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ABSTRACT

Immigrants and Workplace Training: Evidence from Canadian Linked Employer Employee Data*

Job training is one of the most important aspects of skill formation and human capital accumulation. In this study we use longitudinal Canadian linked employer-employee data to examine whether white/visible minority immigrants and Canadian-borns experience different opportunities in two well-defined measures of firm-sponsored training: on-the-job training and classroom training. While we find no differences in on-the-job training between different groups, our results suggest that visible minority immigrants are significantly less likely to receive classroom training, and receive fewer and shorter classroom training courses, an experience that is not shared by white immigrants. For male visible minority immigrants, these gaps are entirely driven by their differential sorting into workplaces with less training opportunities. For their female counterparts however, they are mainly driven by differences that emerge within workplaces. We find no evidence that years spent in Canada or education level can appreciably reduce these gaps. Accounting for potential differences in career paths and hierarchical level also fails to explain these differences. We find however that these gaps are only experienced by visible minority immigrants who work in the for-profit sector, with those in the non-profit sector experiencing positive or no gaps in training. Finally, we show that other poor labor market outcomes of visible minority immigrants, including their wages and promotion opportunities, stem in part from these training gaps.

JEL Classification: J24, L22, M53

Keywords: immigrants, wages, firm-sponsored training, linked employer-employee data

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1 Introduction

There is an extensive literature in economics that suggests immigrants, especially visible minority (or non-white) immigrants[1], experience considerable disadvantages in the labour market compared to their native-born peers, and often do not fully assimilate into the labour market even a few decades after immigration.[2] There also exists evidence that suggests occupational downgrading of immigrants in the host country, which generates significant mismatch between immigrants' qualifications and their jobs, is one of the main factors contributing to their adverse labour market outcomes and slow labour market integration (e.g. Abramitzky et al. [2014]; Chiswick et al. [2005]; Dustmann and Fabbri [2005]; Green [1999]; Kaushal et al. [2016]).

For example, a recent Canadian study by Uppal and LaRochelle-Côté [2014] finds that "among university-educated immigrants who did not graduate in Canada or the United States, 43% of women and 35% of men worked in occupations requiring a high school education or less. In comparison, the same rates for the Canadian-born and for immigrants who graduated in Canada or the U.S. varied between 15% and 20%." Another study by Reitz et al. [2014] finds that despite dramatic increase in the proportion of immigrants with university degrees in Canada, they remain at a substantial disadvantage in getting access to managerial and professional occupations relative to Canadian-borns. The same study estimates that between 1996 and 2006

[1]Different countries use different terms to refer to their non-white/non-European population. In Canada, they are referred to as "visible minority", which is defined as "persons, other than Aboriginal people, who are non-Caucasian in race or non-white in colour. The visible minority population in Canada consists mainly of the following groups: Chinese, South Asian, Black, Arab, West Asian, Filipino, Southeast Asian, Latin American, Japanese and Korean." (Statistics Canada [2015]). The United States' equivalent classification - "people of color" - is somehow similar. However, it also includes Aboriginal Americans and African-Americans, and often excludes people from the Middle East who are categorized as Caucasian in the US.

[2]This extensive literature includes studies from different countries including **Canada**: Akbari [1992]; Baker and Benjamin [1997]; Christofides and Swidinsky [1994]; Howland and Sakellariou [1993]; Hum and Simpson [1999]; Li [2001]; Lian and Matthews [1998]; Pendakur and Pendakur [1998]; Pendakur and Woodcock [2010]; Stelcner and Kyriazis [1995]; Swidinsky and Swidinsky [2002]; **Europe**: Adsera and Chiswick [2007]; Aeberhardt and Pouget [2010]; Bauer and Zimmermann [1997]; Bell [1997]; Chiswick [1980]; Dustmann and Fabbri [2003]; Schmidt [1997]; Silberman and Fournier [2007]; and the **US**: Borjas [1985, 1991]; Chiswick [1986]; Smith [1990]; Trejo [1997]; see also Heath and Cheung [2007] for a comprehensive study of thirteen countries.

"the value of work lost to the Canadian economy from immigrant skill under-utilization grew from about $4.80 billion to $11.37 billion, annually."

One way out of this under-utilization and to improve immigrants labor market outcomes is accumulation of additional skills in the post-migration period (Borjas [2015]). There exists growing evidence from different countries that suggests obtaining further formal education in the host country after arrival provides compounded benefits for immigrants in terms of labor market outcomes (Banerjee et al. [2009]; Bratsberg and Ragan [2002]; Duvander [2001]; Ferrer and Riddell [2008]; Friedberg [2000]; Gilmore and Le Petit [2008]; Li [2001]; Van Tubergen and Van De Werfhorst [2007]). These benefits seem to be well-understood by immigrants. Adamuti-Trache and Sweet [2010] report that "two-thirds of the immigrants who arrived in Canada between October 2000 and September 2001 indicated they had plans to pursue education and training in Canada." However, financial and time constraints faced by many immigrants could also limit their ability to acquire further formal education in the host country.

Alternatively, accumulation of skills and human capital through firm-sponsored training is another feasible mechanism that could help expedite and improve immigrants' labor market integration and play a crucial role in their long-run labour market success through better promotional opportunities and higher occupational attainments. Training could also improve immigrants' labour market outcomes through reducing the employers' discounting of their foreign credentials, as well as activating their human capital in a manner that is more compatible to the needs of the labour market.

In this study we therefore focus on an important but less-studied labor market issue related to immigrants: their access to firm-sponsored training (Duleep [2015]). This remains an under-studied topic even though job training is one of the most important aspects of skill formation and human capital accumulation. Heckman et al. [1998] estimate that post-school investment, including job training, accounts for more than half of lifetime human capital accumulation. Training, if designed effectively and targeted correctly, is also found to alleviate inequality by reducing the skill gap, and consequently the earnings gap, between high-skilled and low-skilled workers (Heckman

[2000]). There is also evidence that suggests training has significant impacts on worker productivity (e.g. Bartel [1994]; Dostie [2013]), innovation (e.g. Bauernschuster et al. [2009]; Dostie [2018]), and wages and voluntary turnover (e.g. Brown [1990]; Lillard and Tan [1992]; Lynch [1992]). There also exists some limited evidence, reviewed in more detail in the next section, suggesting that immigrant's access to training programs can significantly improve their employment and earnings opportunities, as well as decrease their reliance on social benefits (Park [2011]; Sarvimäki and Hämäläinen [2016]; Yoshida and Smith [2005]) .

Using a longitudinal Canadian survey of workplaces and their employees from 1999 to 2006, we estimate native-immigrant differences in probability, duration, and intensity of two clearly-defined training measures: on-the-job training (OJT) and classroom training (CLT). We distinguish between visible minority and white workers in our analysis. This is due to the extensive evidence from Canada and other countries documenting systematic and significant differences between visible minority and white native-borns/immigrants in several labour market outcomes such as employability, wages, and promotion opportunities. We also use the richness of our data to examine potential differences in the main subject of training. This could help to shed more light on the underlying mechanisms behind potential differences in training, and areas in which they are more likely to emerge.

We find that relative to white Canadian-borns, white immigrants mostly experience similar opportunities in both OJT and CLT. This experience, however, is not shared by visible minority immigrants for the most part. We find that visible minority immigrants of both genders experience significant disadvantages in probability of receiving CLT as well as in its duration and intensity. More specifically, and after controlling for detailed observed characteristics including occupation, industry, and tenure with employer, visible minority immigrants are around 7-8 percentage points less likely to receive CLT, and receive around 19% fewer and 24% shorter CLT courses. This is despite the fact that visible minority immigrants are around 3-4 percentage points less likely to turn down job-related training offers by their employer.

On the positive side, we find that second-and-higher-generation visible minority immigrants (i.e. visible minority Canadian-borns) are in a better position relative to visible minority immigrants. More specifically, compared to female (male) white Canadian-borns, female (male) visible minority Canadian-borns are similarly likely (more likely) to receive CLT. They also enjoy the highest probability of receiving OJT, even compared to white Canadian-borns. Their higher probability of CLT, however, is somehow offset by shorter CLT courses they receive. Both visible minority immigrants and visible minority Canadian-borns, however, share the disadvantage of being less likely to receive (financial) help from their employer to take career development courses outside paid working hours.

Taking advantage of the linked employer-employee aspect of our data, we distinguish between two distinct mechanisms contributing to these differences. More specifically, economy-wide disparities in training opportunities experienced by visible minority immigrants could be driven by differences that emerge within the same workplace (i.e. a within-workplace mechanism). In contrast, even in the absence of within-workplace differences in training opportunities, such disparities could still emerge from differential sorting of visible minority immigrants into workplaces that on average offer more limited training opportunities to their workers (i.e. a between-workplace mechanism). Distinguishing between these two mechanisms is important because they are driven by different factors and also have different policy implications.

For example, measuring the extent to which these disparities operate between workplaces allows us to better understand the role of search frictions that limit the between-firm mobility of immigrants. Aydemir and Skuterud [2008] find that the native-immigrant pay gap in Canada can be largely explained by differences in employers as Canadian-borns tend to be employed in higher-wage firms. This suggests that immigrants may face barriers to mobility keeping them in jobs with low-paying firms. Similar barriers could also limit their access to training opportunities.[3] We

[3] Along these lines, Oreopoulos [2011] in a resume field experiment finds that the resumes of skilled visible minority immigrants in Canada were less likely to elicit contacts from potential employers than

find that for male visible minorities, there is no within-workplace gap in probability of receiving CLT and the economy-wide gap is entirely driven by their differential sorting into workplaces that offer less training opportunities. For female visible minority immigrants however, within-workplace disparities in training seem to be mainly responsible for their adverse training opportunities.[4]

Further exploring other dimensions behind these disparities, we find no evidence that years spent in Canada or higher levels of education help improve the adverse training opportunities faced by visible minority immigrants. Moreover, including a rich set of variables to account for potential differences in career paths or hierarchical levels between visible minority immigrants and white Canadian-borns also fails to appreciably explain these large disparities.

We find however a strong relationship between the choice of employment in the for-profit versus non-profit sector and training disparities. More specifically, we find that the lower CLT opportunities faced by visible minority immigrants almost entirely operates in the for-profit sector, with visible minority immigrants in the non-profit sector face similar or better CLT opportunities relative to their white Canadian-born peers. This is consistent with growing evidence of greater equity and diminished differences by gender, race, and sexual orientation in the non-profit sector found by other studies (e.g. Dostie and Javdani [2018]; Leete [2000, 2001]; Lewis [2010]; Preston [1989, 1990]; Preston and Sacks [2010])

Finally, we examine how other poor labour market outcomes of visible minority immigrants, including wages and promotion opportunities, are associated with these training gaps. Our results from Oaxaca-Blinder decomposition suggest that differences in training opportunities between male (female) visible minority immigrants and white Canadian-borns explain 5 (13) percent of the average wage gap between them. Moreover, we find that receiving CLT is on average associated with around 3.4 percentage

resumes from similar Canadian-borns. Bowlus et al. [2016] also provide evidence of frictions faced by immigrants to Canada in a structural model of job search.

