

# Retention and Labour Market Outcomes of Registered Apprentices in New Brunswick: 2009 to 2017



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## **PROJECT TITLE**

Retention and labour market outcomes of registered apprentices in New Brunswick: 2009 to 2017

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## Executive Summary

As the second phase of a two-part analysis looking at retention rates and labour market outcomes of post-secondary graduates in New Brunswick (NB), this report examines the trends, retention, and incomes of those who receive apprenticeship certificates in the province. Using the Canada Research Data Centre Network's Education and Labour Market Longitudinal Platform (ELMLP), it analyzes cohorts of trade certificate holders from 2009 to 2017.

### Highlight of Findings

- Roughly 11,000 trades certificates were granted in NB between 2009 and 2019, the majority of which went to males rather than females, apprentices rather than trade qualifiers, and individuals in Red Seal trades rather than non-Red Seal trades.
- Compared to 2009, there were 15% more registrations and 8% more certificates granted in 2019. Roughly 60% of these are in one of the following major trade groups: Automotive service technician, Plumber/Pipefitter/Steamfitter, Carpenter, Welder, or Electrician. Two of these trades, Automotive service technician and Plumber/Pipefitter/Steamfitter, have compulsory certification in NB.
- The largest increase in registrations was among Heavy duty equipment mechanics (86%), while the largest increase in certifications was in the Exterior finishing (300%) trade group.
- Retention is higher among completers than trade qualifiers. A possible reason behind this is the difference in requirements before a certificate is awarded to either group.
- Crane operators, Iron workers, or Power line technicians are usually the highest earners (see Table 8). However, data are not always available for these groups. When they are excluded from the equation due to data limitations, the next highest earning groups are the Industrial instrumentation and Control technician trade groups. Meanwhile, income is lowest among the Cook grade group.
- More years since certification does not necessarily translate into higher earnings for all trade groups. For instance, Plumbers in the 2010, 2011, and 2012 cohorts of certificate holders had a lower average income five years after certification compared to two years after certification, sometimes by as much as 18%.
- The amount of money paid to later cohorts of most trade groups has declined. Two-year post-certification incomes decreased between the earliest and most recent cohorts in the study period.<sup>1</sup> The largest decrease in income was among the Construction electrician trade group, while the largest increase in two-year post-certification median income was in the Cook trade group.
- Non-Red Seal trade certificate holders earn considerably more on average than Red Seal trade certificate holders for most cohorts. The higher number of Red Seal trade certified tradespersons compared to non-Red Seal Trade tradespersons might mean more competition for jobs among the Red Seal trades, creating less competitive wages being offered for this group. Income growth is also sometimes higher among cohorts of non-Red Seal trade certificate holders, which means smaller chances of a 'catch-up' for Red Seal trade certificate holders.

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<sup>1</sup> Not all trade groups have their median income reported, so the first reported income available is compared with the last reported income available for each trade group.

- While Red Seal endorsed certificate holders have an average two-year retention rate of 92%, non-Red Seal endorsed certificate holders have an average two-year retention rate of 65%. Red Seal endorsed certificate holders also earn less on average, sometimes by as much as 20%.

## Introduction

Apprenticeships are a long-standing and valuable part of the training and education system in New Brunswick (NB) (Government of New Brunswick [GNB], 2020). Over the last decade, interests in apprenticeship programs have risen, driven chiefly by concerns over current and future shortages of tradespersons. Efforts to encourage young Canadians, especially those not university-bound, to become skilled tradespersons have increased in hopes of remedying shortages within skilled trades.

This report focuses on the income (i.e., labour market outcomes) and retention of certificate holders from registered apprenticeship programs in NB from 2009 to 2017. It provides insight into certificate holders' labour market performances as well as their retention rates in the province by demographics and background characteristics.

Registered apprenticeships and trade qualifications/challenges are the main pathways through which a person becomes a certified tradesperson in Canada.

- **Registered apprentices** are those in a supervised training program in a designated trade within their provincial jurisdiction. They are required to be registered with the appropriate governing body to complete training.
- **Trade qualifiers or challengers** are those who have worked in a specific trade for an extended period of time, without necessarily having ever been an apprentice, and have successfully passed their certification exams, after acquiring the necessary work experience, as defined by jurisdictions, without having completed or started an apprenticeship (Red Seal, 2014).

While these are the traditional pathways to receiving certifications in Canada, one need not undergo either to become a tradesperson in Canada.

