in the first part of table 5.1 reveal the effect (for men, women and all individuals respectively) of the independent variables, including the respondent's residential location on the dependent variable, employer-sponsored training participation, holding the other explanatory variables constant. The likelihood ratio (LR) investigates the statistical significance of the model as a whole. For instance, the LR chi-squared of 2202.23 with a p-value of 0.0000

indicates that the probit model as a whole is statistically significant, even though the pseudo R^2 is low.

Table 3 showed that the rate of participation in training courses in Ontario is ranked in the middle of the six regions. Therefore, residing in Ontario is chosen as the reference province. The reference person is foreign-born, aged between 24 and 35, and has a spouse. They and their spouse completed the lowest level of education, and their household income is under $20,000. However, they have no children at pre-school age. The reference person has a part-time job, is not a union member, and is in the first year of work for the smallest sized firm. He/she engages in goods-producing or blue collar work, and works in the public sector.

Table 5.1 shows that respondents as a whole living in Quebec are less likely than those living in Ontario to be involved in employer-sponsored training. The null hypothesis that there is no difference between Quebec and Ontario is rejected at the 10 percent level. For both men and women living in Alberta, although they have a higher probability of taking training than the corresponding reference man and woman in Ontario, the coefficient is not statistically significant. The coefficients of the other regional dummy variables are statistically different from zero and have positive signs, which suggests that residents of British Columbia, the Atlantic region and the Prairie provinces have a higher probability of taking employer-supported training than the reference person who lives in Ontario, holding all else equal.

Looking at the overall marginal effects presented in table 5.2, Quebec has a lower incidence of employer-sponsored course participation than does Ontario; in contrast, the

Atlantic Provinces and British Columbia have a higher rate. These patterns are consistent with the results of the descriptive analysis. Notably, respondents living in British Columbia have a 0.7 percentage point higher probability of being involved in employer-sponsored training, which is the largest effect in absolute terms. Although this may seem small, it constitutes a 35% increase in the probability of taking an employer-sponsored course, which is 0.02 for the reference person. Living in the Atlantic provinces, the Prairies or British Colombia has a similar positive effect on participation in employer-sponsored courses for men. However, only living in Quebec has a significant effect for women. These findings are similar to those of previous studies (Hurst 2008, Xu and Lin 2007).

Both the second parts of Table 5.1 and Table 5.2 show the weighted estimation results. The coefficient of the variable for Quebec is still negative, but it is no longer statistically significant, which implies that there is no difference between Quebec and Ontario in the probability of taking employer-sponsored training courses. People living in British Columbia, the Prairies and Atlantic provinces still have higher -- but very close -- participation rates relative to those of people living in Ontario.

Rather than discussing the effects on participation in employer-sponsored courses of other characteristics in this sub-section, I will discuss them by region in the following sub-section.

2.2 Regional Models

Table 6.1 and table 6.2 show the results of probit estimation and the corresponding

marginal effects on participation in employer-sponsored training for all regions. Consequently, there is a slight modification in the definition of the reference person. The reference person is now female, and regional variables are not included in the models.

For all six regions, the likelihood ratio chi-squared with a p-value of 0.0000 indicates that the probit model as a whole is statistically significant, but the pseudo R^2 with lower values implies that the explanatory power of each model is not very strong. In the previous section, some of the differences between men and women in participation of employer-sponsored courses are large; however, here the male-female difference in the probability of taking training is small and not statistically significant.

As age increases, a worker's probability of taking employer-supported courses falls in all regions. The monotonically negative relationship is most obvious in Quebec, since the coefficients of the three age group variables are statistically different from zero. However, the corresponding marginal effects are not significant. In the Atlantic provinces, people aged 55 to 64 have a 3.6 percentage point lower probability (which is also the largest difference in absolute value) of taking employer-sponsored training than do workers aged 23 to 34 at the 10 percent level of significance. Although in other regions there are no significant age-related marginal effects on rates of participation in employer-sponsored training, it is still notable that for the age range of 55-64 years, the negative coefficient is statistically significant in all regions except Alberta and British Columbia.

Native-born people are less likely to receive employer-sponsored courses than are the foreign-born in Atlantic Canada, but the corresponding coefficient is not significant.

In other regions, native-born respondents have a significantly higher probability of being involved in training, with those living in Alberta having the highest probability of taking employer-supported courses. The absence of a spouse increases the probability of undergoing training in all regions, but this positive effect is only statistically significant in Ontario and the Prairies. People without a spouse have a 0.8 percentage point higher probability of receiving employer-sponsored training in Ontario. The presence of pre-school children has a negative effect on participation in employer-sponsored courses in the eastern provinces and British Columbia, but has a positive effect in the Prairies and Alberta. However, none of these effects are statistically significant.

For all regions, a higher education level will increase a worker's probability of participating in training. In the Atlantic provinces, people with a university degree or higher are more likely to have received training than the reference group, who have only completed fewer than 11 years of schooling; however, the associated coefficient and marginal effect are not statistically significant. Although the probability of taking employer-sponsored training increases with the level of education in Ontario, it is individuals with some post-secondary certificate or diploma, not those with a university degree, who have the highest probability among the education levels. In Alberta and Quebec, the two highest education levels have similar high marginal effects on the probability of participation. In general, the spouse's education level has no significant effect on an individual's participation in employer-sponsored courses.

Basically, the probability of taking employer-sponsored training is positively related to the level of income. The marginal effects are statistically significant for the two highest

income categories for all regions. For the income level $60,000-$80,000, people in Quebec have the lowest probability of taking courses, and people in Atlantic Canada have the highest probability of taking courses. For household incomes over $80,000, those living in Quebec still have the lowest probability, while those living in the Prairies have the highest probability of taking employer-sponsored courses.

Being a union member is negatively related to participation in employer-sponsored in all regions except Atlantic Canada. However, the corresponding coefficients are not significant, which suggests that there is no difference between union and non-union members in the probability of taking employer-sponsored training courses for all regions. This is somewhat surprising since the previous descriptive analysis found that the rate of participation in training is similar for union and non-union members only in Quebec and Ontario for men.

It is also evident that full-time employees receive more training than those who work part-time. The probit coefficients are statistically significant for all regions except Alberta and British Columbia, but the corresponding marginal effects are significant only in the Atlantic provinces (at the 5 percent level of significance).

The probability of taking employer-sponsored training increases with years of job tenure. It seems that people with more than one year of job tenure have a strongly higher incidence of receiving employer-sponsored training than the reference person who has less than one year of tenure in his/her job. At each level of job tenure, people living in the Prairies and Atlantic Canada have relatively higher probabilities of participation than those living in other regions. However, the positive marginal effects are not significant for

the Prairies. The positive marginal effect is significant and the highest for people with 11 to 20 years of job tenure in the Atlantic provinces.

The results also suggest that employees in larger firms have a training advantage over their counterparts in small firms across regions. Firm size is usually expected to be positively related to participation in training courses due to economies of scale in the provision of training. Compared to the reference group (the smallest firm size), the coefficient for the largest firm size is statistically significant at the 5 or 10 percent level for all regions. However, the marginal effects of working for a large firm are significant only in Ontario, Alberta and British Columbia. Employees of the largest firms in British Columbia have a 6 percentage points higher probability of taking courses than those working in the smallest sized firms, which is the highest effect in absolute terms. This finding is consistent with the descriptive analysis.

Respondents who worked for the service industry have a higher probability than goods producing workers of attending employer-supported courses. There is a 45% increase (the largest) in the probability of taking an employer-sponsored course for those working in service-producing industries in Atlantic provinces.

Clerical and sales workers are surprisingly less likely to take training courses than the omitted group, who are blue-collar employees, in all regions except the Prairies. However, the marginal effects are not statistically significant for all regions. Professional and managerial employees have a higher probability of attending employer-sponsored courses, but the corresponding marginal effect is only significant in Ontario.

It is not surprising that individuals in all regions who work in the private sector have

a significantly lower probability than their counterparts in the public sector of receiving training. In the Atlantic provinces, for example, workers in the private sector have a probability of being involved in employer-sponsored courses that is 4.5 percentage points higher than that of private sector workers.

Tables 7.1 and 7.2 present the weighted estimates of the probit model and the associated marginal effect. While the results are not identical, many of the results are similar to those for the un-weighted estimates.[8]

Overall, provincial differences in the effect of various characteristics on participation in employer-sponsored courses exist. Without considering the statistical significance of the effect, there are similar patterns for the effect conditional on some characteristics, even though some of the differences in magnitude are large. For other characteristics, their effects on participation in employer-sponsored courses have different signs in different regions. When taking statistical significance into account, education and income level are clearly related to the participation rate in almost all provinces. Other factors such as firm size, job tenure and type of occupation have effects in some provinces.

V. Conclusion

Using the data from the 2003 AETS, this paper investigates regional differences in participation in employer-sponsored training in the form of formal job-related courses. The analysis is restricted to employed persons aged 25 to 64 who are neither

[8] Cameron and Trivedi (2005) argue that "if one takes a *structural* or *analytical* approach and assumes that the model of E[y|x] is correctly specified, there is no need to use sample weights. If one instead takes a *descriptive* or *data summary* approach then weights should be used" (p. 820). In this paper, I am more interested in the model of participation and therefore put more emphasis on the unweighted estimates.

self-employed nor full-time students. Individuals living in the three territories are excluded. The whole sample is divided into six regions.

The rate of participation in employer-sponsored courses does differ across regions. British Columbia and the Prairies have the highest participation rates, Ontario ranks in the middle, while Atlantic Canada and Quebec have lower participation rates. It is notable that Newfoundland and Labrador exhibit the smallest percentage of people taking employer-sponsored courses among Atlantic provinces and also in all regions. Conditional on some individual, job-related and firm characteristics, the participation rate differs largely across regions. For example, for foreign born people, rates of participation in employer-supported training vary largely across regions. For different income levels, differences in the rate of participation also exist across regions. However, there are still regional similarities in the participation rate conditional on various other attributes. For instance, age is negatively related to participation, but education is positively related to the participation rate. These patterns are similar across regions.

Estimating the effectiveness of the investment in work-related training should take both costs and benefits into account. The presence of pre-school children, being born in Canada, union membership, and type of occupation generate effects in different directions on participation in employer-sponsored courses in different regions. Regional differences also exist in the magnitude of the impact of each characteristic on the incidence of training. For a certain characteristic, the effect may be larger in one province, but might be not as large or nonexistent in other regions.