[4]This is specially true in the for-profit sector, which drives almost the entire gap experienced by visible minority immigrants

points higher probability of promotion. Our results suggest, however, that for visible minority immigrants and visible minority Canadian-borns, receiving CLT does not have the same boosting impact on probability of promotion enjoyed by white immigrants and white Canadian-borns. Although, CLT seems to at least mitigate (some of) their disadvantaged position in probability of receiving promotion, which is well-documented in other studies (Javdani [2018]; Javdani and McGee [2018]).

The remainder of the paper is organized as follows. Section 2 provides a review of the literature. Section 3 discusses the data. Section 4 presents our main findings regarding differences in training opportunities. Section 5 explores some of the potential mechanisms by examining heterogeneity patterns. Section 6 investigates the role of documented training differences in wage gaps and promotion opportunities. Finally, Section 7 concludes.

2 Literature Review

Immigrants worse labour market outcomes compared to native-borns are well documented across the world including in Canada. Given the importance of job training in skill formation and human capital accumulation and activation, access to work-related training is perhaps one of the key factors that could be identified as both a curse for immigrants' current disadvantaged labour market position (due to their limited access) as well as a potential cure to raise their performance (by improving their access). However, as previously mentioned, there is limited evidence on the existence and magnitude of potential gaps in this especially important mechanism facilitating immigrants' integration into the labor market.

Most of the (limited) evidence on training disadvantages faced by immigrants comes from Anglos-saxons countries like Britain (Shields and Wheatley Price [1999]), Australia (VandenHeuvel and Wooden [1997]), or Ireland (Barrett et al. [2013]). An interesting finding from this literature is that immigrants perform especially worse when they come from a country speaking a different language than the host country.

VandenHeuvel and Wooden [1997] find that immigrants to Australia experience a significant training gap which is more pronounced for immigrants with less English proficiency. Using decomposition methods, they cannot rule out that employer-based discrimination explains part of the gap. While not exactly focusing on native-immigrant training gaps, Shields and Wheatley Price [1999] do report that both visible minority and white immigrants receive less training than native-borns using Quarterly Labor Force Surveys from Britain in 1993-4. In the United States, Smith and Smith [2010] use the 2003 National Assessment of Adult Literacy to report that non-native-borns were less likely than their native-born peers to participate in training or education to improve their performance on their job.

A particularly detailed study is Barrett et al. [2013] who use the Ireland's National Employment Survey (NES), a cross-sectional linked employer-employee survey from 2006. They find that immigrants in Ireland are much less likely to receive training from their employers, stemming from both a failure to get employed by training-oriented firms and a training disadvantage compared to natives within firms where less training is provided.

In Germany, von Haaren-Giebel and Sandner [2016] find that naturalization leads immigrants to increase their participation in on-the-job training (although it continues to stay lower than the natives). They use data from the German socio-economic panel to highlight the role of naturalization as indicating the immigrants' commitment to the host country and thus identify one mechanism through which naturalization leads to better labour market outcomes. This result holds even when taking into account selection into training with propensity scores methods.

In Canada, one of the earliest studies is Hum and Simpson [2003] who use the Adult Education and Training Survey from 1998 to document that Canadian-born male workers participate in post-schooling training at a higher rate than non-Canadian-borns. However, for those who immigrated in Canada at a young age, no such gap is found. Interestingly, they find the reverse for women as foreign-born women acquired 29% more work-related training than Canadian-born women. They find no role for

language skills in explaining training participation.

Yoshida and Smith [2005] who use the same data as we do, but only the 1999/2000 cross-sections, compare access to training by visible minority immigrants, white Canadian-borns, and white immigrant, but only focus on full-time male workers. They find that immigrants, regardless of their visible minority status, receive less training than Canadian-borns, with visible minority immigrants facing a larger gap. However, in the latter case, university education is an important mitigating factor as participation in classroom training becomes higher for more educated visible minority immigrants.

More recently, Adamuti-Trache and Sweet [2010] use data from the Longitudinal Survey of Immigrants to Canada (LSIC) to examine factors that influence immigrants' decision to participate in at least one educational event (including firm-sponsored training) within two years of arrival in Canada. They find that higher human capital upon arrival, such as foreign educational credentials, language proficiency, and immigration class, are associated with higher participation.

Finally, Park [2011] uses the Access and Support to Education and Training Survey (ASETS) from 2008 and finds job-related training participation gaps experienced by both male and female immigrant, which is found to be larger for immigrants who arrived in Canada as adults. However, conditional on participating in training, the number of courses and hours are found to be similar. Perceived barriers to training by immigrants include family responsibilities and financial constraints.

In summary, native-immigrant training gaps have been documented in several countries, with explanations ranging from poor native language skills, inadequate matching in the labour market, low levels of education/skill, and employer-based discrimination. Our study contributes to this literature by highlighting that relative to white Canadian-borns, the experience of visible minority immigrants in terms of probability, intensity, and duration of training opportunities is significantly different from (and worse than) white immigrants and visible minority Canadian-borns. We also show that higher levels of education or more years in Canada do not help to appreciably mitigate these disadvantages. Our study is also the first to document that between-

versus within-workplace mechanisms play significantly different roles in driving the quantitatively similar training gaps experienced by male and female visible minority immigrants. Ours is also the first to document the startling difference in the native-immigrant training gaps between the for-profit and the non-profit sector. Finally, and to the best of our knowledge, we are the first to show the importance of these training gaps in driving other poor labour market outcomes of visible minority immigrants such as wages and promotion opportunities.

3 Data: the Workplace and Employee Survey

Our study uses the Workplace and Employee Survey (WES), a longitudinal survey of workplaces and their employees administered annually by Statistics Canada between 1999 and 2006. Every year, a representative sample of approximately 6,000 employers was surveyed. A maximum of twenty-four employees were randomly interviewed from each sampled workplace in each odd year and re-interviewed the following year.

The employee sample is representative of the Canadian workforce in the target population of employers when properly weighted, and all of our analysis incorporates sample weights from Statistics Canada. Our analysis is based on pooled 1999, 2001, 2003 and 2005 cross-sections. We do not use data from even-numbered years to avoid potential sample selection problems associated with employee attrition between the first and second interviews.

As mentioned before, in examining differences in training opportunities between immigrants and Cana-dian-borns, we distinguish between white and visible minority Canadian-borns and immigrants.[5] Extensive evidence from Canada and other countries suggests that the labour market outcomes of white and visible minority Canadian-borns/immigrants exhibit significant and systematic differences and therefore it is important to distinguish between these groups. Throughout our analysis we use white

[5]Distinguishing between whites and visible minorities is important. For example, in the case of Britain, Shields and Wheatley Price [1999] use Quarterly Labour Force Surveys to document that non-whites were offered and undertook less training than whites in Britain in 1993-4.

Canadian-borns as our reference group. We also run our analysis separately by gender to caputer any potential differences between the sample of male and female workers.

WES is an exceptionally rich data set especially when it comes to training. We therefore exploit this richness and use several dependent variables in our analysis. To examine differences in probability of receiving CLT we use an indicator that is based on the question "In the past twelve months, have you received any classroom training related to your job? Classroom training includes: (1) All training activities which have a pre-determined format, including a pre-defined objective, (2) Specific content, (3) Progress may be monitored and/or evaluated." All employees who report they received CLT were also asked about the number of different CLT courses they have taken in the past year, the duration (measured in days) of the last CLT course completed (asked to "include only the time actually spent in training sessions"). We use these two questions to construct dependent variables to examine differences in the number and the duration of courses taken.

To examine differences in probability of receiving OJT we use an indicator that is based on the question "In the past twelve months, have you received any informal training related to your job (that is on-the-job training)?" Employees who answered positive to this question were also asked the following question: "In the past twelve months, how much time in total was spent for on-the-job training? (Include only the time actually spent in training.)" We use answers to these questions to examine differences in the probability and the duration of OJT.

Employees who receive CLT and/or OJT were also asked to report the main subject of their training. We use these answers to examine differences in the subject of training received. Finally, employees in our data were also asked "In the past twelve months, was there job-related training offered to you that you decided not to take?" We use this to examine whether there are any differences in probability of rejecting a training offer.

The control variables in our regressions (reported in Table 1 for men and Table 2 for women) are: the highest level of schooling (8 categories), marital status (6 categories),

age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, an indicator for membership in a union or collective bargaining agreement, and coarse occupations (6 categories).[6] Some of our regressions also include controls for detailed occupations (47 categories), industry (14 categories), and workplace fixed effects. We also use several workplace characteristics (reported in Tables 1, 2, and in the online appendix Table A1) in some of our analysis.

4 Native-immigrant differences in training

4.1 Differences in probability of training

We first estimate linear probability models of differences in the probability of receiving CLT and OJT.Each panel of Tables 3 and 4 report results separately by gender. Each column reports results from a specification including a different set of covariates. Our most preferred specifications are the ones that include personal and job characteristics, tenure, coarse occupation, and industry (i.e. Column 6) as well as workplace fixed effects (Column 9).[7]

Starting with the sample of male workers, and conditional on worker and job characteristics in Column (2) of Tables 3, we find that both white and visible minority immigrants experience similar probabilities of receiving OJT compared to their

[6] A worker's occupation or industry may be endogenous if workers select into particular industries or occupations based on unobserved characteristics related to their training opportunities. Likewise, the worker's tenure with current employer may be endogenous insofar as it likely reflects access to training opportunities or correlation with other unobserved factors that also affect training (e.g. higher productivity, better relationship with employer, self-drive, etc.) None of these variables, however, appreciably affect the estimated differences in the probabilities of training between white Canadian-borns and the members of each minority group.

[7] We are reluctant to control for detailed occupational categories in our most preferred specifications because we consider the potential differential sorting of immigrants across different detailed occupations as a mechanism through which differences in labour market outcomes, including training opportunities, could manifest themselves as opposed to an independent explanation (Albrecht et al. [2003], Lemieux [2011])

white Canadian-born counterparts. Interestingly, however, we find that visible minority Canadian-borns are significantly more likely (around 11 percentage points) to receive OJT. As estimates reported in Columns (3) to (7) suggest, including additional control variables do not affect these results.

