



# Canadian Labour Market and Skills Researcher Network

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### Apprenticeship Program Requirements and Apprenticeship Completion Rates in Canada

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# Apprenticeship Program Requirements and Apprenticeship Completion Rates in Canada\*

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## Abstract

Over the past two decades there has been considerable growth in the number of new apprenticeship registrations in Canada. However, this has not been matched by a corresponding increase in the number of apprenticeship completions. As a result Canadian apprenticeship programs have seen declining completion rates over this period. Across provinces, trades and time there is considerable variation in apprenticeship completion rates. In Canada apprenticeship programs are provincially regulated and there are differences in requirements across trades and provinces and, to a lesser extent, over time. Therefore, this paper asks to what extent the differences in completion rates are related to differences in the structure of apprenticeship programs, as well as differences in demographic variables and unemployment rates. Results suggest that apprenticeship programs for which certification is mandatory have completion rates that are about ten percentage points higher than those without mandatory certification. There is little evidence to support the view that either the length of the work experience term or the technical training requirement act as a barrier to completion. However, there is some evidence to suggest that the format in which technical training is delivered is related to completion rates. While the decline in completion rates during the 1990s coincided with the raising of education requirements, accounting for the trend in completion rates implies a positive relationship between these two variables across trades and provinces. On average, trades with a higher fraction of female apprentices and apprentices with a younger average age tend to have higher completion rates. Finally, in general the results are consistent with high unemployment rates acting as a barrier to completion.

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## Executive Summary

In this paper I explore the relationship between apprenticeship completion rates and apprenticeship program requirements using data from 40 different trades and nine provinces over the period 1991 to 2007. The objective is to ask to what extent variation in completion rates is related to variation in apprenticeship program requirements and therefore provide information that might prove useful in the design of apprenticeship programs.

To do this I take data from the Registered Apprenticeship Information System (RAIS) for 111 trade-province combinations that cover approximately 75% of new apprenticeship registrations in Canada from 1991 to 2007. For each year and trade-province combination I then calculate a completion rate. That is, the ratio of apprenticeship completions in a given year divided by the number of lagged new apprenticeship registrations. The length of the lag is determined by the nominal duration of the program which is obtained from the Ellis Charts. Using the Ellis Charts for 1990, 1997, 1999, 2004 and 2007 and the RAIS I then collect data on variables that describe the length and structure of the apprenticeship program for each of these 111 trade-province combinations. These variables are whether or not certification is mandatory to work in the particular trade and province, the length of the work experience term of the apprenticeship program, the number of hours of technical training required to complete the program, the format of delivery for that technical training and the level of education required to enter the apprenticeship. I also collect data in the average ages of apprentices in each trade and province as well the proportion of apprentices who are female. Finally, I also collect unemployment rates for all workers in the province and those in the National Occupational Classification that covers each trade for each province. Using this data I estimate the relationship between apprenticeship completion rates and the structure of the apprenticeship program as well as the variables age, sex and unemployment rates.

In general the results reveal that apprenticeship programs for which certification is mandatory have completion rates that are about ten percentage points higher than those without mandatory certification. This suggests that a policy shift towards more mandatory certification could raise completion rates. However, if workers who have begun but not completed an apprenticeship are at least partial substitutes for qualified journeypersons then moving

to mandatory certification could exacerbate any perceived skills shortage, particularly in the short-term. There is no evidence that longer apprenticeship programs, either in terms of technical training hours or work experience hours have lower completion rates. Consequently the results do not provide an argument for shortening apprenticeship programs as a way to improve completion rates. However, the results do not speak to the question of whether a long duration discourages workers from entering a program in the first place. Some of the existing survey evidence suggests that block release can be a barrier to completion as it involves a period of income interruption. However, if anything the results in this paper find that on across province-trade combinations the delivery of technical training via block release is associated with higher completion rates than training delivered by other methods. There is some evidence that higher education requirements to enter an apprenticeship are associated with higher completion rates. However, the predicted effect is relatively modest, a one year increase in the grade of education is associated with an increase of 2 - 2.5 percentage points in the completion rate. Given this and the fact that higher education requirements may prevent some people from entering apprenticeship programs, a policy recommendation to raise education pre-requisites should be treated with caution. Overall the results are supportive of a negative relationship between the average age of apprentices in a trade and that trade's completion rate, and a positive relationship between the proportion of apprentices who are female and the completion rate. However, the parameter estimates describing these relationships are consistent with a movement towards apprentices who are younger on average and more female apprentices being associated with only a relatively modest effect on completion rates. Finally, the majority of the results using unemployment rates in this paper are consistent with most previous findings and suggest that issues of employment instability may be a problem for completions.