In conclusion, although the structure of the labour force and the composition of

industries are not the same, some characteristics generate similar effects across regions. However, the extent of these effects is not the same. Thus, we should not attribute regional differences in participation in employer-sponsored training solely to the effects of various individual, job-related and firm characteristics. Further research is required in order to investigate the factors that generate these regional differences.

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Appendix A. Variables Retrieved from Adult Education and Training Survey (2003)

Variable	
PROV	Province
PCMA	3 Largest metropolitan areas
GAGE	Age groups
SEX	Sex of respondents
LF_Q01B	Status-employee in 2002
DM_Q02	Born in Canada
INCOME	Total 2002 household income before tax/deduct
LFEMT02	Employment status of resp. year 2002
TECR	Took employer-sponsored courses
CMARSTAT	Marital status
CEDUC90	Highest level of education attained
PFTPMN	Full/part-time main or only job
CTENURE	Job tenure
CUNION	Union membership status, empl. Only
PFRMSIZE	Number of employees at all locations
PSCHOOLN	Current student status & type school
CEFAMSIZ	Number of individuals in economic family, 1 to 5+
CSPED09	Spouse's education level
GPSP	Type of industry
OCCWB2	Type of occupation 2
PPEMP	Type of employee
CPRESCH	Presence of pre-school child aged 0 to 5
WTPP	Person survey weight

Table 1. Descriptive Statistics of Selected AETS Variables in Canada, 2002

Variable	Male		Female		All	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Newfoundland and Labrador	0.0345	0.1826	0.0382	0.1918	0.0365	0.1874
Prince Edward Island	0.0223	0.1478	0.0314	0.1743	0.0270	0.1622
Nova Scotia	0.0508	0.2197	0.0590	0.2356	0.0551	0.2281
New Brunswick	0.0542	0.2264	0.0495	0.2170	0.0518	0.2216
Atlantic Canada	0.1619	0.3684	0.1781	0.3827	0.1704	0.3760
Québec	0.2045	0.4034	0.1847	0.3881	0.1942	0.3956
Ontario	0.2976	0.4573	0.3024	0.4593	0.3001	0.4583
Manitoba	0.0737	0.2614	0.0761	0.2651	0.0750	0.2633
Saskatchewan	0.0621	0.2414	0.0735	0.2610	0.0681	0.2519
Prairies Canada	0.1359	0.3427	0.1496	0.3567	0.1430	0.3501
Alberta	0.1147	0.3187	0.0961	0.2948	0.1050	0.3066
British Columbia	0.0854	0.2794	0.0890	0.2848	0.0873	0.2822
Montreal	0.0408	0.1979	0.0376	0.1902	0.0391	0.1939
Toronto	0.0492	0.2163	0.0566	0.2310	0.0530	0.2241
Vancouver	0.0292	0.1685	0.0318	0.1754	0.0306	0.1721
ONCMA	0.8807	0.3242	0.8741	0.3318	0.8773	0.3281

Table 2. Descriptive Statistics of Selected AETS Variables by Regions of Canada, 2002

Variable	Atlantic Canada						Quebec					
	Male		Female		All		Male		Female		All	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age												
25-34	0.23	0.42	0.23	0.42	0.23	0.42	0.27	0.44	0.26	0.44	0.27	0.44
35-44	0.34	0.47	0.33	0.47	0.33	0.47	0.31	0.46	0.33	0.47	0.32	0.47
45-54	0.31	0.46	0.31	0.46	0.31	0.46	0.31	0.46	0.31	0.46	0.31	0.46
55-64	0.13	0.34	0.13	0.34	0.13	0.34	0.11	0.31	0.11	0.31	0.11	0.31
Place of birth												
Native-born	0.96	0.20	0.97	0.16	0.97	0.18	0.95	0.22	0.96	0.20	0.95	0.21
Foreign-born	0.04	0.20	0.03	0.16	0.03	0.18	0.05	0.22	0.04	0.20	0.05	0.21
Marital status												
Spouse	0.71	0.45	0.65	0.48	0.68	0.47	0.64	0.48	0.59	0.49	0.62	0.49
No spouse	0.29	0.45	0.35	0.48	0.32	0.47	0.36	0.48	0.41	0.49	0.38	0.49
Education Level												
0-8 years, Grade 9 or 10	0.21	0.40	0.15	0.36	0.17	0.38	0.20	0.40	0.14	0.34	0.17	0.38
Grade 11-13 graduate	0.19	0.39	0.18	0.38	0.18	0.39	0.15	0.36	0.17	0.37	0.16	0.37
PS certificate/diploma	0.45	0.50	0.50	0.50	0.48	0.50	0.48	0.50	0.50	0.50	0.49	0.50
University degree	0.15	0.36	0.17	0.38	0.16	0.37	0.17	0.37	0.20	0.40	0.18	0.39
Spouse's education level												
0-8 years, Grade 9 or 10	0.13	0.33	0.16	0.37	0.14	0.35	0.11	0.32	0.12	0.32	0.12	0.32
Grade 11-13 graduate	0.15	0.35	0.11	0.31	0.13	0.33	0.11	0.31	0.10	0.30	0.10	0.30
PS certificate/diploma	0.30	0.46	0.28	0.45	0.29	0.46	0.31	0.46	0.26	0.44	0.28	0.45
University degree	0.12	0.32	0.09	0.28	0.10	0.30	0.10	0.30	0.11	0.31	0.10	0.31
Income												
under 20,000	0.12	0.33	0.18	0.39	0.16	0.36	0.10	0.30	0.16	0.36	0.13	0.33
20,000-40,000	0.34	0.48	0.31	0.46	0.33	0.47	0.29	0.46	0.32	0.47	0.31	0.46
40,000-60,000	0.26	0.44	0.28	0.45	0.27	0.44	0.29	0.45	0.25	0.43	0.27	0.44
60,000-80,000	0.15	0.35	0.12	0.33	0.13	0.34	0.16	0.36	0.15	0.35	0.15	0.36
Over 80,000	0.13	0.34	0.10	0.30	0.11	0.32	0.17	0.37	0.13	0.34	0.15	0.36
Pre-school children												
With	0.16	0.37	0.13	0.33	0.14	0.35	0.16	0.36	0.14	0.35	0.15	0.36
Without	0.84	0.37	0.87	0.33	0.86	0.35	0.84	0.36	0.86	0.35	0.85	0.36
Number of individuals in economic family												
One	0.19	0.39	0.19	0.39	0.19	0.39	0.25	0.43	0.21	0.41	0.23	0.42
Two	0.28	0.45	0.31	0.46	0.29	0.46	0.27	0.44	0.30	0.46	0.29	0.45
Three	0.22	0.41	0.23	0.42	0.22	0.42	0.21	0.41	0.23	0.42	0.22	0.41
Four	0.21	0.41	0.21	0.40	0.21	0.41	0.21	0.41	0.19	0.39	0.20	0.40
Five or more	0.10	0.30	0.07	0.26	0.08	0.28	0.07	0.25	0.07	0.25	0.07	0.25
Union membership status												

Variable	Atlantic Canada						Quebec					
	Male		Female		All		Male		Female		All	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Union	0.26	0.44	0.29	0.46	0.28	0.45	0.40	0.49	0.40	0.49	0.40	0.49
Non-union	0.45	0.50	0.50	0.50	0.48	0.50	0.44	0.50	0.48	0.50	0.46	0.50
Type of job												
Full-time	0.71	0.45	0.66	0.47	0.68	0.47	0.82	0.38	0.70	0.46	0.76	0.43
Part-time	0.03	0.18	0.16	0.36	0.10	0.30	0.05	0.22	0.20	0.40	0.13	0.33
Job tenure												
Less than 1 year	0.11	0.31	0.14	0.35	0.13	0.34	0.10	0.30	0.13	0.34	0.12	0.32
1-6 years	0.20	0.40	0.24	0.43	0.22	0.42	0.23	0.42	0.26	0.44	0.25	0.43
6-10 years	0.11	0.32	0.14	0.34	0.13	0.33	0.17	0.38	0.16	0.37	0.17	0.37
10-20 years	0.16	0.37	0.17	0.37	0.17	0.37	0.18	0.39	0.20	0.40	0.19	0.39
More than 20	0.16	0.36	0.12	0.33	0.14	0.35	0.18	0.39	0.15	0.36	0.17	0.37
Firm size (number of employees)												
Less than 20	0.13	0.34	0.17	0.38	0.15	0.36	0.14	0.34	0.19	0.39	0.16	0.37
20-99	0.11	0.31	0.10	0.30	0.11	0.31	0.13	0.34	0.12	0.33	0.13	0.33
100-500	0.12	0.32	0.10	0.30	0.11	0.31	0.13	0.34	0.14	0.35	0.13	0.34
More than 500	0.35	0.48	0.42	0.49	0.39	0.49	0.45	0.50	0.44	0.50	0.44	0.50
Industry												
Goods producing	0.41	0.49	0.12	0.33	0.25	0.43	0.43	0.50	0.14	0.34	0.29	0.45
Services producing	0.59	0.49	0.87	0.34	0.74	0.44	0.56	0.50	0.85	0.36	0.70	0.46
Occupation												
professional, managerial	0.27	0.45	0.43	0.49	0.36	0.48	0.31	0.46	0.49	0.50	0.40	0.49
Clerical, sales, service	0.22	0.42	0.47	0.50	0.36	0.48	0.21	0.41	0.41	0.49	0.31	0.46
Blue collar	0.50	0.50	0.09	0.29	0.28	0.45	0.47	0.50	0.09	0.28	0.28	0.45
Type of employee												
Private sector	0.74	0.44	0.53	0.50	0.63	0.48	0.76	0.43	0.51	0.50	0.64	0.48
Public sector	0.25	0.43	0.45	0.50	0.36	0.48	0.23	0.42	0.48	0.50	0.35	0.48
Gender												
Male					0.45	0.50					0.50	0.50
Female					0.55	0.50					0.50	0.50