Results reported in Table 4 suggest that visible minority Canadian-borns men are also significantly more likely (around 9 percentage points) to receive CLT. However, the results are quite different for white and visible minority immigrants. More specifically, estimates reported in Column (2) of Table 4 suggest that white (visible minority) immigrant men are 3.3 (8.6) percentage points less likely to receive CLT. While controlling for occupation and industry renders the gap small and statistically insignificant for white immigrant men, it remains large (around 7 percentage points) and statistically significant for visible minority immigrant men.

Switching to the sample of female workers, we find somehow analogous patterns. Similar to men, visible minority Canadian-born women are also more likely to receive OJT (the difference while large is not statistically significant). However, in contrast to their male counterparts, their estimated differences in probability of receiving CLT is quantitatively small and statistically indistinguishable from zero. Results for white and visible minority immigrant women are similar to those of their male counterparts reported above. More specifically, we find no differences in probability of receiving OJT for either group. We find however that female visible minority immigrants are significantly less likely (around 9 percentage points) to receive CLT, an experience that is not shared by white immigrant women.

4.2 Differences between versus within workplaces

Significantly lower access to training opportunities experienced by visible minority immigrants and discussed above could be driven by disparities experienced within workplaces (i.e. a within-workplace mechanism). Alternatively, they could be driven by visible minority immigrants' crowding into workplaces that on average offer more

limited training opportunities to their workers (i.e. a between-workplace mechanism). There exists strong evidence that suggests sorting of workers across firms can explain a significant portion of the variation in individual wages, even after controlling for a host of observed and unobserved characteristics (Abowd et al. [1999]; Bronars and Famulari [1997]; Groshen [1991]; Lane et al. [1999]; W. T. Dickens and Katz [1987]). This differential inter-firm sorting could also be responsible for variation in other labour market outcomes such as promotions and training opportunities.[8]

Distinguishing between these two mechanisms is important because they are driven by different factors and therefore have different policy implications. If disparities in training opportunities experienced by immigrants are driven by their crowding into workplaces with fewer training opportunities, then employment equity policies that promote equal employment opportunities at different firms, or policies that could reduce the search frictions experienced by immigrants, could be more effective in mitigating these disparities. However, if within-workplace differences in training opportunities are the driving force behind these disparities, then employment equity policies will not be an effective policy tool. Similarly, pay equity policies do little to benefit immigrants if they - even while earning equal pay for equal work - are receiving fewer training opportunities and therefore are less able to climb up the latter.

We investigate the existence of such a sorting effect by taking advantage of the fact that we have access to linked employer-employee data. This allows us to estimate both economy-wide and within-workplace differences in training between different groups (i.e. models that exclude and include workplace fixed effects, respectively).[9]

[8]For example, using WES data from 1999-2001, Aydemir and Skuterud [2008] find that there is significant non-random sorting of immigrnats across workplaces within Canada's major cities and geographic regions. Their results also suggest that for men the overall native-immigrant wage differentials are more strongly influenced by this differential sorting of immigrants across workplaces than the disparities they experience within workplaces with their Canadian-born peers.

[9]Models that exclude workplace fixed effects estimate economy-wide differences in average training outcomes, $\hat{\delta}$. They capture (a) any systematic differences in sorting of immigrants and Canadian-borns into workplaces offering different training opportunities, conditional on their characteristics; (b) the correlation between immigration/ethnic status and unobserved worker characteristics related to training outcomes (also conditional on their characteristics); and (c) firms' preferences for providing training to Canadian-borns relative to immigrants. In contrast, models that include workplace fixed

For male visible minority immigrants, inclusion of workplace fixed effects in Columns (8) and (9) of Table 4 fully eliminates the estimated (economy-wide) difference in probability of receiving CLT. This implies that within the same workplaces, there exists no differences in probability of receiving CLT between visible minority immigrants and white Canadian-borns. This suggests that visible minority immigrants are disproportionately sorted into workplaces with fewer training opportunities, and it is this between-workplace mechanism that drives the economy-wide gap in CLT they experience.

For female visible minority immigrants, we find that including workplace fixed effects reduces the gap in probability of receiving CLT from 8.6 percentage points (economy-wide) to 4.6 percentage points (within workplaces). This suggests that around half of the gap experienced by female visible minority immigrants is driven by their differential sorting across firms with fewer CLT opportunities, while the other half is due to within-workplace differences. As we discuss later in Section 5, for visible minority immigrant women the role of within firm disparities is even more pronounced when we distinguish between for-profit and non-profit establishments. These results are consistent with Aydemir and Skuterud [2008] who find that for male immigrants sorting across firms plays a more important role in wage differentials they face while for female immigrants within-workplace disparities seem to be more important.

4.3 Differences in length and duration of training

Differences in probability of training may overstate or understate differences in training opportunities overall if there also exists differences in intensity and/or duration of

effects measure conditional differences in average training outcomes within workplaces, $\tilde{\delta}$ (i.e. (a) is not part of the estimated gap anymore). If $\hat{\delta} < 0$, immigrants are on average less likely to receive training (economy-wide) than Canadian-borns, conditional on their observed characteristics. If $\hat{\delta} < \tilde{\delta} <= 0$, then one average immigrants are systematically sorted into workplaces with fewer opportunities for training. If $\tilde{\delta} < \hat{\delta} <= 0$, then on average immigrants are systematically sorted into workplaces with more training opportunities. If $\tilde{\delta} = \hat{\delta} < 0$, then we can infer that the average economy-wide difference in training outcomes for immigrants relative to Canadian-borns results entirely from difference in training within workplaces rather than systematic sorting of workers into workplaces with different training opportunities.

training. We therefore estimate specifications that examine differences in the number and the length of CLT courses taken in the 12 months before the survey for those employees who received training. These results are reported in Panels (A) and (B) of Table 5. We find that male visible minority immigrants receive 0.5 fewer CLT courses, which is around 20% less compared to the average number of CLT courses received by white Canadian-born men. CLT courses received by male visible minority immigrants are also on average 0.88 days shorter, which is 23% shorter relative to white Canadian-born men, although the estimated difference is not statistically significant. White immigrant men also receive both shorter and fewer CLT courses, although the estimated gaps are smaller compared to male visible minority immigrants and only marginally statistically significant.

Turning to the sample of females, both white and visible minority immigrants receive fewer/shorter CLTs. The only exception is longer CLT received by female visible minority immigrants. However, all the estimated differences for these groups are relatively small and statistically insignificant. In line with estimated differences in probability of receiving OJT, estimates reported in Panel (C) suggest that there are no statistically significant differences in the length of OJT between groups, although quantitatively both male and female visible minority immigrants receive shorter OJT.

We also examine potential differences in the subject of training for workers who received CLT and/or OJT. This could shed more light on areas where differences in training are likely to appear, and might help identify some of underlying mechanisms contributing to differences in training. Table A3 in our online appendix summarizes results from multinomial logit models with thirteen different outcomes identifying the main subject(s) of training received by an employee.[10] These subjects include: orientation for new employees; managerial/supervisory training; professional training; apprenticeship training; sales and marketing training; computer hardware; computer software; other office or non-office equipment; group decision-making or problem-solving; team building, leadership, communication; occupational health and safety, environmental

[10] We need to pool data from both genders for these regressions otherwise our models won't converge.

protection; literacy or numeracy; and other.

We find that for both OJT and CLT, the most likely subject of training is training subjects categorized as "other", followed by computer software, professional training, and occupational health and safety. As results reported in Panel A of Table A4 suggest, compared to white Canadian-borns, or white immigrants, there are no differences in the subjects of OJT received by visible minority immigrants. However, results reported in Panel B suggest that there are some differences in subjects of CLT received by visible minority immigrants. More specifically, we find that visible minority immigrants are 12% less likely to receive CLT in "other" subjects, and 45% less likely to receive CLT in computer hardware. In contrast, they are 52% more likely to receive CLT in Occupational health and safety, and environmental protection, and 110% more likely to receive CLT in other (non-computer) office and non-office equipment.

All employees in the WES were also asked whether their employer paid or otherwise helped them to take courses for career development outside paid working hours. Estimates reported in Panel (D) of Table 5 suggest that visible minority Canadian-borns and visible minority immigrants of both genders are less likely to receive (financial) help from their employers for this type of training courses.

WES also asks employees if they voluntarily declined job-related training offers in the past year before the survey. We use the answers to this question to examine to what extent adverse training opportunities experienced by visible minority immigrants are driven by their reluctance to take up training opportunities, for example due to language problems. Results reported in Panel (E) of Table 5 suggest that if anything, visible minority immigrants of both genders are 3-4 percentage points less likely to turn down training offers. This suggests that the better training opportunities experienced by white Canadian-borns and discussed before are in spite of the fact that they are more likely to voluntarily turn down training offers. In other words, taking into account white Canadian-borns' higher probability of turning down training offers will result in even larger gaps in training opportunities experienced by visible minority immigrants.

4.4 Differences in training: summing up

The overall picture that emerges from results discussed above suggests that visible minority immigrants are the most disadvantaged group in terms of training opportunities. Relative to white Canadian-borns, they are significantly less likely to receive CLT, and receive fewer/shorter CLT courses, even though they are less likely to turn down training opportunities. They are also less likely to receive (financial) help from their employer to take career development courses outside paid working hours.

While white immigrants also seem to face some adverse training outcomes compared to their Canadian-born counterparts, the disparities experienced by visible minority immigrants are larger and more systematic. This is of course consistent with evidence from other studies that suggests visible minority immigrants are also the most disadvantaged group in the Canadian labour market in terms of other labour market outcomes such as wages or promotion opportunities (e.g. Javdani and McGee [2018], Pendakur and Woodcock [2010]). On the positive side however, our results suggest that second-and-higher generation visible minority immigrants (i.e. visible minority Canadian-borns) do not face the same disadvantages and if anything are in a better position in terms of access to training opportunities compared to white Canadian-borns.

Given that training opportunities could play an important role in improving wages and promotion opportunities, We will directly investigate the link between training opportunities and differences in wages and promotion outcomes between Canadian-borns and immigrants in Section 6. However, before doing so, we consider some of the potential mechanisms that could drive the documented differences in training opportunities. We will spend the rest of our analysis focusing on CLT. This is partly due to the fact that, as discussed above, immigrants in our sample do not experience significant differences in probability and length of OJT. In addition, CLT is documented to have a more productivity-enhancing effects and a larger impact on wages (Barrett and O'Connell [2001]; Black and Lynch [1996]; Dostie [2013]; Zwick [2005]) and is therefore a more important training measure to focus on.

5 Exploring potential mechanisms

5.1 The role of years since immigration

There exists extensive evidence that highlights the importance of years since immigration and assimilation to improve immigrants' labour market outcomes. In this section we examine whether time spent in Canada plays any role in our estimated differences in CLT. Of course, differences among recent and less recent immigrants could capture both an assimilation effect and a cohort effect.[11]

Results reported in Columns (1) and (3) of Table 6 are based on our most preferred specification which includes personal and job characteristics, tenure, broad occupation, and industry. Specifications in Columns (2) and (4) also include workplace fixed effects. Starting with white immigrant men, we find that the more recent cohorts (i.e. those with less than 10 years in Canada) are more likely to receive CLT. Pendakur and Woodcock [2010], who use the same data set, find that this group experiences larger wage disparities at the bottom half of the wage distribution compared to their less-recent peers. To the extent that this is due to occupational downgrading and lack of transferable skills, one would expect more recent white immigrant men to receive more training opportunities. In contrast, for white immigrant women, the less recent cohorts are less likely to receive CLT, however the estimated gap while large is statistically insignificant.

Turning to visible minority immigrants, both recent and non-recent cohorts of both genders experience significantly lower probabilities of receiving CLT, with the gaps statistically indistinguishable from each other. This is despite the fact that according to Pendakur and Woodcock [2010], more recent visible minority immigrants of both genders experience significantly larger wage gaps both at the mean and also at the

[11] We account for the cohort effect by controlling for observed worker and job characteristics in our specifications. However, to the extent that there exists systematic differences across different cohorts of immigrants that are not correlated with these observed characteristics, including them as controls might not fully account for the cohort effect. Therefore, estimated differences by years since immigration might reflect both a cohort effect and an assimilation effect.

bottom and at the top of the wage distribution. This suggests that while more recent visible minority immigrants struggle more in the labour market in terms of wages, they do not experience improved training opportunities that would help them catch up with other groups. In fact, as we show in Section 6, these worse training opportunities contribute to their disadvantaged position in terms of wages.

Next, we compare the estimated economy-wide and within-workplace differences in CLT to explore the role of workplaces in driving these large differences experienced by both recent and non-recent visible minority immigrants. Estimates reported in Columns (2) and (4) of Table 6 suggest that similar to our previous findings, for both recent and non-recent male visible minority immigrants, the within-workplace differences in probability of receiving CLT are quantitatively small and statistically insignificant. This suggests that the large economy-wide gaps experienced by these two groups occur between workplaces and are driven by their differential sorting into workplaces with less CLT opportunities.

We find a similar pattern for recent female visible minority immigrants. The only exceptions are non-recent female visible minority immigrants whose adverse CLT opportunities seem to mainly operate within workplaces. One potential explanation is that while spending more time in Canada mitigates some of the between-firm mechanisms that contribute to female visible minorities' adverse training outcomes, it widens the disparities they face within workplaces. Therefore, while the overall disparities they face stay similar, their underlying driving mechanism changes drastically.

5.2 The role of skill/education level

Skilled and unskilled immigrants operate in very different labour markets. It is therefore important to examine whether adverse training opportunities experienced by immigrants is similarly shared by both groups or is exclusive to only one group. In Table 7 we use education level as a proxy for skill to estimate differences in probability of CLT among different groups of workers with different education levels. Two set of

findings worth highlighting here.

First, for each of the four different groups in the sample of male workers, those with a bachelor's degree are more likely to receive CLT compared to those without a bachelor's degree, although the gap is not statistically significant among some groups. The biggest gap by education level appears among white male Canadian-borns where those with a bachelor's degree are 32 percentage points more likely to receive CLT. On the contrary, having a bachelor's degree does not seem to appreciably increase the probability of receiving CLT in the sample of female workers. For each group, the estimated coefficients by education level are quantitatively similar and/or statistically indistinguishable from each other.

Second, visible minority immigrants (of both genders) are the only group whose probability of receiving CLT is significantly and statistically lower than their corresponding reference groups (i.e. white Canadian-born men/women without a bachelor's degree) regardless of their education level. More specifically, male visible minority immigrants without (with) a bachelor's degree are 7.9 (5.1) percentage points less likely to receive CLT compared to white Canadian-borns *without* a bachelor's degree. For female visible minority immigrants, these numbers are 8.3 and 8.7 percentage points, respectively.

These results suggest that regardless of their education level and the skill market they operate in, visible minority immigrants of both genders are in a disadvantaged position in terms of probability of receiving CLT. This is particularly striking for more educated visible minority immigrants who are the only group among educated workers with training opportunities worse than less-educated white Canadian-borns. These results are important since they suggest that visible minority immigrants who have higher levels of education cannot reap the benefits of more training opportunities associated with higher education levels that is well-documented in the literature (see O'Connell and Jungblut [2008] for a review of the international literature). This is critical because evidence from different studies suggest that struggles of visible minority immigrants in the labour market partly stem from employers discounting the signaling value of their

foreign credentials. Receiving training opportunities is one of the channels through which these immigrants can acquire human capital that is not discounted and could increase their visibility.

5.3 The role of differing career paths and hierarchical levels

Another potential mechanism for lower training opportunities experienced by visible minority immigrants is differences in unobserved characteristics which might sort them into jobs that put them on different career paths or at different hierarchical levels that are associated with different training opportunities. To investigate this potential explanation, we estimate specifications that control for a rich set of measures that either directly or as a proxy capture different aspects of an employee's job, hierarchical position, and career path.[12]

The results of these specifications are reported in Table 8. Comparing estimated economy-wide differences in Columns (1) to (3) suggests that the inclusion of the additional control variables explains around 17 percent of the training gap for both male and female visible minority immigrants. The remaining gaps, however, are still quantitatively large and statistically significant (6.3 percentage points for men and 7.6 percentage points for women). For female visible minority immigrants, who also experience significant within-workplace gaps in CLT (5.4 percentage points), inclusion of these variables explains around one-third of the within-workplace gap. The remaining within-workplace gap although still quantitatively significant (3.7 percentage points) is now statistically insignificant.

It seems, therefore, that while differences in career paths or hierarchical levels can explain some of the training gaps experienced by visible minority immigrants, the remaining gaps are still large and statistically significant. This is despite the fact that many of the additional control variables we included in our specifications are likely to be endogenous and manifestations, rather than independent explanations, of the

[12] See the notes at the bottom of Table 8 for a list of these variables

labour market disparities experienced by visible minority immigrants. However, even these *conservative* estimates of differences in training opportunities seem to indicate the existence of large training disadvantages faced by visible minority immigrants of both genders. In light of these persistent gaps we turn to other potential sources behind these gaps, sources that could shed some light on the supply-side factors behind these disparities.

5.4 For-profit versus non-profit sectors

There is growing evidence of better opportunities for skill development, greater wage equity, diminished wage differences, and better promotion opportunities by gender, race, and sexual orientation in the non-profit sector (e.g. Dostie and Javdani [2018]; Leete [2000]; Lewis [2010]; Mirvis and Hacket [1983]; Preston [1990]). These findings are consistent with the hypothesis that given the nature of their activities, non-profit organizations need employees that are more intrinsically motivated and organizationally oriented, and (wage) equity is suggested to be one of the key mechanisms that helps achieve these outcomes (see Leete [2000] for a review). In light of this evidence, we examine whether immigrants face better training opportunities relative to white Canadian-borns in the non-profit sector compared to the for-profit sector. This could provide helpful insights into practices and policies through which we could improve the training opportunities of visible minority immigrants.[13]

Results reported in Table 9 suggest that the economy-wide gaps in CLT experienced by visible minority immigrants of both genders are entirely driven by training disparities they face in the for-profit sector. More specifically, the CLT gap experienced by female visible minority immigrants in the for-profit sector is identical to the economy-wide gap they experience (9.5 percentage points), reported in Table 4. However, the CLT gap they face in the non-profit sector is significantly smaller and

[13]We should note however that sorting of workers between non-profit and for-profit sectors is likely endogenous. Therefore, the empirical relationship we investigate in this section cannot be given a strict causal interpretation.

statistically insignificant (3.5 percentage points). Male visible minority immigrants are in an even better condition in the for-profit sector where they are 3.5 percentage points more likely to receive CLT, although the estimated gap is not statistically significant. On the other hand, the CLT gap they experience in the non-profit sector is even larger than the economy-wide gap they face (8.2 versus 7.1 percentage points, respectively).

The significantly better training opportunities faced by visible minority immigrants in the non-profit sector are consistent with results from previous studies that find more equitable labour market outcomes by gender, race, and sexual orientation in the non-profit sector. For example, Dostie and Javdani [2018] find that while women face better training opportunities in the non-profit sector compared to their male counterparts, they experience significantly worse training opportunities in the for-profit sector. One potential explanation is differences between the non-profit and for-profit sectors in working conditions, stereotypes, or discriminatory behaviour. These differences could be driven by different technologies that dictate different treatments (Altonji and Blank [1999]), different bargaining effects and ability to extract training from workplaces (Sap [1993]), or differences in organizational processes within workplaces which leads to stratification in training opportunities (Tolbert and Castilla [2017]).

6 Labour market consequences of training disparities

6.1 The impact on wages

In these two final sections, we turn to the consequences of the previously documented training gaps between Canadian-borns and visible minority immigrants. In particular, we examine the extent to which the significant training gaps experienced by visible minority immigrants contribute to the wage disparities they face in the labour market. We take up this issue in Table 10 where we report estimates of the Oaxaca-Blinder (O-B) decomposition of the gap in average log hourly wages between white Canadian-borns and visible minority immigrants.

As the estimates in the top panel of Table 10 suggest, unconditionally, the average hourly wage of male (female) visible minority immigrants is 0.16 (0.72) log points smaller than their white Canadian-born counterparts. The O-B estimates in Columns (1) and (3) suggest that differences in training opportunities between the two groups explain 0.8 (1) percentage points or 5 (13) percent of the average wage gap experienced by male (female) visible minority immigrants. While including additional variables in Columns (2) and (4) that control for different workplace characteristics reduces these estimates, their contribution to explaining the wage gaps stays statistically significant.

We should also note that these estimates only measure the effect of difference in training received over the course of one year. Training received over the course of one's career, or over several years, and its indirect impact on promotions, job mobility, as well as productivity, could quickly compound to a much more significant impact on wages.

6.2 The impact on promotion opportunities

As another important labour market outcome, we estimate the effect of CLT on promotion opportunities. Promotions are one of the main channels that can improve significant wage disparities faced by visible minority immigrants. This is particularly important since there exists evidence that suggests visible minority immigrants in Canada experience significant gaps in promotion opportunities which hinders their wage growth compared to white immigrants and Canadian-borns (Javdani and McGee [2018]).

Our indicator of whether an employee has been promoted is based on the question: "Have you ever been promoted while working for this employer? (By promotion we mean a change in duties/responsibilities that lead to both an increase in pay and the complexity or responsibility of the job)." Estimates reported in Panel (A) of Table 11 suggest that overall and conditional on observed characteristics, receiving CLT is associated with 3.3 percentage points higher probability of promotion for both genders.