Variable	Ontario						Prairies					
	Male		Female		All		Male		Female		All	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age												
25-34	0.24	0.43	0.23	0.42	0.24	0.43	0.26	0.44	0.22	0.42	0.24	0.43
35-44	0.33	0.47	0.35	0.48	0.34	0.47	0.33	0.47	0.32	0.47	0.32	0.47
45-54	0.30	0.46	0.30	0.46	0.30	0.46	0.28	0.45	0.32	0.46	0.30	0.46
55-64	0.13	0.33	0.12	0.33	0.12	0.33	0.13	0.34	0.14	0.35	0.14	0.34
Place of birth												
Native-born	0.81	0.39	0.80	0.40	0.81	0.40	0.90	0.30	0.93	0.25	0.92	0.28
Foreign-born	0.19	0.39	0.20	0.40	0.19	0.40	0.10	0.30	0.07	0.25	0.08	0.28
Marital status												
Spouse	0.68	0.47	0.64	0.48	0.66	0.47	0.64	0.48	0.64	0.48	0.64	0.48
No spouse	0.32	0.47	0.36	0.48	0.34	0.47	0.36	0.48	0.36	0.48	0.36	0.48
Education Level												
0-8 years, Grade 9 or 10	0.12	0.32	0.09	0.29	0.10	0.31	0.14	0.35	0.09	0.28	0.11	0.31
Grade 11-13 graduate	0.21	0.41	0.21	0.41	0.21	0.41	0.22	0.41	0.20	0.40	0.21	0.41
PS certificate/diploma	0.46	0.50	0.48	0.50	0.47	0.50	0.43	0.50	0.49	0.50	0.46	0.50
University degree	0.21	0.41	0.22	0.41	0.22	0.41	0.21	0.41	0.23	0.42	0.22	0.41
Spouse's education level												
0-8 years, Grade 9 or 10	0.08	0.26	0.08	0.27	0.08	0.27	0.06	0.25	0.11	0.32	0.09	0.29
Grade 11-13 graduate	0.16	0.36	0.13	0.34	0.14	0.35	0.16	0.36	0.12	0.33	0.14	0.34
PS certificate/diploma	0.30	0.46	0.29	0.45	0.29	0.46	0.28	0.45	0.26	0.44	0.27	0.45
University degree	0.13	0.34	0.13	0.33	0.13	0.33	0.12	0.33	0.12	0.32	0.12	0.33
Income												
under 20,000	0.07	0.25	0.10	0.30	0.09	0.28	0.08	0.27	0.12	0.33	0.10	0.30
20,000-40,000	0.18	0.39	0.25	0.43	0.22	0.41	0.25	0.43	0.28	0.45	0.26	0.44
40,000-60,000	0.27	0.45	0.25	0.43	0.26	0.44	0.31	0.46	0.28	0.45	0.29	0.46
60,000-80,000	0.19	0.39	0.18	0.38	0.18	0.39	0.19	0.40	0.15	0.35	0.17	0.37
Over 80,000	0.28	0.45	0.22	0.42	0.25	0.43	0.18	0.38	0.17	0.38	0.17	0.38
Pre-school children												
With	0.17	0.37	0.15	0.36	0.16	0.36	0.16	0.37	0.14	0.35	0.15	0.36
Without	0.83	0.37	0.85	0.36	0.84	0.36	0.84	0.37	0.86	0.35	0.85	0.36
Number of individuals in economic family												
One	0.22	0.42	0.17	0.38	0.20	0.40	0.30	0.46	0.20	0.40	0.24	0.43
Two	0.25	0.43	0.30	0.46	0.27	0.45	0.24	0.43	0.32	0.47	0.29	0.45
Three	0.19	0.40	0.21	0.41	0.20	0.40	0.16	0.36	0.19	0.39	0.18	0.38
Four	0.24	0.42	0.23	0.42	0.23	0.42	0.19	0.40	0.19	0.39	0.19	0.39
Five or more	0.10	0.30	0.09	0.29	0.09	0.29	0.11	0.32	0.10	0.31	0.11	0.31

Variable	Ontario						Prairies					
	Male		Female		All		Male		Female		All	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Union membership status												
Union	0.33	0.47	0.30	0.46	0.32	0.46	0.31	0.46	0.44	0.50	0.38	0.49
Non-union	0.55	0.50	0.60	0.49	0.58	0.49	0.54	0.50	0.45	0.50	0.49	0.50
Type of job												
Full-time	0.87	0.33	0.73	0.45	0.80	0.40	0.86	0.34	0.71	0.46	0.78	0.42
Part-time	0.04	0.20	0.20	0.40	0.12	0.33	0.05	0.22	0.21	0.41	0.14	0.35
Job tenure												
Less than 1 year	0.12	0.33	0.13	0.34	0.13	0.33	0.12	0.32	0.12	0.32	0.12	0.32
1-6 years	0.25	0.43	0.30	0.46	0.27	0.45	0.27	0.44	0.29	0.46	0.28	0.45
6-10 years	0.14	0.35	0.16	0.37	0.15	0.36	0.17	0.38	0.16	0.36	0.16	0.37
10-20 years	0.22	0.41	0.23	0.42	0.22	0.42	0.18	0.38	0.21	0.40	0.19	0.40
More than 20	0.19	0.39	0.11	0.31	0.15	0.35	0.18	0.38	0.14	0.35	0.16	0.37
Firm size (number of employees)												
Less than 20	0.11	0.31	0.16	0.37	0.14	0.35	0.16	0.36	0.16	0.37	0.16	0.37
20-99	0.13	0.34	0.12	0.33	0.13	0.33	0.12	0.33	0.12	0.33	0.12	0.33
100-500	0.14	0.35	0.12	0.32	0.13	0.33	0.13	0.34	0.17	0.38	0.15	0.36
More than 500	0.50	0.50	0.50	0.50	0.50	0.50	0.44	0.50	0.44	0.50	0.44	0.50
Industry												
Goods producing	0.43	0.50	0.15	0.36	0.28	0.45	0.34	0.47	0.07	0.26	0.19	0.40
Services producing	0.56	0.50	0.84	0.37	0.70	0.46	0.65	0.48	0.91	0.29	0.79	0.41
Occupation												
professional, managerial	0.34	0.47	0.48	0.50	0.41	0.49	0.37	0.48	0.52	0.50	0.45	0.50
Clerical, sales, service	0.21	0.41	0.42	0.49	0.32	0.47	0.22	0.42	0.42	0.49	0.33	0.47
Blue collar	0.44	0.50	0.09	0.29	0.26	0.44	0.41	0.49	0.04	0.20	0.21	0.41
Type of employee												
Private sector	0.77	0.42	0.56	0.50	0.66	0.47	0.71	0.45	0.43	0.50	0.56	0.50
Public sector	0.22	0.41	0.43	0.50	0.33	0.47	0.28	0.45	0.55	0.50	0.43	0.49
Gender												
Male					0.47	0.50					0.45	0.50
Female					0.53	0.50					0.55	0.50

Variable	Alberta						British Columbia					
	Male		Female		All		Male		Female		All	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age												
25-34	0.29	0.45	0.28	0.45	0.29	0.45	0.26	0.44	0.26	0.44	0.26	0.44
35-44	0.31	0.46	0.32	0.47	0.32	0.47	0.30	0.46	0.33	0.47	0.32	0.47
45-54	0.30	0.46	0.28	0.45	0.29	0.45	0.30	0.46	0.29	0.45	0.29	0.46
55-64	0.10	0.30	0.11	0.32	0.11	0.31	0.14	0.34	0.12	0.32	0.13	0.33
Place of birth												
Native-born	0.86	0.35	0.87	0.34	0.86	0.34	0.76	0.43	0.77	0.42	0.76	0.43
Foreign-born	0.14	0.35	0.13	0.34	0.14	0.34	0.24	0.43	0.23	0.42	0.24	0.43
Marital status												
Spouse	0.62	0.49	0.62	0.49	0.62	0.49	0.65	0.48	0.61	0.49	0.63	0.48
No spouse	0.38	0.49	0.38	0.49	0.38	0.49	0.35	0.48	0.39	0.49	0.37	0.48
Education Level												
0-8 years, Grade 9 or 10	0.12	0.32	0.11	0.31	0.11	0.31	0.13	0.34	0.08	0.27	0.10	0.30
Grade 11-13 graduate	0.19	0.39	0.19	0.40	0.19	0.39	0.19	0.39	0.22	0.41	0.20	0.40
PS certificate/diploma	0.50	0.50	0.49	0.50	0.50	0.50	0.47	0.50	0.48	0.50	0.47	0.50
University degree	0.20	0.40	0.20	0.40	0.20	0.40	0.21	0.41	0.23	0.42	0.22	0.42
Spouse's education level												
0-8 years, Grade 9 or 10	0.07	0.26	0.09	0.29	0.08	0.27	0.04	0.20	0.07	0.26	0.06	0.23
Grade 11-13 graduate	0.14	0.35	0.11	0.31	0.13	0.33	0.14	0.34	0.12	0.33	0.13	0.34
PS certificate/diploma	0.25	0.43	0.30	0.46	0.27	0.45	0.34	0.47	0.25	0.44	0.29	0.46
University degree	0.13	0.34	0.11	0.31	0.12	0.33	0.11	0.31	0.13	0.34	0.12	0.33
Income												
under 20,000	0.06	0.24	0.10	0.30	0.08	0.27	0.07	0.25	0.14	0.34	0.10	0.30
20,000-40,000	0.20	0.40	0.32	0.47	0.26	0.44	0.22	0.41	0.23	0.42	0.22	0.42
40,000-60,000	0.29	0.45	0.21	0.41	0.25	0.43	0.30	0.46	0.28	0.45	0.29	0.45
60,000-80,000	0.19	0.39	0.17	0.37	0.18	0.38	0.19	0.39	0.18	0.38	0.19	0.39
Over 80,000	0.26	0.44	0.20	0.40	0.23	0.42	0.23	0.42	0.18	0.38	0.20	0.40
Pre-school children												
With	0.18	0.38	0.16	0.37	0.17	0.37	0.14	0.35	0.17	0.37	0.15	0.36
Without	0.82	0.38	0.84	0.37	0.83	0.37	0.86	0.35	0.83	0.37	0.85	0.36
Number of individuals in economic family												
One	0.30	0.46	0.21	0.41	0.26	0.44	0.28	0.45	0.21	0.41	0.24	0.43
Two	0.23	0.42	0.30	0.46	0.27	0.44	0.25	0.44	0.32	0.47	0.29	0.45
Three	0.17	0.38	0.20	0.40	0.19	0.39	0.18	0.39	0.19	0.40	0.19	0.39
Four	0.19	0.39	0.20	0.40	0.19	0.40	0.20	0.40	0.20	0.40	0.20	0.40
Five or more	0.11	0.31	0.08	0.27	0.10	0.29	0.09	0.29	0.07	0.26	0.08	0.27