In Panel (B) we find that white immigrants and white Canadian-borns who re-

ceive CLT are more likely to get promoted compared to the reference group (white Canadian-borns without CLT). Training received by visible minority Canadian-borns and immigrants, however, does not have the same positive effect on the probability of promotion. In addition, while there are no differences in promotion opportunities between white Canadian-borns and white immigrants who did not receive CLT, visible minority Canadian-borns and visible minority immigrants who did not receive CLT are both significantly less likely to get promoted.

These results suggest that when it comes to boosting promotion opportunities, receiving CLT for visible minority Canadian-borns and visible minority immigrants puts them at a similar position as white Canadian-borns without CLT. This is still better than not receiving CLT, which puts these two groups at a major disadvantage in terms of promotion opportunities. Therefore, while training opportunities seem to improve visible minority immigrants' odds of promotion, they still fall short in gaining equal footing with their white counterparts.

7 Conclusion

In this study, we use Canadian linked employer-employee data from 1999 to 2006 to examine differences in training opportunities between white/visible minority immigrants and Canadian-borns. Our results suggest that white immigrants mostly experience similar training opportunities relative to white Canadian-borns. This experience, however, is not shared by visible minority immigrants. We find that visible minority immigrants of both genders experience significant disadvantages in probability of receiving classroom training as well as in its duration and intensity. This is despite the fact that visible minority immigrants are less likely to turn down training opportunities.

On the positive side, we find that second-and-higher-generation visible minority immigrants (i.e. visible minority Canadian-borns) are in a better position relative to visible minority immigrants. More specifically, compared to female (male) white Canadian-borns, female (male) visible minority Canadian-borns are similarly likely

(more likely) to receive classroom training. This effect is however somehow offset by shorter CLT courses they receive. Both visible minority immigrants and Canadian-borns however share the disadvantage of being less likely to receive (financial) help from their employer to take career development courses outside paid working hours.

Exploring the channels behind these disparities we find that lower training opportunities experienced by visible minority immigrants almost entirely operates in the for-profit sector, with visible minority immigrants in the non-profit sector facing similar or better training opportunities that their white Canadian-born counterparts. In addition, taking advantage of the fact that we have access to linked employer-employee data, our results highlight two distinct channels that drive these disparities. For male visible minorities, we find evidence that the gap in probability of receiving CLT (in the for-profit sector) is entirely driven by their differential sorting into workplaces that offer less training opportunities. For female visible minority immigrants however, within-workplace disparities in training seem to be mainly responsible for their adverse training opportunities (in the for-profit sector).

We also find no evidence that years spend in Canada or higher levels of education help improve these adverse training opportunities experienced by visible minority immigrants. Moreover, including a rich set of variables to account for potential differences in career paths or hierarchical levels between visible minority immigrants and white Canadian-borns also fails to appreciably explain these large disparities.

Finally, we explore the link between disparities in training opportunities and other labour market outcomes including wages and promotion opportunities. Results from Oaxaca-Blinder decomposition suggest that differences in training opportunities between male (female) visible minority immigrants and white Canadian-borns helps explain 5 (13) percent of the average wage gap between them. Moreover, despite significant association between training and promotion opportunities evident in our results, we find evidence that for visible minority immigrants and visible minority Canadian-borns receiving classroom training does not have the same positive impact on promotion opportunities enjoyed by white immigrants and white Canadian-borns. However,

it seems to at least mitigate (some of) their disadvantaged position in probability of receiving promotion.

Taken together, our results suggest that improving classroom training opportunities for visible minority immigrants could have appreciable impacts on their labour market outcomes such as wages and promotion opportunities and could help reduce some of the labour market disparities they experience. However, improving these training opportunities seem to require different remedies for male versus female visible minority immigrants since they are driven by different mechanisms. For male visible minority immigrants, most of the training disparities they face operate between workplaces. Therefore, programs and policies that could help alleviate search frictions that limit their access to workplaces with better training opportunities could be more effective. In doing so, understanding how their searches differ from those of their white peers (natives and immigrants) is of particular importance.

For female visible minority immigrants however, these measures will be less effective since most of their adverse training opportunities operate within workplaces. This also highlights a broader issue that paying attention to labour market opportunities should not be limited to access to certain firms or industries. Given the relative success of visible minority immigrant women in the non-profit sector, which is evident in our results and is also documented in other studies, perhaps a more careful examination of the policies, practices, and work culture in the non-profit sector could shed light on some of the channels that could help improve the within-workplace position of female visible minority immigrants in the for-profit sector.

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A Tables

Table 1: Summary statistics: Men

	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant
Training:				
% received CLT in the last year	0.383	0.507	0.355	0.312
# of CLT courses in the past year	2.614	2.914	2.417	2.081
Time spent on CLT (in days)	3.776	4.219	3.139	3.107
% received OJT in the last year	0.293	0.453	0.271	0.317
Time spent on OJT (in days)	7.506	8.349	7.006	6.581
% who declined the offer of OJT	0.117	0.174	0.110	0.083
Education:				
MSC, PHD, Degree in medicine	0.04	0.041	0.094	0.082
Teachers college, post BSC	0.019	0.014	0.034	0.025
BSC	0.121	0.294	0.155	0.251
Some university	0.081	0.111	0.075	0.075
College completed	0.163	0.165	0.175	0.193
Trade-vocational or other	0.264	0.193	0.233	0.175
High school graduate	0.175	0.112	0.136	0.119
Less than high school	0.135	0.069	0.096	0.078
Marital status:				
Married	0.592	0.477	0.718	0.791
Common-law	0.166	0.108	0.090	0.034
Separated	0.024	0.021	0.030	0.016
Divorced	0.039	0.022	0.028	0.019
Widowed	0.005	0.001	0.003	0.002
Single	0.174	0.369	0.129	0.136
Number of children				
Zero	0.489	0.669	0.461	0.335
One	0.171	0.125	0.190	0.217
Two	0.243	0.131	0.245	0.319
Three	0.075	0.062	0.075	0.103
Four or more	0.021	0.012	0.028	0.026
N		43335		

Note. All means are computed using sample weights provided in the data. Statistics Canada does not permit reporting these means without using the weights.

Table 1: Summary statistics: Men (cont'd)

	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant
Age:				
25 to 29	0.118	0.38	0.066	0.076
30 to 34	0.149	0.165	0.107	0.173
35 to 39	0.164	0.154	0.129	0.193
40 to 44	0.175	0.137	0.155	0.190
45 to 49	0.155	0.078	0.152	0.164
50 to 54	0.127	0.036	0.171	0.106
55 to 59	0.080	0.024	0.147	0.061
60 to 64	0.031	0.023	0.072	0.035
(Actual) labour market exp. (in years)	20.43	13.86	22.53	15.37
Seniority (in years)	9.999	6.161	10.000	7.075
Full-time	0.864	0.873	0.888	0.876
Union or CBA	0.285	0.223	0.254	0.189
Occupation:				
Managers	0.186	0.177	0.217	0.165
Professionals	0.135	0.255	0.203	0.179
Technical/Traders	0.530	0.372	0.434	0.451
Marketing/Sales	0.029	0.061	0.032	0.044
Clerical/Administrative	0.057	0.081	0.052	0.078
Production Workers	0.063	0.052	0.061	0.083
N		43335		

Note. All means are computed using sample weights provided in the data. Statistics Canada does not permit reporting these means without using the weights.

Table 1: Summary statistics: Men (cont'd)

	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant
Industry:				
Forestry, mining, oil, and gas extraction	0.060	0.024	0.025	0.019
Communication and other utilities				
Manufacturing	0.236	0.188	0.291	0.338
Construction	0.081	0.058	0.059	0.018
Transportation, warehousing, wholesale	0.157	0.147	0.120	0.100
Retail trade and consumer services	0.172	0.201	0.154	0.204
Finance and insurance	0.028	0.068	0.023	0.051
Real estate, rental and leasing operations	0.017	0.027	0.020	0.008
Business services	0.095	0.098	0.139	0.157
Education and health services	0.115	0.140	0.129	0.088
Information and cultural industries	0.036	0.048	0.038	0.016
Firm size:				
1 to 19	0.284	0.167	0.258	0.269
20 to 99	0.329	0.429	0.301	0.340
100 to 499	0.220	0.217	0.257	0.246
500 and more	0.167	0.187	0.183	0.145
Firm characteristics:				
Quite rate	0.080	0.095	0.087	0.094
Proportion of full-time workers	0.808	0.780	0.826	0.815
Log of training expenditures per worker	3.809	3.705	3.418	3.200
Sum of benefits z-scores	-0.654	0.111	-0.411	-1.119
Sum of innovative work practices z-scores	-0.192	0.279	-0.305	-0.180
Sum of compensation schemes z-scores	-0.136	0.147	0.110	-0.069
Indicator for good labour-management	0.721	0.729	0.744	0.684
N		43335		

Note. All means are computed using sample weights provided in the data. Statistics Canada does not permit reporting these means without using the weights.

Table 2: Summary statistics: Women

	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant
Training:				
% received CLT in the last year	0.385	0.360	0.353	0.288
# of CLT courses in the past year	2.513	2.759	2.357	2.383
Time spent on CLT (in days)	3.954	3.118	3.486	4.306
% received OJT in the last year	0.310	0.415	0.299	0.286
Time spent on OJT (in days)	5.622	13.69	6.641	7.843
% who declined the offer of OJT	0.120	0.109	0.117	0.086
Education:				
MSC, PHD, Degree in medicine	0.035	0.041	0.066	0.071
Teachers college, post BSC	0.020	0.044	0.032	0.029
BSC	0.130	0.201	0.159	0.227
Some university	0.086	0.121	0.078	0.066
College completed	0.254	0.217	0.247	0.252
Trade-vocational or other	0.219	0.133	0.176	0.165
High school graduate	0.178	0.231	0.147	0.131
Less than high school	0.074	0.012	0.092	0.057
Marital status:				
Married	0.569	0.444	0.663	0.679
Common-law	0.150	0.108	0.085	0.036
Separated	0.035	0.027	0.034	0.030
Divorced	0.080	0.033	0.075	0.059
Widowed	0.013	0.002	0.020	0.016
Single	0.151	0.385	0.122	0.178
Number of children				
Zero	0.505	0.582	0.517	0.425
One	0.179	0.167	0.171	0.230
Two	0.234	0.161	0.213	0.263
Three	0.067	0.080	0.079	0.060
Four or more	0.014	0.009	0.019	0.021
N		33720		

Note. All means are computed using sample weights provided in the data. Statistics Canada does not permit reporting these means without using the weights.