Variable	Alberta						British Columbia					
	Male		Female		All		Male		Female		All	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Union membership status												
Union	0.23	0.42	0.29	0.45	0.26	0.44	0.35	0.48	0.36	0.48	0.35	0.48
Non-union	0.63	0.48	0.59	0.49	0.61	0.49	0.50	0.50	0.53	0.50	0.52	0.50
Type of job												
Full-time	0.90	0.30	0.72	0.45	0.81	0.39	0.87	0.34	0.65	0.48	0.75	0.43
Part-time	0.02	0.14	0.19	0.40	0.10	0.30	0.04	0.20	0.26	0.44	0.15	0.36
Job tenure												
Less than 1 year	0.16	0.36	0.16	0.37	0.16	0.37	0.13	0.34	0.13	0.34	0.13	0.34
1-6 years	0.32	0.47	0.32	0.47	0.32	0.47	0.26	0.44	0.28	0.45	0.27	0.45
6-10 years	0.14	0.35	0.18	0.38	0.16	0.37	0.16	0.37	0.18	0.38	0.17	0.38
10-20 years	0.17	0.37	0.16	0.36	0.16	0.37	0.22	0.42	0.21	0.41	0.22	0.41
More than 20	0.14	0.35	0.10	0.30	0.12	0.32	0.14	0.34	0.10	0.30	0.12	0.32
Firm size (number of employees)												
Less than 20	0.13	0.34	0.16	0.36	0.14	0.35	0.16	0.37	0.20	0.40	0.18	0.39
20-99	0.14	0.35	0.10	0.30	0.12	0.33	0.15	0.36	0.11	0.31	0.13	0.34
100-500	0.14	0.35	0.14	0.35	0.14	0.35	0.15	0.36	0.14	0.34	0.14	0.35
More than 500	0.44	0.50	0.48	0.50	0.46	0.50	0.39	0.49	0.44	0.50	0.42	0.49
Industry												
Goods producing	0.40	0.49	0.11	0.31	0.26	0.44	0.36	0.48	0.10	0.30	0.22	0.41
Services producing	0.59	0.49	0.88	0.33	0.73	0.45	0.64	0.48	0.89	0.32	0.77	0.42
Occupation												
professional, managerial	0.36	0.48	0.45	0.50	0.40	0.49	0.37	0.48	0.48	0.50	0.43	0.50
Clerical, sales, service	0.20	0.40	0.47	0.50	0.33	0.47	0.20	0.40	0.46	0.50	0.34	0.47
Blue collar	0.44	0.50	0.06	0.24	0.26	0.44	0.42	0.49	0.05	0.21	0.22	0.41
Type of employee												
Private sector	0.79	0.41	0.53	0.50	0.67	0.47	0.75	0.44	0.55	0.50	0.64	0.48
Public sector	0.20	0.40	0.45	0.50	0.32	0.47	0.24	0.43	0.43	0.50	0.35	0.48
Gender												
Male					0.52	0.50					0.47	0.50
Female					0.48	0.50					0.53	0.50

Table 3. Participation Rates of Employer-sponsored Training (2002)

Variable	Male	Female	All
Atlantic Canada	25.32	28.65	27.13
Newfoundland an Labrador	20.00	21.13	20.62
Prince Edward Island	25.66	24.89	25.29
Nova Scotia	26.30	35.16	31.25
New Brunswick	27.64	29.08	28.36
Québec	24.21	26.68	25.43
Ontario	28.04	30.23	29.19
Prairies Canada	30.70	31.95	31.39
Manitoba	30.08	32.21	31.21
Saskatchewan	31.44	31.68	31.58
Alberta	29.96	30.81	30.37
British Columbia	30.81	32.22	31.56
Canada	27.63	29.78	28.75

Table 4. Rates of Participation in Employer-sponsored Training by Regions (2002)

Variable	Atlantic Canada			Quebec			Ontario		
	Male	Female	All	Male	Female	All	Male	Female	All
Age									
25-34	23.90	31.46	28.03	27.93	30.45	29.16	30.28	29.14	29.70
35-44	28.49	28.80	28.66	23.11	25.78	24.46	28.36	32.00	30.32
45-54	26.11	29.85	28.17	24.71	25.95	25.33	28.59	32.44	30.61
55-64	17.60	20.57	19.24	16.88	22.23	19.46	21.62	21.77	21.70
Place of birth									
Native-born	24.95	28.36	26.82	24.62	27.34	25.98	29.58	31.65	30.67
Foreign-born	34.09	38.89	36.25	16.18	11.86	14.17	21.54	24.43	23.08
Marital status									
Spouse	25.96	28.42	27.25	26.23	26.76	26.48	30.32	30.15	30.23
No spouse	23.75	29.07	26.89	20.60	26.56	23.75	23.14	30.38	27.15
Education Level									
0-8 years, Grade 9 or 10	10.62	9.64	10.17	6.38	4.30	5.56	8.68	7.32	8.05
Grade 11-13 graduate	16.99	20.76	19.00	16.90	15.86	16.36	20.95	18.09	19.42
PS certificate/diploma	27.74	29.72	28.88	27.37	29.65	28.53	33.15	31.58	32.31
University degree	47.93	50.45	49.36	43.53	43.54	43.54	34.71	48.68	42.13
Spouse's education level									
0-8 years, Grade 9 or 10	12.95	18.57	16.33	13.92	14.38	14.15	15.03	16..85	16.02
Grade 11-13 graduate	21.60	25.17	23.28	19.59	26.87	23.05	28.25	23.05	25.74
PS certificate/diploma	27.68	30.48	29.15	29.67	29.01	29.37	32.84	31.57	32.19
University degree	42.97	41.74	42.39	35.66	34.48	35.07	37.31	44.48	40.98
Income									
under 20,000	11.11	10.25	10.55	4.44	8.80	7.12	7.91	11.26	10.00
20,000-40,000	14.21	22.65	18.62	13.94	19.45	16.78	13.94	20.98	18.14
40,000-60,000	28.37	32.88	30.93	22.86	32.06	27.10	25.45	27.94	26.70
60,000-80,000	38.51	47.28	42.94	36.07	40.80	38.33	31.80	36.43	34.14
Over 80,000	47.23	46.88	47.06	45.02	39.89	42.79	42.11	46.81	44.31
Pre-school children									
With	24.31	27.81	26.00	27.98	22.40	25.37	30.45	26.20	28.34
Without	25.52	28.77	27.33	23.51	27.37	25.45	27.56	30.93	29.35

Variable	Atlantic Canada			Quebec			Ontario		
	Male	Female	All	Male	Female	All	Male	Female	All
Number of individuals in economic family									
One	27.36	28.57	28.01	21.70	29.17	25.12	23.62	30.61	26.86
Two	22.73	28.22	25.84	21.87	27.99	25.09	27.28	30.43	29.07
Three	26.78	30.72	28.99	22.42	25.24	23.89	25.95	29.42	27.84
Four	24.79	26.84	25.89	31.27	24.61	28.15	34.10	30.35	32.16
Five or more	26.61	29.17	27.80	26.32	23.66	25.00	29.59	30.39	30.00
Union membership status									
Union	39.66	46.77	43.72	25.31	35.87	30.55	29.32	42.44	35.96
Non-union	27.49	26.58	26.97	28.80	23.61	26.11	30.28	26.32	28.11
Type of job									
Full-time	31.67	37.77	34.89	27.68	32.40	29.83	30.05	33.86	31.88
Part-time	21.62	15.87	16.73	10.14	16.49	15.23	17.65	23.02	22.16
Job tenure									
Less than 1 year	16.39	19.90	18.53	19.57	16.48	17.81	19.92	17.59	18.67
1-6 years	28.51	32.19	30.68	22.70	31.11	27.11	33.66	31.17	32.25
6-10 years	34.40	34.62	34.53	31.25	29.33	30.32	28.21	27.65	27.90
10-20 years	39.23	41.44	40.45	30.08	29.37	29.71	30.54	37.80	34.45
More than 20	34.50	40.24	37.31	27.95	34.48	30.85	29.97	41.53	34.56
Firm size (number of employees)									
Less than 20	22.76	22.47	22.58	14.36	17.51	16.18	17.41	20.98	19.63
20-99	22.50	32.12	27.63	22.83	22.35	22.60	27.31	24.19	25.73
100-500	27.69	36.30	32.08	24.73	31.41	28.15	27.50	30.53	28.97
More than 500	39.90	38.63	39.15	32.96	35.39	34.15	30.06	37.37	35.80
Industry									
Goods producing	14.77	13.84	14.52	17.11	13.76	16.31	23.54	18.64	22.18
Services producing	33.02	31.18	31.84	30.06	29.05	29.45	31.71	32.66	32.30
Occupation									
professional, managerial	44.33	44.40	44.38	39.67	37.19	38.15	40.61	44.85	43.20
Clerical, sales, service	21.14	18.93	19.56	19.66	17.53	18.27	26.22	18.93	21.23
Blue collar	17.22	9.76	15.84	16.62	13.11	16.07	19.41	8.25	17.31
Type of employee									
Private sector	18.07	17.16	17.65	21.21	16.81	19.45	24.01	20.05	22.24
Public sector	47.99	43.07	44.61	34.89	37.77	36.82	42.60	44.10	43.63

Variable	Prairies			Alberta			British Columbia		
	Male	Female	All	Male	Female	All	Male	Female	All
Age									
25-34	31.95	33.33	32.65	26.75	28.57	27.61	28.95	28.49	28.70
35-44	34.44	30.08	32.07	30.61	34.50	32.49	29.94	33.94	32.15
45-54	29.77	37.14	33.99	33.33	30.85	32.18	33.13	35.94	34.62
55-64	20.83	22.43	21.74	27.27	25.93	26.58	31.25	26.58	28.93
Place of birth									
Native-born	31.08	32.30	31.76	31.50	31.94	31.71	32.58	32.61	32.59
Foreign-born	27.37	27.03	27.22	20.37	23.40	21.78	25.18	30.97	28.23
Marital statues									
Spouse	33.67	32.67	33.13	33.33	29.50	31.51	32.54	34.33	33.46
No spouse	25.38	30.69	28.30	24.41	32.96	28.50	27.59	28.96	28.35
Education Level									
0-8 years, Grade 9 or 10	16.28	12.24	14.54	16.67	7.89	12.65	13.33	15.69	14.29
Grade 11-13 graduate	25.62	23.42	24.47	22.45	21.58	22.03	22.52	23.78	23.23
PS certificate/diploma	31.41	29.50	30.31	31.19	33.71	32.39	31.99	32.17	32.08
University degree	44.10	52.38	48.77	41.67	44.52	43.05	46.34	45.75	46.01
Spouse's education level									
0-8 years, Grade 9 or 10	21.67	22.05	21.93	18.18	23.44	21.01	26.09	27.66	27.14
Grade 11-13 graduate	35.42	30.15	32.86	23.89	26.92	25.13	24.05	32.10	28.13
PS certificate/diploma	33.59	32.88	33.21	36.60	29.58	32.92	32.83	36.31	34.43
University degree	39.82	45.86	43.09	44.23	38.46	41.76	43.75	41.18	42.28
Income									
under 20,000	2.78	13.04	9.52	4.35	15.28	11.02	13.16	10.00	10.94
20,000-40,000	21.59	26.30	24.30	20.00	29.00	25.39	15.20	23.18	19.57
40,000-60,000	24.91	32.37	28.81	24.89	31.13	27.39	28.90	34.07	31.55
60,000-80,000	43.02	39.63	41.40	34.90	29.41	32.46	38.39	42.02	40.26
Over 80,000	42.47	47.62	49.86	45.15	42.55	44.09	46.62	47.90	47.22
Pre-school children									
With	42.28	34.40	38.24	33.81	28.32	31.35	32.10	30.00	30.89
Without	28.48	31.55	30.17	29.13	31.28	30.17	30.60	32.67	31.68

Variable	Prairies			Alberta			British Columbia		
	Male	Female	All	Male	Female	All	Male	Female	All
Number of individuals in economic family									
One	24.91	28.90	26.68	25.96	35.14	29.50	31.48	29.50	30.56
Two	23.87	29.25	27.19	28.58	27.78	28.14	32.43	32.71	32.60
Three	32.19	36.97	35.01	28.15	33.56	30.96	29.52	32.03	30.90
Four	41.67	32.37	36.69	36.55	30.14	33.33	34.21	34.85	34.55
Five or more	39.42	36.21	37.73	35.71	25.86	31.69	19.23	31.25	25.00
Union membership status									
Union	34.95	40.52	38.64	36.67	45.10	41.15	37.44	43.88	40.91
Non-union	32.46	28.48	30.48	31.08	27.55	29.45	31.16	29.02	30.00
Type of job									
Full-time	33.46	37.38	35.40	31.81	34.17	32.81	32.48	37.35	34.72
Part-time	14.90	22.46	21.20	18.75	25.90	25.16	30.43	26.04	26.56
Job tenure									
Less than 1 year	19.63	22.90	21.43	24.40	21.74	23.11	29.33	18.39	23.46
1-6 years	37.25	31.60	34.03	27.42	31.88	29.56	29.14	34.04	31.86
6-10 years	33.75	35.06	34.43	33.03	39.84	36.71	33.33	32.20	32.70
10-20 years	30.12	33.33	31.98	37.21	35.71	36.51	39.53	41.43	40.52
More than 20	34.55	47.20	40.80	40.74	32.86	37.64	28.75	43.28	35.37
Firm size (number of employees)									
Less than 20	20.69	22.60	21.74	16.83	20.72	18.87	17.89	22.90	20.80
20-99	33.91	34.33	34.14	23.42	30.56	26.23	23.33	29.58	26.09
100-500	36.07	37.23	36.77	29.09	44.12	36.32	37.21	41.76	39.55
More than 500	36.95	38.07	37.56	41.21	34.71	37.99	43.30	39.73	41.28
Industry									
Goods producing	25.71	22.22	25.00	26.92	21.05	25.77	21.74	23.44	22.14
Services producing	33.50	33.20	33.31	32.61	32.11	32.32	36.31	33.73	34.73
Occupation									
professional, managerial	41.12	43.28	42.48	41.01	44.10	42.67	47.93	43.13	45.07
Clerical, sales, service	31.71	21.51	24.63	25.32	20.00	21.68	19.83	23.26	22.30
Blue collar	21.07	6.25	19.39	25.82	17.78	23.12	21.40	16.67	20.88
Type of employee									
Private sector	26.40	19.54	23.51	26.05	19.26	23.47	25.58	23.63	24.69
Public sector	42.08	42.48	42.37	47.40	44.58	45.49	47.89	44.25	45.45

Table 5.1 Probit Model of the Participation on Employer-sponsored Courses (2002)

	I No weight			II With weight		
	Male	Female	All	Male	Female	All
Atlantic Canada	0.110**	0.080	0.094**	0.129*	0.175***	0.155***
	(0.056)	(0.051)	(0.038)	(0.068)	(0.063)	(0.046)
Quebec	-0.032	-0.098*	-0.065*	-0.026	-0.005	-0.013
	(0.052)	(0.051)	(0.036)	(0.068)	(0.067)	(0.048)
Prairies	0.127**	0.005	0.068*	0.167**	0.107	0.139***
	(0.056)	(0.052)	(0.038)	(0.068)	(0.066)	(0.047)
Alberta	0.049	0.041	0.048	0.112	0.079	0.096*
	(0.059)	(0.060)	(0.042)	(0.074)	(0.073)	(0.052)
British Columbia	0.146**	0.109*	0.125***	0.162**	0.196***	0.172***
	(0.066)	(0.062)	(0.045)	(0.080)	(0.075)	(0.055)
Age						
35-44	-0.084*	-0.009	-0.047	-0.059	0.013	-0.026
	(0.047)	(0.046)	(0.033)	(0.066)	(0.064)	(0.046)
45-54	-0.148***	-0.053	-0.090**	-0.169**	0.005	-0.077
	(0.054)	(0.052)	(0.037)	(0.074)	(0.071)	(0.051)
55-64	-0.252***	-0.186***	-0.205***	-0.237**	-0.074	-0.152**
	(0.070)	(0.067)	(0.048)	(0.098)	(0.093)	(0.067)
Place of birth						
native-born	0.222***	0.129**	0.183***	0.340***	0.239***	0.296***
	(0.056)	(0.055)	(0.039)	(0.072)	(0.068)	(0.050)
Marital status						
No spouse	0.048	0.178***	0.130***	-0.082	0.190**	0.074
	(0.070)	(0.062)	(0.046)	(0.101)	(0.080)	(0.064)
Education level						
Grade 11-13 graduate	0.172**	0.275***	0.211***	0.314***	0.329***	0.309***
	(0.070)	(0.079)	(0.052)	(0.096)	(0.103)	(0.070)
PS certificate/diploma	0.372***	0.465***	0.412***	0.524***	0.582***	0.543***
	(0.063)	(0.074)	(0.048)	(0.086)	(0.095)	(0.064)
University degree	0.345***	0.607***	0.468***	0.419***	0.742***	0.564***
	(0.078)	(0.084)	(0.056)	(0.109)	(0.111)	(0.076)

Spouse's education level						
Grade 11-13 graduate	0.046	-0.022	0.016	-0.052	-0.037	-0.047
	(0.077)	(0.072)	(0.052)	(0.105)	(0.094)	(0.070)
PS certificate/diploma	0.086	0.062	0.080*	-0.014	0.062	0.026
	(0.069)	(0.062)	(0.046)	(0.096)	(0.077)	(0.062)
University degree	0.018	0.051	0.034	-0.041	0.092	0.023
	(0.082)	(0.075)	(0.055)	(0.114)	(0.096)	(0.075)
Income						
20,000-40,000	0.321***	0.234***	0.269***	0.265**	0.125	0.190**
	(0.092)	(0.067)	(0.053)	(0.124)	(0.097)	(0.077)
40,000-60,000	0.541***	0.372***	0.431***	0.511***	0.352***	0.415***
	(0.093)	(0.070)	(0.055)	(0.123)	(0.100)	(0.077)
60,000-80,000	0.753***	0.519***	0.608***	0.695***	0.489***	0.580***
	(0.097)	(0.077)	(0.059)	(0.129)	(0.111)	(0.083)
Over80,000	0.923***	0.641***	0.749***	0.840***	0.620***	0.710***
	(0.099)	(0.081)	(0.061)	(0.133)	(0.115)	(0.086)
Pre-school children						
With	0.013	-0.067	-0.012	-0.037	-0.124*	-0.068
	(0.052)	(0.053)	(0.037)	(0.069)	(0.071)	(0.049)
Union membership						
Union	-0.155***	-0.002	-0.066**	-0.062	0.003	-0.022
	(0.044)	(0.044)	(0.031)	(0.061)	(0.062)	(0.043)
Type of job						
Full-time job	0.157**	0.261***	0.248***	0.085	0.291***	0.237***
	(0.070)	(0.043)	(0.036)	(0.092)	(0.060)	(0.049)
Job tenure						
1-6 years	0.115*	0.250***	0.182***	0.080	0.299***	0.170***
	(0.059)	(0.053)	(0.039)	(0.081)	(0.072)	(0.054)
6-10 years	0.101	0.187***	0.145***	0.139	0.231***	0.164***
	(0.066)	(0.060)	(0.044)	(0.088)	(0.082)	(0.059)
10-20years	0.123*	0.246***	0.185***	0.117	0.289***	0.184***
	(0.065)	(0.060)	(0.043)	(0.089)	(0.080)	(0.059)
More than 20 years	0.089	0.288***	0.189***	0.028	0.320***	0.143**
	(0.071)	(0.069)	(0.049)	(0.096)	(0.094)	(0.067)
Firm size						
20-99	0.169***	0.139**	0.156***	0.208**	0.106	0.148**