Table 2: Summary statistics: Women (cont'd)

	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant
Age:				
25 to 29	0.120	0.282	0.074	0.111
30 to 34	0.131	0.224	0.092	0.142
35 to 39	0.162	0.205	0.140	0.170
40 to 44	0.185	0.138	0.141	0.195
45 to 49	0.167	0.067	0.184	0.177
50 to 54	0.125	0.043	0.180	0.118
55 to 59	0.078	0.026	0.125	0.063
60 to 64	0.030	0.012	0.063	0.024
(Actual) labour market exp. (in years)	16.89	13.35	18.32	13.91
Years of tenure with current employer	8.869	6.709	8.712	6.699
Full-time	0.549	0.635	0.639	0.709
Union or CBA	0.296	0.199	0.232	0.188
Occupation:				
Managers	0.097	0.120	0.086	0.092
Professionals	0.213	0.196	0.203	0.209
Technical/Traders	0.320	0.342	0.354	0.354
Marketing/Sales	0.093	0.086	0.073	0.075
Clerical/Administrative	0.228	0.220	0.202	0.177
Production Workers	0.048	0.036	0.081	0.092
N		33720		

Note. All means are computed using sample weights provided in the data. Statistics Canada does not permit reporting these means without using the weights.

Table 2: Summary statistics: Women (cont'd)

	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant
Industry:				
Forestry, mining, oil, and gas extraction	0.018	0.011	0.017	0.025
Communication and other utilities				
Manufacturing	0.093	0.086	0.145	0.171
Construction	0.018	0.009	0.005	0.006
Transportation, warehousing, wholesale	0.072	0.076	0.066	0.062
Retail trade and consumer services	0.217	0.331	0.185	0.248
Finance and insurance	0.069	0.088	0.045	0.070
Real estate, rental and leasing operations	0.017	0.006	0.020	0.014
Business services	0.097	0.117	0.139	0.152
Education and health services	0.360	0.238	0.339	0.228
Information and cultural industries	0.034	0.035	0.036	0.019
Firm size:				
1 to 19	0.309	0.435	0.280	0.267
20 to 99	0.286	0.245	0.283	0.333
100 to 499	0.194	0.153	0.232	0.25
500 and more	0.211	0.167	0.204	0.15
Firm characteristics:				
Quite rate	0.088	0.080	0.091	0.104
Proportion of full-time workers	0.650	0.660	0.688	0.731
Log of training expenditures per worker	3.573	2.922	3.495	2.928
Sum of benefits z-scores	-0.833	-1.601	-0.485	-1.097
Sum of innovative work practices z-scores	0.099	-0.510	0.160	-0.294
Sum of compensation schemes z-scores	-0.570	-0.412	-0.234	-0.342
Indicator for good labour-management	0.741	0.699	0.745	0.648
N		33720		

Note. All means are computed using sample weights provided in the data. Statistics Canada does not permit reporting these means without using the weights.

Table 3: Differences in probability of receiving OTJ training (Linear Probability Model)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Males									
Visible Minority	0.166***	0.111**	0.111**	0.109**	0.101**	0.111**	0.102**	0.135**	0.137**
Canadian-born	(0.042)	(0.047)	(0.047)	(0.047)	(0.044)	(0.046)	(0.044)	(0.054)	(0.053)
White Immigrant	-0.020	-0.024	-0.024	-0.024	-0.021	-0.024	-0.021	-0.028*	-0.027*
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Visible Minority	0.018	-0.006	-0.009	-0.007	-0.008	-0.008	-0.008	0.009	0.012
Immigrant	(0.019)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.022)	(0.022)
N					42470				
Females									
Visible Minority	0.104*	0.081	0.081	0.085	0.091	0.091	0.093	0.032	0.031
Canadian-born	(0.061)	(0.060)	(0.061)	(0.060)	(0.056)	(0.061)	(0.056)	(0.040)	(0.040)
White Immigrant	-0.007	-0.010	-0.011	-0.005	-0.006	-0.001	-0.003	-0.024	-0.022
	(0.016)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.014)	(0.017)	(0.017)
Visible Minority	-0.022	-0.038*	-0.042*	-0.034	-0.028	-0.03	-0.028	-0.028	-0.025
Immigrant	(0.022)	(0.023)	(0.023)	(0.022)	(0.021)	(0.020)	(0.020)	(0.025)	(0.024)
N					32405				
Controls:									
Personal and job char.		YES	YES	YES	YES	YES	YES	YES	YES
Tenure with Employer			YES	YES	YES	YES	YES	YES	YES
Occupation (coarse)				YES		YES			YES
Occupation (detailed)					YES		YES		
Industry						YES	YES		
Workplace fixed effects								YES	YES

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $<$ 1%, ** $<$ 5%, * $<$ 10%. Personal and job characteristics include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement.

Table 4: Differences in probability of receiving CLT (Linear Probability Model)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Males									
Visible Minority	0.129***	0.089*	0.089*	0.087*	0.071	0.089**	0.070	0.103**	0.105**
Canadian-born	(0.041)	(0.048)	(0.048)	(0.047)	(0.043)	(0.045)	(0.043)	(0.051)	(0.052)
White Immigrant	-0.026	-0.033**	-0.033**	-0.034**	-0.026	-0.025	-0.025	-0.010	-0.009
	(0.016)	(0.016)	(0.016)	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.018)
Visible Minority	-0.066***	-0.088***	-0.086***	-0.080***	-0.064***	-0.071***	-0.065***	-0.005	0.001
Immigrant	(0.017)	(0.021)	(0.021)	(0.020)	(0.020)	(0.019)	(0.020)	(0.022)	(0.022)
N					42470				
Females									
Visible Minority	-0.025	-0.041	-0.041	-0.037	-0.020	-0.027	-0.017	0.018	0.024
Canadian-born	(0.047)	(0.036)	(0.037)	(0.036)	(0.032)	(0.033)	(0.031)	(0.033)	(0.033)
White Immigrant	-0.029*	-0.030*	-0.029*	-0.022	-0.022	-0.016	-0.019	-0.019	-0.014
	(0.017)	(0.016)	(0.016)	(0.016)	(0.017)	(0.016)	(0.017)	(0.018)	(0.018)
Visible Minority	-0.095***	-0.111***	-0.109***	-0.100***	-0.084***	-0.086***	-0.083***	-0.054**	-0.046*
Immigrant	(0.019)	(0.022)	(0.023)	(0.022)	(0.020)	(0.021)	(0.019)	(0.024)	(0.023)
N					32405				
Controls:									
Personal and job char.		YES	YES	YES	YES	YES	YES	YES	YES
Tenure with Employer			YES	YES	YES	YES	YES	YES	YES
Occupation (coarse)				YES		YES			YES
Occupation (detailed)					YES		YES		
Industry						YES	YES		
Workplace fixed effects								YES	YES

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $< 1\%$, ** $< 5\%$, * $< 10\%$. Personal and job characteristics include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement.

Table 5: Differences in other training measures (most preferred specification)

A: Differences in number of classroom training courses taken in the last year		
Population: All employees who have received classroom training related to their job		
	Males	Females
Visible Minority Canadian-born	0.170	0.133
	(0.280)	(0.360)
White Immigrant	-0.265*	-0.162
	(0.142)	(0.134)
Visible Minority Immigrant	-0.506***	-0.105
	(0.127)	(0.215)
N	16175	12115
B: Differences in the length of the classroom training courses (measured in days)		
Population: All employees who have received classroom training related to their job		
Visible Minority Canadian-born	-0.576	-0.703
	(0.855)	(1.126)
White Immigrant	-0.687*	-0.137
	(0.363)	(0.567)
Visible Minority Immigrant	-0.888	0.265
	(0.594)	(0.851)
N	16175	12115
C: Differences in time spent for on-the-job training (measured in days)		
Population: All employees who have received on-the-job training		
Visible Minority Canadian-born	1.192	2.215
	(2.787)	(3.216)
White Immigrant	0.269	0.294
	(1.055)	(1.310)
Visible Minority Immigrant	-0.120	-0.976
	(1.353)	(1.845)
N	10705	9340

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $< 1\%$, ** $< 5\%$, * $< 10\%$. Control variables in the most preferred specifications include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories).

Table 5: Differences in other training measures (most preferred specification) (cont'd)

D: Differences in probability of employer paying/ /helping with taking courses outside paid working hours *Population: All employees (this variable does not exist in the 1999 survey)*	Males	Females
Visible Minority Canadian-born	-0.032**	-0.033***
	(0.015)	(0.008)
White Immigrant	-0.000	-0.007
	(0.008)	(0.008)
Visible Minority Immigrant	-0.016**	-0.016**
	(0.007)	(0.007)
N	31815	24340
E: Differences in probability of rejecting job-related training offer *Population: All employees*		
Visible Minority Canadian-born	0.035	-0.001
	(0.030)	(0.019)
White Immigrant	-0.021**	-0.002
	(0.010)	(0.011)
Visible Minority Immigrant	-0.038***	-0.029*
	(0.012)	(0.016)
N	42470	32405

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $<$ 1%, ** $<$ 5%, * $<$ 10%. Control variables in the most preferred specifications include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories).

Table 6: Differences in probability of receiving CLT - By years since immigration

	Males		Females	
	(1)	(2)	(3)	(4)
Visible Minority Canadian-born	0.089**	0.106**	-0.027	0.024
	(0.045)	(0.052)	(0.033)	(0.032)
White Immigrant (yrs <=10)	0.010	0.025	-0.061	-0.039
	(0.036)	(0.033)	(0.041)	(0.041)
White Immigrant (yrs >10)	-0.032*	-0.015	-0.008	-0.009
	(0.018)	(0.020)	(0.017)	(0.019)
Visible Minority Immigrant (yrs <=10)	-0.089***	0.009	-0.071*	-0.015
	(0.032)	(0.028)	(0.039)	(0.039)
Visible Minority Immigrant (yrs >10)	-0.061***	0.000	-0.094***	-0.061***
	(0.022)	(0.026)	(0.019)	(0.023)
N	42470		32405	
Controls:				
Personal and job characteristics	YES	YES	YES	YES
Tenure with Employer	YES	YES	YES	YES
Occupation (coarse)	YES	YES	YES	YES
Industry	YES		YES	
Workplace fixed effects		YES		YES

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** < 1%, ** < 5%, * < 10%. Control variables in the most preferred specifications include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories). The second column for each group includes the same control variables as well as firm fixed effects.