	(0.064)	(0.061)	(0.044)	(0.084)	(0.085)	(0.060)
100-500	0.212***	0.219***	0.212***	0.275***	0.266***	0.256***
	(0.065)	(0.060)	(0.044)	(0.086)	(0.081)	(0.059)
More than 500	0.388***	0.216***	0.293***	0.428***	0.284***	0.344***
	(0.055)	(0.049)	(0.036)	(0.070)	(0.067)	(0.048)
Industry						
Services producing	0.146***	0.087	0.124***	0.180***	0.130	0.166***
	(0.044)	(0.066)	(0.036)	(0.061)	(0.090)	(0.050)
Occupation						
Professional/ managerial	0.199***	0.435***	0.233***	0.188***	0.296**	0.172***
	(0.051)	(0.089)	(0.040)	(0.071)	(0.122)	(0.056)
Clerical/ sales/ service	-0.028	0.143	-0.051	-0.107	0.032	-0.119**
	(0.054)	(0.089)	(0.041)	(0.074)	(0.122)	(0.057)
Type of employee						
Private sector	-0.254***	-0.362***	-0.323***	-0.210***	-0.323***	-0.278***
	(0.047)	(0.042)	(0.031)	(0.067)	(0.059)	(0.044)
Constant	-2.049***	-2.223***	-2.061***	-2.191***	-2.521***	-2.292***
	(0.144)	(0.140)	(0.095)	(0.188)	(0.173)	(0.125)
LR/Wald chi^2	976.45	1306.67	2202.23	515.01	749.29	1155.00
Prob > chi^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.1217	0.1444	0.1289	0.1223	0.1563	0.1326
Observations	6807	7427	14234	6807	7427	14234

Notes: Standard errors in parentheses.

p<0.1, ** p<0.05, *** p<0.01

Table 5.2 Marginal Effects on Participation of Employer-sponsored Courses (2002)

	I No weight			II With weight		
	Male	Female	All	Male	Female	All
Probability of Ref. group	0.020	0.013	0.020	0.014	0.006	0.011
Atlantic Canada	0.006*	0.003	0.005**	0.005	0.004*	0.005**
	(0.004)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)
Quebec	-0.002	-0.003*	-0.003*	-0.001	-0.000	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Prairies	0.007*	0.000	0.003	0.007*	0.002	0.005**
	(0.004)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)
Alberta	0.003	0.001	0.002	0.005	0.001	0.003
	(0.003)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)
British Columbia	0.008*	0.004	0.007**	0.007	0.004*	0.006**
	(0.005)	(0.003)	(0.003)	(0.005)	(0.003)	(0.003)
Age						
35-44	-0.004	-0.000	-0.002	-0.002	0.000	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
45-54	-0.006**	-0.002	-0.004**	-0.005	0.000	-0.002
	(0.003)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)
55-64	-0.010**	-0.005**	-0.008***	-0.007*	-0.001	-0.004*
	(0.004)	(0.003)	(0.002)	(0.004)	(0.002)	(0.002)
Place of birth						
native-born	0.014***	0.005**	0.011***	0.018**	0.005**	0.012***
	(0.005)	(0.002)	(0.003)	(0.007)	(0.003)	(0.004)
Marital status						
No spouse	0.002	0.007**	0.007***	-0.003	0.004*	0.002
	(0.004)	(0.003)	(0.003)	(0.004)	(0.002)	(0.002)
Education level						
Grade 11-13 graduate	0.010**	0.013**	0.012***	0.016**	0.008**	0.013***
	(0.005)	(0.005)	(0.004)	(0.008)	(0.004)	(0.004)
PS certificate/diploma	0.027***	0.026***	0.030***	0.033***	0.020***	0.029***
	(0.008)	(0.008)	(0.006)	(0.012)	(0.008)	(0.007)

University degree	0.024***	0.040***	0.036***	0.024**	0.032***	0.031***
	(0.008)	(0.011)	(0.007)	(0.011)	(0.012)	(0.009)
Spouse's education level						
Grade 11-13 graduate	0.002	-0.001	0.001	-0.002	-0.001	-0.001
	(0.004)	(0.002)	(0.003)	(0.004)	(0.001)	(0.002)
PS certificate/diploma	0.005	0.002	0.004*	-0.000	0.001	0.001
	(0.004)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)
University degree	0.001	0.002	0.002	-0.001	0.002	0.001
	(0.004)	(0.003)	(0.003)	(0.004)	(0.002)	(0.002)
Income						
20,000-40,000	0.022***	0.010**	0.017***	0.013*	0.002	0.007**
	(0.007)	(0.004)	(0.004)	(0.007)	(0.002)	(0.003)
40,000-60,000	0.045***	0.019***	0.032***	0.032**	0.009**	0.019***
	(0.012)	(0.006)	(0.006)	(0.013)	(0.004)	(0.006)
60,000-80,000	0.077***	0.031***	0.054***	0.053***	0.015**	0.032***
	(0.018)	(0.009)	(0.010)	(0.019)	(0.007)	(0.009)
Over80,000	0.110***	0.044***	0.075***	0.074***	0.023**	0.046***
	(0.024)	(0.013)	(0.013)	(0.026)	(0.010)	(0.012)
Pre-school children						
With	0.001	-0.002	-0.001	-0.001	-0.002	-0.002
	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Union membership						
Union	-0.006**	-0.000	-0.003**	-0.002	0.000	-0.001
	(0.003)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Type of job						
Full-time job	0.009*	0.012***	0.015***	0.003	0.007**	0.009***
	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)
Job tenure						
1-6 years	0.006	0.011***	0.010***	0.003	0.007*	0.006**
	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.003)
6-10 years	0.005	0.008**	0.008**	0.006	0.005	0.006**
	(0.004)	(0.004)	(0.003)	(0.005)	(0.003)	(0.003)
10-20years	0.007	0.011**	0.011***	0.005	0.007*	0.007**
	(0.005)	(0.005)	(0.004)	(0.005)	(0.004)	(0.003)
More than 20 years	0.005	0.013**	0.011***	0.001	0.008*	0.005
	(0.004)	(0.006)	(0.004)	(0.004)	(0.005)	(0.003)

Firm size						
20-99	0.010*	0.005*	0.009***	0.009	0.002	0.005*
	(0.005)	(0.003)	(0.003)	(0.006)	(0.002)	(0.003)
100-500	0.013**	0.009**	0.013***	0.013*	0.006*	0.010**
	(0.006)	(0.004)	(0.004)	(0.008)	(0.003)	(0.004)
More than 500	0.028***	0.009**	0.019***	0.025**	0.007**	0.015***
	(0.009)	(0.004)	(0.004)	(0.011)	(0.003)	(0.005)
Industry						
Services producing	0.008**	0.003	0.007***	0.008*	0.003	0.006**
	(0.003)	(0.003)	(0.002)	(0.004)	(0.002)	(0.002)
Occupation						
Professional/managerial	0.012**	0.024***	0.014***	0.008*	0.007	0.006**
	(0.005)	(0.008)	(0.004)	(0.005)	(0.004)	(0.003)
Clerical/sales/service	-0.001	0.006	-0.002	-0.003	0.001	-0.003*
	(0.003)	(0.004)	(0.002)	(0.003)	(0.002)	(0.002)
Type of employee						
Private sector	-0.010***	-0.008***	-0.011***	-0.006*	-0.004**	-0.006***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	6807	7427	14234	6807	7427	14234

Notes: Standard errors in parentheses

Discrete change of dummy variable from 0 to 1

* p<0.1, ** p<0.05, *** p<0.01

Table 6.1 Probit Model of the Participation on Employer-sponsored Courses by Regions (2002)

	Atlantic Canada	Quebec	Ontario	Prairies	Alberta	British Columbia
Age						
35-44	-0.036	-0.190**	-0.011	-0.085	0.113	-0.013
	(0.084)	(0.079)	(0.061)	(0.088)	(0.096)	(0.109)
45-54	-0.125	-0.234***	-0.038	-0.114	0.021	-0.013
	(0.094)	(0.090)	(0.069)	(0.099)	(0.109)	(0.122)
55-64	-0.301**	-0.236**	-0.193**	-0.342***	-0.013	-0.064
	(0.120)	(0.118)	(0.089)	(0.126)	(0.147)	(0.149)
Gender						
male	0.004	-0.029	0.032	0.040	0.031	0.024
	(0.069)	(0.064)	(0.049)	(0.072)	(0.086)	(0.093)
Place of birth						
native-born	-0.111	0.509***	0.181***	0.108	0.357***	0.078
	(0.159)	(0.155)	(0.058)	(0.117)	(0.114)	(0.096)
Marital status						
No spouse	0.168	0.068	0.208**	0.217*	0.047	0.017
	(0.105)	(0.106)	(0.091)	(0.120)	(0.140)	(0.159)
Education level						
Grade 11-13 graduate	0.007	0.324**	0.320***	0.075	0.311*	0.177
	(0.118)	(0.129)	(0.104)	(0.133)	(0.159)	(0.174)
PS certificate/diploma	0.153	0.656***	0.573***	0.150	0.454***	0.326**
	(0.105)	(0.113)	(0.099)	(0.124)	(0.144)	(0.162)
University degree	0.267**	0.774***	0.514***	0.390***	0.443***	0.326*
	(0.134)	(0.135)	(0.111)	(0.143)	(0.170)	(0.188)
Spouse's education level						
Grade 11-13 graduate	-0.053	-0.028	0.090	0.138	-0.111	-0.066
	(0.123)	(0.128)	(0.100)	(0.132)	(0.160)	(0.180)
PS certificate/diploma	0.088	0.005	0.164*	0.077	0.013	0.020
	(0.104)	(0.107)	(0.090)	(0.119)	(0.141)	(0.159)
University degree	0.053	-0.167	0.178*	0.009	0.081	-0.088
	(0.133)	(0.131)	(0.105)	(0.141)	(0.167)	(0.188)
Income						
20,000-40,000	0.173	0.280**	0.235**	0.479***	0.402**	0.219

	(0.112)	(0.128)	(0.109)	(0.144)	(0.179)	(0.181)
40,000-60,000	0.380***	0.521***	0.454***	0.507***	0.340*	0.499***
	(0.118)	(0.134)	(0.109)	(0.149)	(0.184)	(0.182)
60,000-80,000	0.550***	0.750***	0.566***	0.824***	0.431**	0.681***
	(0.136)	(0.147)	(0.114)	(0.161)	(0.190)	(0.193)
Over80,000	0.603***	0.835***	0.754***	0.978***	0.687***	0.769***
	(0.146)	(0.155)	(0.116)	(0.167)	(0.191)	(0.202)
Pre-school children						
With	-0.125	-0.162*	-0.064	0.230**	0.128	-0.020
	(0.094)	(0.089)	(0.068)	(0.097)	(0.107)	(0.122)
Union membership						
Union	0.010	-0.179**	-0.021	-0.104	-0.067	-0.015
	(0.083)	(0.073)	(0.056)	(0.081)	(0.097)	(0.104)
Type of job						
Full-time job	0.368***	0.428***	0.150**	0.252***	0.149	0.050
	(0.092)	(0.088)	(0.067)	(0.093)	(0.118)	(0.114)
Job tenure						
1-6 years	0.216**	0.149	0.242***	0.233**	0.041	0.047
	(0.098)	(0.096)	(0.072)	(0.105)	(0.110)	(0.128)
6-10 years	0.240**	0.209**	0.082	0.179	0.108	-0.055
	(0.112)	(0.104)	(0.083)	(0.116)	(0.130)	(0.145)
10-20years	0.364***	0.128	0.190**	0.149	0.090	0.083
	(0.107)	(0.106)	(0.079)	(0.116)	(0.131)	(0.141)
More than 20 years	0.248**	0.125	0.193**	0.404***	0.019	-0.075
	(0.122)	(0.116)	(0.092)	(0.125)	(0.153)	(0.171)
Firm size						
20-99	-0.025	0.105	0.141*	0.287**	0.275**	0.188
	(0.112)	(0.106)	(0.081)	(0.112)	(0.137)	(0.142)
100-500	0.049	0.261**	0.155*	0.181	0.348***	0.441***
	(0.112)	(0.105)	(0.082)	(0.111)	(0.131)	(0.135)
More than 500	0.179**	0.371***	0.273***	0.190**	0.405***	0.495***
	(0.089)	(0.090)	(0.066)	(0.095)	(0.109)	(0.116)
Industry						
Services producing	0.210**	0.383***	0.050	-0.061	0.027	0.199
	(0.100)	(0.087)	(0.064)	(0.102)	(0.102)	(0.126)
Occupation						

Professional/managerial	0.134	-0.003	0.392***	0.332***	0.180	0.314**
	(0.110)	(0.100)	(0.075)	(0.117)	(0.118)	(0.141)
Clerical/sales/service	-0.183*	-0.241**	0.070	0.194*	-0.170	-0.085
	(0.109)	(0.100)	(0.077)	(0.117)	(0.123)	(0.147)
Type of employee						
Private sector	-0.406***	-0.207***	-0.331***	-0.346***	-0.439***	-0.214**
	(0.078)	(0.077)	(0.056)	(0.080)	(0.095)	(0.102)
Constant	-1.407***	-2.736***	-2.260***	-1.941***	-1.956***	-1.795***
	(0.245)	(0.257)	(0.186)	(0.261)	(0.286)	(0.305)
LR chi^2	485.66	499.06	670.36	307.98	203.15	191.68
Prob > chi^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.1713	0.1594	0.1299	0.1216	0.1107	0.1238
Observations	2425	2764	4272	2036	1495	1242

Notes: Standard errors in parentheses

* p<.1, ** p<0.05, *** p<0.01

Table 6.2 Marginal Effects on Participation of Employer-sponsored Courses by Regions (2002)

	Atlantic Canada	Quebec	Ontario	Prairies	Alberta	British Columbia
Probability of Ref. group	0.080	0.003	0.012	0.026	0.025	0.036
Age						
35-44	-0.005	-0.001	-0.000	-0.005	0.007	-0.001
	(0.012)	(0.001)	(0.002)	(0.006)	(0.007)	(0.009)
45-54	-0.017	-0.002	-0.001	-0.006	0.001	-0.001
	(0.015)	(0.001)	(0.002)	(0.007)	(0.007)	(.)
55-64	-0.036*	-0.002	-0.005	-0.015	-0.001	-0.005
	(0.020)	(0.001)	(0.003)	(0.010)	(0.009)	(0.012)
Gender						
male	0.001	-0.000	0.001	0.003	0.002	0.002
	(0.010)	(0.001)	(0.002)	(0.005)	(0.005)	(0.008)
Place of birth						
native-born	-0.015	0.010*	0.007**	0.007	0.030*	0.007
	(0.024)	(0.005)	(0.003)	(0.008)	(0.016)	(0.008)
Marital status						
No spouse	0.028	0.001	0.008*	0.016	0.003	0.001
	(0.019)	(0.001)	(0.004)	(0.011)	(0.009)	(0.013)
Education level						
Grade 11-13 graduate	0.001	0.005	0.014**	0.005	0.025	0.016
	(0.018)	(0.004)	(0.007)	(0.009)	(0.017)	(0.018)
PS certificate/diploma	0.025	0.016*	0.034***	0.011	0.041*	0.035
	(0.019)	(0.009)	(0.012)	(0.010)	(0.022)	(0.022)
University degree	0.047	0.022*	0.028**	0.034*	0.040*	0.035
	(0.029)	(0.013)	(0.011)	(0.020)	(0.024)	(0.025)
Spouse's education level						
Grade 11-13 graduate	-0.008	-0.000	0.003	0.010	-0.006	-0.005
	(0.018)	(0.001)	(0.004)	(0.010)	(0.009)	(0.014)
PS certificate/diploma	0.014	0.000	0.006	0.005	0.001	0.002
	(0.017)	(0.001)	(0.004)	(0.008)	(0.008)	(0.013)
University degree	0.008	-0.001	0.007	0.001	0.005	-0.006
	(0.021)	(0.001)	(0.005)	(0.009)	(0.011)	(0.014)

Income						
20,000-40,000	0.029	0.004	0.010*	0.046**	0.035*	0.021
	(0.020)	(0.003)	(0.005)	(0.021)	(0.021)	(0.019)
40,000-60,000	0.073**	0.010	0.024**	0.050**	0.028	0.061*
	(0.031)	(0.007)	(0.009)	(0.024)	(0.019)	(0.033)
60,000-80,000	0.116***	0.020*	0.033***	0.106**	0.038*	0.096**
	(0.043)	(0.012)	(0.013)	(0.043)	(0.023)	(0.047)
Over80,000	0.131***	0.026*	0.054***	0.142***	0.077**	0.116**
	(0.049)	(0.015)	(0.019)	(0.052)	(0.037)	(0.055)
Pre-school children						
With	-0.017	-0.001	-0.002	0.017	0.009	-0.002
	(0.014)	(0.001)	(0.002)	(0.011)	(0.008)	(0.010)
Union membership						
Union	0.002	-0.001	-0.001	-0.006	-0.004	-0.001
	(0.012)	(0.001)	(0.002)	(0.005)	(0.006)	(0.008)
Full-time job	0.070**	0.007	0.006	0.019	0.010	0.004
	(0.028)	(0.005)	(0.004)	(0.012)	(0.010)	(0.010)
Job tenure						
1-6 years	0.037*	0.002	0.010*	0.018	0.003	0.004
	(0.022)	(0.002)	(0.005)	(0.012)	(0.007)	(0.011)
6-10 years	0.042	0.003	0.003	0.013	0.007	-0.004
	(0.027)	(0.002)	(0.003)	(0.011)	(0.010)	(0.011)
10-20years	0.069**	0.001	0.007	0.010	0.006	0.007
	(0.033)	(0.002)	(0.005)	(0.010)	(0.010)	(0.014)
More than 20 years	0.043	0.001	0.007	0.036	0.001	-0.006
	(0.029)	(0.002)	(0.005)	(0.022)	(0.009)	(0.012)
Firm size						
20-99	-0.004	0.001	0.005	0.023	0.021	0.018
	(0.016)	(0.002)	(0.004)	(0.015)	(0.016)	(0.017)
100-500	0.007	0.004	0.006	0.013	0.029	0.052
	(0.018)	(0.003)	(0.004)	(0.011)	(0.020)	(0.031)
More than 500	0.030	0.006	0.012**	0.014	0.035*	0.060*
	(0.019)	(0.004)	(0.006)	(0.011)	(0.021)	(0.034)
Industry						
Services producing	0.036*	0.006	0.002	-0.003	0.002	0.019

	(0.021)	(0.004)	(0.002)	(0.006)	(0.006)	(0.015)
Occupation						
Professional/managerial	0.022	-0.000	0.019**	0.028	0.013	0.033
	(0.020)	(0.001)	(0.008)	(0.017)	(0.012)	(0.024)
Clerical/sales/service	-0.024	-0.002	0.002	0.014	-0.008	-0.006
	(0.016)	(0.001)	(0.003)	(0.011)	(0.007)	(0.011)
Type of employee						
Private sector	-0.045**	-0.001	-0.007**	-0.015	-0.017	-0.014
	(0.020)	(0.001)	(0.004)	(0.009)	(0.011)	(0.011)
Observations	2425	2764	4272	2036	1495	1242

Notes: Standard errors in parentheses

Discrete change of dummy variable from 0 to 1

* p<0.1, ** p<0.05, *** p<0.01

Table 7.1 Probit Model of the Participation on Employer-sponsored Courses by Regions (2002)-weighted

	Atlantic Canada	Quebec	Ontario	Prairies	Alberta	British Columbia
Age						
35-44	-0.012	-0.121	-0.012	-0.085	0.125	0.018
	(0.095)	(0.103)	(0.081)	(0.099)	(0.116)	(0.128)
45-54	-0.055	-0.170	-0.061	-0.107	-0.017	-0.005
	(0.105)	(0.117)	(0.091)	(0.110)	(0.128)	(0.134)
55-64	-0.248*	-0.080	-0.238**	-0.248*	0.105	-0.106
	(0.142)	(0.157)	(0.118)	(0.145)	(0.174)	(0.176)
Gender						
male	-0.024	-0.127	0.013	0.016	0.055	-0.008
	(0.077)	(0.083)	(0.065)	(0.082)	(0.101)	(0.108)
Place of birth						
native-born	-0.012	0.567***	0.294***	0.144	0.452***	0.129
	(0.184)	(0.178)	(0.072)	(0.134)	(0.126)	(0.107)
Marital status						
No spouse	0.077	-0.010	0.193	0.297**	0.100	-0.180
	(0.118)	(0.140)	(0.120)	(0.132)	(0.156)	(0.188)
Education level						
Grade 11-13 graduate	0.002	0.571***	0.420***	-0.032	0.302*	0.054
	(0.134)	(0.163)	(0.136)	(0.152)	(0.173)	(0.199)
PS certificate/diploma	0.123	0.919***	0.671***	0.064	0.424***	0.262
	(0.124)	(0.148)	(0.126)	(0.143)	(0.158)	(0.185)
University degree	0.216	1.157***	0.560***	0.339**	0.438**	0.145
	(0.155)	(0.180)	(0.143)	(0.163)	(0.191)	(0.218)
Spouse's education level						
Grade 11-13 graduate	-0.130	-0.165	0.076	0.221	-0.186	-0.238
	(0.133)	(0.170)	(0.126)	(0.145)	(0.174)	(0.216)
PS certificate/diploma	0.057	-0.072	0.117	0.074	0.102	-0.161
	(0.114)	(0.134)	(0.113)	(0.130)	(0.156)	(0.191)
University degree	0.061	-0.158	0.233*	0.028	0.109	-0.324
	(0.146)	(0.168)	(0.135)	(0.154)	(0.180)	(0.218)