Table 7: Differences in probability of receiving CLT/OJT - By education

	Males		Females	
	(1)	(2)	(3)	(4)
Classroom Training				
White Canadian-born (with bach.)	0.320***	0.075	0.061	-0.036
	(0.089)	(0.065)	(0.125)	(0.063)
Visible Minority Canadian-born (with bach.)	0.112	0.082	-0.014	0.008
	(0.076)	(0.092)	(0.061)	(0.066)
Visible Minority Canadian-born (without bach.)	0.091*	0.102**	-0.025	0.028
	(0.048)	(0.050)	(0.040)	(0.036)
White Immigrant (with bachelor)	-0.002	-0.005	-0.019	-0.016
	(0.029)	(0.028)	(0.034)	(0.035)
White Immigrant (without bach.)	-0.031	-0.012	-0.02	-0.016
	(0.020)	(0.023)	(0.018)	(0.021)
Visible Minority Immigrant (with bach.)	-0.051**	0.012	-0.087**	-0.035
	(0.026)	(0.036)	(0.036)	(0.037)
Visible Minority Immigrant (without bach.)	-0.079***	-0.013	-0.083***	-0.053**
	(0.023)	(0.025)	(0.022)	(0.025)
N	42470		32405	
Controls:				
Personal and job characteristics	YES	YES	YES	YES
Tenure with Employer	YES	YES	YES	YES
Occupation (coarse)	YES	YES	YES	YES
Industry	YES		YES	
Workplace fixed effects		YES		YES

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $<$ 1%, ** $<$ 5%, * $<$ 10%. Control variables in the most preferred specifications include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories). The second column for each group includes the same control variables as well as firm fixed effects.

Table 8: Differences in probability of receiving CLT - additional controls

	(1)	(2)	(3)	(4)	(5)	(6)
Males						
Visible Minority	0.090**	0.098**	0.092**	0.103**	0.111**	0.114**
Canadian-born	(0.045)	(0.044)	(0.044)	(0.051)	(0.052)	(0.051)
White Immigrant	-0.025	-0.025	-0.026	-0.010	-0.008	-0.010
	(0.016)	(0.017)	(0.017)	(0.018)	(0.018)	(0.018)
Visible Minority	-0.076***	-0.070***	-0.063***	-0.005	0.000	0.004
Immigrant	(0.020)	(0.020)	(0.019)	(0.022)	(0.022)	(0.022)
N			42470			
Females						
Visible Minority	-0.027	-0.021	-0.013	0.018	0.021	0.035
Canadian-born	(0.033)	(0.034)	(0.036)	(0.033)	(0.033)	(0.034)
White Immigrant	-0.022	-0.023	-0.027	-0.019	-0.018	-0.015
	(0.016)	(0.016)	(0.016)	(0.018)	(0.018)	(0.018)
Visible Minority	-0.091***	-0.083***	-0.076***	-0.054**	-0.050**	-0.037
Immigrant	(0.021)	(0.021)	(0.021)	(0.024)	(0.024)	(0.024)
N			32405			
Controls:						
Most preferred spec.	YES	YES	YES	YES	YES	YES
Workplace fixed effects				YES	YES	YES
Promotion		YES	YES		YES	YES
Career			YES			YES

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $<$ 1%, ** $<$ 5%, * $<$ 10%. Control variables in the most preferred specifications include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories). Promotion includes: an indicator for whether the worker has been promoted in the last twelve months, and the number of promotions received. Career variables includes: proportion of workers in higher earnings categories, an indicator for whether the worker supervises other employees on a day-to-day basis; number of employees supervised, indicators for hiring requirements (tests for specific skills (for example typing or manual dexterity), test on general knowledge or literacy skills, aptitude or other personality testing, security check, medical examination, drug test, tests administered by a recruitment agency, any other type of testing or screening, personal interview, test on job-related knowledge, None); indicators for terms of employment (regular employee, seasonal employee, term employee, casual or on-call employee, other); indicators for working compressed workweek, working regular fulltime workweek, working flexible hours, working the same number of paid hours per week, ability to carry out job duties at home, having used unpaid leave in the last twelve months; number of paid vacation days , paid sick days, and other paid leaves taken; hours of paid overtime usually worked per week; hours of unpaid overtime usually worked per week; days of unpaid leave taken.

Table 9: Differences in probability of receiving CLT by for-profit/non-profit sector

Males	For-profit		Non-profit	
	(1)	(2)	(3)	(4)
Visible Minority Canadian-born	0.067	0.07	0.181	0.256*
	(0.046)	(0.044)	(0.113)	(0.147)
White Immigrant	-0.019	0.007	-0.081**	-0.097***
	(0.018)	(0.020)	(0.037)	(0.036)
Visible Minority Immigrant	-0.082***	0.005	0.035	-0.030
	(0.020)	(0.023)	(0.054)	(0.048)
N	42455		4510	
Females	For-profit		Non-profit	
	(1)	(2)	(3)	(4)
Visible Minority Canadian-born	-0.047	0.005	0.082	0.090
	(0.037)	(0.036)	(0.062)	(0.066)
White Immigrant	-0.014	-0.023	-0.022	0.007
	(0.019)	(0.022)	(0.030)	(0.033)
Visible Minority Immigrant	-0.095***	-0.062**	-0.034	-0.005
	(0.023)	(0.027)	(0.047)	(0.042)
N	23850		8530	
Controls:				
Most preferred specification	YES	YES	YES	YES
Industry	YES		YES	
Workplace fixed effects		YES		YES

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $<$ 1%, ** $<$ 5%, * $<$ 10%. Control variables in the most preferred specification include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories).

Table 10: Decomposition of the wage gap and the role of training

	Males		Females	
	(1)	(2)	(3)	(4)
Overall				
White Canadian-borns	3.037***	3.037***	2.809***	2.809***
	(0.010)	(0.010)	(0.011)	(0.011)
Visible Minority Immigrant	2.878***	2.878***	2.737***	2.737***
	(0.029)	(0.030)	(0.026)	(0.026)
Difference	0.159***	0.159***	0.072***	0.072***
	(0.030)	(0.030)	(0.026)	(0.026)
Explained	-0.002	0.006	0.021	0.010
	(0.022)	(0.024)	(0.020)	(0.022)
Unexplained	0.161***	0.153***	0.050**	0.061***
	(0.022)	(0.022)	(0.020)	(0.019)
Explained				
Education	-0.061***	-0.052***	-0.039***	-0.036***
	(0.008)	(0.007)	(0.006)	(0.006)
Marital Status	-0.010***	-0.009***	-0.006***	-0.005***
	(0.002)	(0.002)	(0.001)	(0.001)
Children	-0.008***	-0.008***	0.001	0.000
	(0.002)	(0.002)	(0.001)	(0.001)
Age	-0.002	-0.001*	-0.001*	-0.001
	(0.001)	(0.001)	(0.001)	0.000
Experience	0.033***	0.027***	0.015***	0.013***
	(0.005)	(0.005)	(0.003)	(0.002)
Job characteristics	0.030***	0.018***	0.032***	0.027***
	(0.004)	(0.003)	(0.005)	(0.004)
Year	-0.004*	-0.004*	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Occupation	0.004	0.006	0.004	0.002
	(0.009)	(0.009)	(0.008)	(0.007)
Industry	0.008	0.016**	0.005	0.016*
	(0.012)	(0.008)	(0.010)	(0.008)
Training	0.008***	0.004***	0.010***	0.007***
	(0.002)	(0.001)	(0.003)	(0.002)
Firm Size		0.000		0.003
		(0.003)		(0.004)
Firm characteristics		0.014*		-0.006
		(0.007)		(0.005)
Non-profit		-0.004**		-0.010***
		(0.001)		(0.003)

Note. Decomposition is performed using sample weights provided in the data. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $< 1\%$, ** $< 5\%$, * $< 10\%$. Firm characteristics include: average quite rate, proportion of full-time workers, log of training expenditures per worker, and z-scores for non-wage benefits, innovative work practices, and compensation practices. Job characteristics include: indicator for full-time status, union coverage or collective bargaining agreement, and tenure with employer.

Table 10: Decomposition of the wage gap and the role of training (cont'd)

	Males		Females	
	(1)	(2)	(3)	(4)
Unexplained				
Education	-0.006	-0.005	0.005	0.009
	(0.011)	(0.012)	(0.013)	(0.014)
Marital Status	0.058	0.036	0.056**	0.043*
	(0.060)	(0.055)	(0.025)	(0.023)
Children	-0.01	-0.015	-0.02	-0.022
	(0.019)	(0.017)	(0.018)	(0.016)
Age	-0.123	-0.066	0.298	0.18
	(0.409)	(0.390)	(0.343)	(0.320)
Experience	-0.035	-0.04	-0.090*	-0.054
	(0.070)	(0.068)	(0.047)	(0.043)
Job characteristics	-0.043	-0.087	0.041	0.037
	(0.054)	(0.056)	(0.034)	(0.036)
Year	0.001	0.001	0.000	0.000
	(0.002)	(0.002)	(0.001)	(0.001)
Occupation	-0.027	-0.026	0.011	0.013
	(0.018)	(0.018)	(0.010)	(0.009)
Industry	-0.018	-0.014	-0.064***	-0.069***
	(0.022)	(0.023)	(0.019)	(0.023)
Training	-0.017	-0.018	0.005	0.003
	(0.016)	(0.016)	(0.014)	(0.014)
Firm Size		-0.006		-0.011*
		(0.006)		(0.006)
Firm characteristics		0.062		-0.114
		(0.101)		(0.071)
Non-profit		-0.013		-0.005
		(0.009)		(0.011)
Constant	0.384	0.347	-0.193	0.051
	-0.384	(0.377)	(0.330)	(0.302)
N	38320		29930	

Note. Decomposition is performed using sample weights provided in the data. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $<$ 1%, ** $<$ 5%, * $<$ 10%. Firm characteristics include: average quite rate, proportion of full-time workers, log of training expenditures per worker, and z-scores for non-wage benefits, innovative work practices, and compensation practices. Job characteristics include: indicator for full-time status, union coverage or collective bargaining agreement, and tenure with employer.

Table 11: The effect of CLT on probability of promotion

	Males	Females
Panel A:		
Classroom Training	0.034***	0.033***
	(0.011)	(0.011)
N	25045	19230
Panel B:		
White Canadian-born (with CLT)	0.024**	0.025**
	(0.012)	(0.012)
Visible Minority Canadian-born (with CLT)	-0.046	-0.094*
	(0.061)	(0.052)
Visible Minority Canadian-born (without CLT)	-0.120***	-0.146***
	(0.044)	(0.051)
White Immigrant (with CLT)	0.034	0.005
	(0.033)	(0.026)
White Immigrant (without CLT)	0.01	0.014
	(0.027)	(0.023)
Visible Minority Immigrant (with CLT)	-0.006	0.000
	(0.034)	(0.040)
Visible Minority Immigrant (without CLT)	-0.069***	-0.079***
	(0.023)	(0.021)
N	25045	19230
Controls:		
Personal and job characteristics	YES	YES
Tenure with employer	YES	YES
Occupation (coarse)	YES	YES
Industry	YES	YES

Note. All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** $< 1\%$, ** $< 5\%$, * $< 10\%$. Control variables in the most preferred specifications include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories). The second column for each group includes the same control variables as well as firm fixed effects.