Income						
20,000-40,000	0.056	0.371**	0.064	0.445***	0.343*	0.090
	(0.137)	(0.160)	(0.152)	(0.155)	(0.197)	(0.228)
40,000-60,000	0.333**	0.542***	0.369**	0.554***	0.409**	0.374*
	(0.140)	(0.169)	(0.148)	(0.161)	(0.202)	(0.220)
60,000-80,000	0.447***	0.897***	0.456***	0.904***	0.468**	0.516**
	(0.156)	(0.185)	(0.156)	(0.175)	(0.206)	(0.236)
Over80,000	0.482***	0.911***	0.644***	1.044***	0.674***	0.677***
	(0.169)	(0.195)	(0.158)	(0.178)	(0.210)	(0.243)
Pre-school children						
With	-0.097	-0.120	-0.151*	0.202*	0.142	-0.064
	(0.108)	(0.113)	(0.086)	(0.108)	(0.124)	(0.143)
Union membership						
Union	0.011	-0.090	0.029	-0.080	-0.083	-0.036
	(0.091)	(0.095)	(0.075)	(0.092)	(0.112)	(0.118)
Full-time job	0.462***	0.411***	0.154*	0.300***	0.181	0.076
	(0.102)	(0.114)	(0.085)	(0.105)	(0.147)	(0.134)
Job tenure						
1-6 years	0.199*	0.186	0.194**	0.279**	0.033	0.154
	(0.106)	(0.124)	(0.096)	(0.116)	(0.131)	(0.143)
6-10 years	0.278**	0.297**	0.127	0.178	0.145	0.028
	(0.124)	(0.132)	(0.106)	(0.128)	(0.147)	(0.172)
10-20years	0.344***	0.215	0.194*	0.185	0.069	0.170
	(0.120)	(0.136)	(0.105)	(0.128)	(0.150)	(0.160)
More than 20 years	0.195	0.216	0.139	0.395***	0.024	-0.053
	(0.134)	(0.145)	(0.121)	(0.136)	(0.178)	(0.186)
Firm size						
20-99	-0.135	0.101	0.203*	0.234*	0.122	0.161
	(0.121)	(0.134)	(0.105)	(0.129)	(0.158)	(0.162)
100-500	0.015	0.363***	0.222**	0.029	0.349**	0.391**
	(0.128)	(0.132)	(0.109)	(0.127)	(0.146)	(0.159)
More than 500	0.150	0.496***	0.300***	0.130	0.412***	0.463***
	(0.100)	(0.111)	(0.086)	(0.106)	(0.125)	(0.135)
Industry						
Services producing	0.181	0.497***	0.030	-0.109	0.099	0.264*

	(0.114)	(0.115)	(0.083)	(0.111)	(0.121)	(0.150)
Occupation						
Professional/managerial	0.079	-0.162	0.314***	0.343***	0.094	0.311**
	(0.125)	(0.133)	(0.099)	(0.128)	(0.137)	(0.159)
Clerical/sales/service	-0.254**	-0.350***	-0.012	0.258**	-0.205	-0.165
	(0.125)	(0.130)	(0.100)	(0.127)	(0.150)	(0.169)
Type of employee						
Private sector	-0.487***	-0.033	-0.331***	-0.359***	-0.425***	-0.250**
	(0.084)	(0.101)	(0.077)	(0.092)	(0.107)	(0.114)
Constant	-1.277***	-3.338***	-2.299***	-1.951***	-2.114***	-1.508***
	(0.285)	(0.319)	(0.228)	(0.278)	(0.323)	(0.358)
Wald chi^2	282.31	331.21	391.43	232.60	145.26	127.17
Prob > chi^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.1698	0.1837	0.1354	0.1238	0.1184	0.1270
Observations	2425	2764	4272	2036	1495	1242

Notes: Standard errors in parentheses

* p<.1, ** p<0.05, *** p<0.01

Table 7.2 Marginal Effects on Participation of Employer-sponsored Courses by Regions (2002)-weighted

	Atlantic Canada	Quebec	Ontario	Prairies	Alberta	British Columbia
Probability of Ref. group	0.1009	0.0004	0.0107	0.0255	0.0172	0.0658
Age						
35-44	-0.002	-0.000	-0.000	-0.005	0.006	0.002
	(0.017)	(0.000)	(0.002)	(0.006)	(0.007)	(0.017)
45-54	-0.009	-0.000	-0.002	-0.006	-0.001	-0.001
	(0.019)	(0.000)	(0.003)	(0.007)	(0.005)	(0.017)
55-64	-0.037	-0.000	-0.005	-0.012	0.005	-0.013
	(0.026)	(0.000)	(0.004)	(0.009)	(0.009)	(0.022)
Gender						
male	-0.004	-0.000	0.000	0.001	0.003	-0.001
	(0.013)	(0.000)	(0.002)	(0.005)	(0.005)	(0.014)
Place of birth						
native-born	-0.002	0.002	0.012*	0.010	0.031*	0.018
	(0.032)	(0.002)	(0.006)	(0.009)	(0.018)	(0.018)
Marital status						
No spouse	0.014	-0.000	0.007	0.024	0.005	-0.020
	(0.022)	(0.000)	(0.005)	(0.015)	(0.007)	(0.025)
Education level						
Grade 11-13 graduate	0.000	0.002	0.019*	-0.002	0.018	0.007
	(0.024)	(0.002)	(0.011)	(0.009)	(0.015)	(0.026)
PS certificate/diploma	0.024	0.007	0.041**	0.004	0.028	0.041
	(0.025)	(0.006)	(0.018)	(0.009)	(0.020)	(0.031)
University degree	0.044	0.014	0.030**	0.028	0.030	0.021
	(0.035)	(0.011)	(0.015)	(0.019)	(0.023)	(0.032)
Spouse's education level						
Grade 11-13 graduate	-0.021	-0.000	0.002	0.016	-0.007	-0.025
	(0.022)	(0.000)	(0.004)	(0.014)	(0.007)	(0.028)
PS certificate/diploma	0.010	-0.000	0.004	0.005	0.005	-0.018
	(0.021)	(0.000)	(0.004)	(0.009)	(0.008)	(0.025)
University degree	0.011	-0.000	0.009	0.002	0.005	-0.032

	(0.028)	(0.000)	(0.006)	(0.010)	(0.009)	(0.029)
Income						
20,000-40,000	0.010	0.001	0.002	0.041*	0.021	0.012
	(0.025)	(0.001)	(0.005)	(0.022)	(0.015)	(0.032)
40,000-60,000	0.072**	0.002	0.016*	0.056*	0.027	0.063
	(0.036)	(0.002)	(0.009)	(0.029)	(0.019)	(0.044)
60,000-80,000	0.102**	0.007	0.022*	0.122**	0.033	0.095
	(0.046)	(0.006)	(0.012)	(0.053)	(0.021)	(0.059)
Over80,000	0.112**	0.007	0.038**	0.157**	0.058*	0.137*
	(0.052)	(0.007)	(0.019)	(0.062)	(0.033)	(0.073)
Pre-school children						
With	-0.016	-0.000	-0.004	0.015	0.007	-0.008
	(0.019)	(0.000)	(0.003)	(0.011)	(0.008)	(0.017)
Union membership						
Union	0.002	-0.000	0.001	-0.004	-0.003	-0.005
	(0.016)	(0.000)	(0.002)	(0.005)	(0.005)	(0.015)
Full-time job	0.107***	0.001	0.005	0.024	0.009	0.010
	(0.040)	(0.001)	(0.004)	(0.016)	(0.010)	(0.019)
Job tenure						
1-6 years	0.040	0.000	0.007	0.022	0.001	0.022
	(0.027)	(0.001)	(0.005)	(0.014)	(0.006)	(0.025)
6-10 years	0.058	0.001	0.004	0.013	0.007	0.004
	(0.036)	(0.001)	(0.004)	(0.012)	(0.010)	(0.023)
10-20years	0.075*	0.000	0.007	0.013	0.003	0.025
	(0.040)	(0.001)	(0.006)	(0.012)	(0.008)	(0.029)
More than 20 years	0.039	0.000	0.005	0.034	0.001	-0.006
	(0.034)	(0.001)	(0.005)	(0.022)	(0.008)	(0.023)
Firm size						
20-99	-0.022	0.000	0.007	0.017	0.006	0.023
	(0.020)	(0.000)	(0.006)	(0.014)	(0.009)	(0.027)
100-500	0.003	0.001	0.008	0.002	0.022	0.066
	(0.023)	(0.001)	(0.006)	(0.008)	(0.018)	(0.043)
More than 500	0.029	0.002	0.012*	0.009	0.027	0.082*
	(0.023)	(0.002)	(0.007)	(0.009)	(0.020)	(0.047)
Industry						

Services producing	0.036	0.002	0.001	-0.006	0.005	0.041
	(0.025)	(0.002)	(0.002)	(0.007)	(0.007)	(0.032)
Occupation						
Professional/managerial	0.015	-0.000	0.013	0.028	0.004	0.050
	(0.024)	(0.000)	(0.008)	(0.019)	(0.007)	(0.035)
Clerical/sales/service	-0.038*	-0.000	-0.000	0.020	-0.007	-0.019
	(0.023)	(0.000)	(0.003)	(0.015)	(0.007)	(0.022)
Type of employee						
Private sector	-0.062**	-0.000	-0.006	-0.015	-0.012	-0.026
	(0.029)	(0.000)	(0.004)	(0.010)	(0.009)	(0.020)
Observations	2425	2764	4272	2036	1495	1242

Notes: Standard errors in parentheses

Discrete change of dummy variable from 0 to 1

* p<0.1, ** p<0.05, *** p<0.01