B Online Appendix

Table A1: summary statistics of additional control variables

	Men				Women			
	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant	White Canadian	Visible Minority Canadian	White Immigrant	Visible Minority Immigrant
Industry:								
% promoted while with their current employer	0.419	0.388	0.406	0.342	0.355	0.317	0.340	0.288
% co-workers in higher earnings categories	0.211	0.237	0.213	0.243	0.294	0.253	0.300	0.314
% supervising other workers on a day-to-day basis	0.466	0.395	0.487	0.433	0.320	0.379	0.317	0.328
Number of people supervised	9.179	6.951	12.53	7.951	3.405	3.463	3.348	2.121
Hiring Requirements when first hired								
Test of specific skills	0.0913	0.0681	0.129	0.136	0.104	0.0816	0.127	0.136
Aptitude or other personality testing	0.0823	0.0995	0.0929	0.112	0.0709	0.0482	0.0847	0.0861
Security check	0.107	0.169	0.111	0.146	0.126	0.117	0.117	0.124
Medical examination	0.153	0.114	0.157	0.121	0.130	0.0605	0.153	0.118
Drug test	0.0296	0.0253	0.0297	0.0336	0.0129	0.0117	0.00943	0.0272
Tests by recruitment agency	0.00848	0.00688	0.0153	0.0195	0.0120	0.0112	0.0238	0.0254
Personal interview	0.731	0.752	0.755	0.823	0.794	0.826	0.814	0.812
Test on job-related knowledge	0.0698	0.0665	0.0883	0.102	0.0662	0.0782	0.0736	0.0983
Test on general knowledge or literacy skills	0.0388	0.0812	0.0464	0.0656	0.0433	0.0556	0.0569	0.0644
Any other type of testing or screening	0.0177	0.00744	0.0221	0.0196	0.0184	0.0298	0.0194	0.0147
None	0.229	0.177	0.202	0.148	0.172	0.157	0.150	0.157
Working conditions and flexibility:								
Working a compressed workweek	0.0667	0.0520	0.0529	0.0540	0.0460	0.0493	0.0473	0.0439
Working flexible hours	0.382	0.454	0.393	0.356	0.334	0.267	0.333	0.285
Working the same number of paid hours per week	0.875	0.900	0.869	0.921	0.876	0.926	0.865	0.897
Being able to carry out work duties at home	0.283	0.372	0.311	0.214	0.243	0.283	0.252	0.164
Working a regular workweek	0.695	0.667	0.729	0.685	0.575	0.507	0.617	0.636
Leave and over-time								
Paid sick leave	1.559	2.121	1.467	1.392	2.531	2.343	2.201	1.978
Paid vacation leave	11.99	9.723	11.88	9.780	10.83	8.910	10.68	8.698
Paid other leave	1.357	0.671	1.077	0.586	1.404	0.483	1.124	0.696
Hours of paid overtime usually worked per week	1.579	1.285	1.553	1.472	0.471	0.511	0.625	0.686
Hours of unpaid overtime worked per week	2.522	3.700	2.797	1.521	1.712	1.824	1.670	1.499
% Taken unpaid leave in the last 12 months	0.182	0.143	0.162	0.169	0.209	0.162	0.228	0.176
Days on unpaid leave in the last 12 months	1.704	1.625	2.056	1.925	2.422	2.221	2.918	1.647
N	43335 (rounded)				33720 (rounded)			

Note: All means are computed using sample weights provided in the data. Statistics Canada does not permit reporting these means without using the weights.

Table A2: Gender differences in probability of receiving CLT/OJT – LPM versus probit

A. Males	Classroom Training		On-the-Job Training	
	LPM	Probit	LPM	Probit
	(1)	(2)	(3)	(4)
Visible Minority Canadian-born	0.0894**	0.0845**	0.111**	0.0970**
	(0.0454)	(0.0424)	(0.0468)	(0.0403)
White Immigrant	-0.0258	-0.0259	-0.0240	-0.0245
	(0.0172)	(0.0173)	(0.0162)	(0.0165)
Visible Minority Immigrant	-0.0715***	-0.0722***	-0.00835	-0.00855
	(0.0199)	(0.0208)	(0.0170)	(0.0165)
N	42470		42470	
B. Females	Classroom Training		On-the-Job Training	
Visible Minority Canadian-born	-0.0273	-0.0309	0.0914	0.0853
	(0.0334)	(0.0353)	(0.0616)	(0.0560)
White Immigrant	-0.0165	-0.0155	-0.00146	-0.00134
	(0.0166)	(0.0166)	(0.0153)	(0.0152)
Visible Minority Immigrant	-0.0862***	-0.0885***	-0.0305	-0.0323
	(0.0217)	(0.0234)	(0.0208)	(0.0213)
N	32405		32405	

Notes: All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** < 1%, ** < 5%, * < 10%. Number of observations are rounded to the nearest five by Statistics Canada.

Control variables in the most preferred specifications include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories).

Table A3: Multinomial logit regressions – differences in subject of training

A: What were the main subjects of the on-the-job training? (check all that apply)

Population: All employees who have received on-the-job training.

	1	**2**	**3**	**4**	**5**	**6**	**7**
White Canadian	0.0193***	0.0315***	0.167***	0.00910***	0.0226***	0.0172***	0.259***
(Predicted prob.)	(0.00291)	(0.00269)	(0.00656)	(0.00121)	(0.00287)	(0.00168)	(0.00828)
Visible Minority Canadian	-0.00341	-0.0150*	-0.0164	-0.00590**	-0.0115*	-0.0125***	0.0109
	(0.00742)	(0.00828)	(0.0409)	(0.00240)	(0.00643)	(0.00322)	(0.0530)
White Immigrant	0.00354	-0.00964*	-0.0103	0.00151	-0.00566	-0.000294	-0.00817
	(0.00509)	(0.00523)	(0.0169)	(0.00335)	(0.00447)	(0.00550)	(0.0229)
Visible Minority Immigrant	0.00784	0.00660	-0.00608	-0.00115	-0.00708	-0.00535	-0.0367
	(0.00733)	(0.00982)	(0.0200)	(0.00322)	(0.00534)	(0.00414)	(0.0249)
	8	**9**	**10**	**11**	**12**	**13**	
White Canadian	0.0509***	0.00979***	0.0294***	0.0907***	0.0000375***	0.294***	
(Predicted prob.)	(0.00340)	(0.00144)	(0.00271)	(0.00552)	(0.0000131)	(0.00823)	
Visible Minority Canadian	0.00200	-0.00332	0.0502	-0.0305	-0.0000131	0.0354	
	(0.0180)	(0.00446)	(0.0363)	(0.0242)	(0.0000204)	(0.0484)	
White Immigrant	-0.00771	-0.00438**	0.00745	0.00905	-0.0000207	0.0246	
	(0.00825)	(0.00208)	(0.00650)	(0.0145)	(0.0000132)	(0.0229)	
Visible Minority Immigrant	0.0173	0.00131	0.00686	0.00230	-0.000000545	0.0141	
	(0.0175)	(0.00440)	(0.00977)	(0.0174)	(0.0000203)	(0.0273)	
N				23520			

B: What was the main subject of the last course you completed?

Population: All employees who have received classroom training related to their job.

	1	**2**	**3**	**4**	**5**	**6**	**7**
White Canadian	0.00236***	0.0455***	0.222***	0.00724***	0.0145***	0.0180***	0.171***
(Predicted prob.)	(0.000624)	(0.00301)	(0.00668)	(0.000980)	(0.00197)	(0.00159)	(0.00636)
Visible Minority Canadian	0.00143	-0.00271	0.0400	-0.00466***	0.0103	-0.00931**	-0.0421*
	(0.00193)	(0.0165)	(0.0450)	(0.00177)	(0.00785)	(0.00455)	(0.0235)
White Immigrant	0.0000466	-0.0100	0.0257	-0.00291	-0.00327	-0.00367	-0.00838
	(0.000833)	(0.00635)	(0.0217)	(0.00209)	(0.00275)	(0.00405)	(0.0155)
Visible Minority Immigrant	0.00150	-0.00109	0.00220	-0.00305	-0.00475	-0.00816**	-0.0127
	(0.00127)	(0.00965)	(0.0233)	(0.00195)	(0.00414)	(0.00386)	(0.0166)
	8	**9**	**10**	**11**	**12**	**13**	
White Canadian	0.0152***	0.00611***	0.0279***	0.104***	0.00342***	0.363***	
(Predicted prob.)	(0.00149)	(0.000784)	(0.00196)	(0.00524)	(0.000700)	(0.00719)	
Visible Minority Canadian	-0.0108***	-0.00313	0.0175	0.0368	-0.00166	-0.0315	
	(0.00251)	(0.00213)	(0.0161)	(0.0363)	(0.00125)	(0.0445)	
White Immigrant	-0.00127	-0.00366***	-0.000752	0.00557	0.000436	0.00217	
	(0.00350)	(0.00112)	(0.00545)	(0.0118)	(0.00175)	(0.0206)	
Visible Minority Immigrant	0.0167**	-0.00161	-0.000235	0.0549***	-0.000438	-0.0433*	
	(0.00714)	(0.00197)	(0.00795)	(0.0192)	(0.00178)	(0.0232)	
N				31140			

Notes: All regression coefficients are estimated using sample weights provided in the data. All specifications include year fixed effects. Standard errors are reported in parentheses and are robust to clustering at the firm level. Significance levels: ** < 1%, ** < 5%, * < 10%. For white Canadian-borns we report the predicted probability of each category, while for other groups we report the difference in the predicted probabilities compared to white Canadian-borns (i.e., marginal effects). Number of observations are rounded to the nearest five by Statistics Canada.

Control variables include: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quadratic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, an indicator for full-time employment, and an indicator for membership in a union or collective bargaining agreement, coarse occupation (6 categories), industry (14 categories).

Categories for main subject of training are: 1. Orientation for new employees; 2. Managerial/supervisory training; 3. Professional training (base category); 4. Apprenticeship training; 5. Sales and marketing training; 6. Computer hardware; 7. Computer software; 8. Other office or non-office equipment; 9. Group decision-making or problem-solving; 10. Team building, leadership, communication; 11. Occupational health and safety, environmental protection; 12. Literacy or numeracy; 13. Other.