Tradespersons can be categorized into two types: certified (otherwise known as journeypersons) and uncertified. Uncertified tradespersons exist because certification is not compulsory for work in some trades. However, only certified tradespersons are recognized as qualified tradespersons where certification is compulsory. The designation of compulsory vs. non-compulsory trades differs by province. In NB, of the 71 occupations designated under the *Apprenticeship and Occupational Certification Act*, only 12 trades occupations consider certification compulsory<sup>2</sup> (GNB, 2021). Apprenticeship training, however, is available in 53 of the 71 trades.

Trades in Canada can be categorized into Red Seal and non-Red Seal programs.

- **The Red Seal Trade program** sets interprovincial occupational standards to assess the skills of tradespersons in specific trades across Canada (Statistics Canada [StatCan], 2020a). Those that meet the standard – through examination – are given an endorsement on their provincial/territorial trade certificates.
- **Non-Red Seal Trades** do not have interprovincial standards and therefore do not require an examination before working within the trade.

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<sup>2</sup> These trades occupations include Automotive service technician, Automotive service technician (steering, suspension and brakes), Bricklayer, Construction electrician, Mobile crane operator, Oil heat system technician, Plumber, Refrigeration and air conditioning technician, Sheet metal worker, Sprinkler system installer, and Steamfitter/Pipefitter.

The standards in Red Seal programs ensure that occupational and essential skills – reading, writing, numeracy, speaking, digital technology and lifelong learning – are incorporated into each program. Tradespersons in Red Seal trades can also receive a Red Seal endorsement, which helps foster an effective harmonization of apprenticeship training and assessment across provinces and territories. Red Seal endorsements allows certified workers to have their skill recognized across Canada where their occupations are designated, thereby facilitating interprovincial mobility of tradespersons in Canada.

**Table 1: Definition of terms**

Terms	Definition
Registered Apprentice	Registered apprentices are those in a supervised work training program in a designated trade within their provincial jurisdiction. They are required to be registered with the appropriate governing body to complete training.
Trade Qualifier/Challenger	Trade qualifiers or challengers are those who successfully pass their certification exams after acquiring the necessary work experience, as defined by jurisdictions, without having completed or started an apprenticeship.
Journeyman (Completer)	Journeymen are those who have completed an apprentice program and are certified.
Tradesperson	A tradesperson refers to a worker in a trade.
Red Seal Trade	Red Seal trades have standardized training and skill assessment requirements across the provinces and territories. In provinces and territories that conduct the standardized examination, the successful candidate will have a Red Seal attached to their provincial or territorial certificate. Non-Red Seal trades do not have standardization practices across the provinces and territories.
Red Seal Endorsement	After a person completes training or reaches the number of hours required for certification in a Red Seal Trade, they are allowed to sit for a Red Seal examination for that trade in order to receive a Red Seal Endorsement on their certificate. This is called the "Certificate of Qualification".

See Figure 7 in the Appendix for a full hierarchy chart.

In addition to shedding light on the income and retention of apprenticeship certificate holders in the province, this report also acts as a source of income comparison between university and college graduates and apprenticeship certificate holders. It should, however, be noted that apprenticeship certificate holders are different from college graduates and university graduates in important ways.

First, the road to becoming a certified tradesperson is specific to an occupational path, whereas college and university programs are less specific in the training and credentials granted. The route to certification does not always require a formal apprenticeship, and students are able to earn decent wages without completing a program.



Second, the demographic makeup of both groups is vastly different, as apprenticeship registrations are dominated by males, and registrants are older on average than university and community college enrollees.

Last, unlike university and many college programs, the trade qualifiers proportion of certificate holders (about 40% in this study) is required to work in their trade prior to being awarded their credentials. This is very different from the university pathway, in which a student completes their education and then goes to work. These characteristics, along with apprentices working while registered, will influence how we evaluate post-apprenticeship earnings.

This report aims to answer the following questions:

- What are the trends in the number of certificates granted and registrations of apprentices or trade qualifiers in New Brunswick?
- Are there differences in income and retention over time for those following an apprenticeship vs. a trade qualifier pathway?
- Which trade groups have the highest income, retention, and certification in NB? Have there been changes over time?
- Are there differences in the labour market outcomes of those certifying in a Red Seal trade vs. those in a non-Red Seal trade?
- Does a Red Seal endorsement matter for NB tradespersons in the labour market?

Answering these research questions is important, as the skills gained through apprenticeship and trades certification support industries that are integral to the NB economy. As such, tracking the labour market performance of those certified over time is important for economic growth. This project, for the first time, links data available in the Registered Apprenticeship Information System (RAIS) with tax filer data available in the T1 Family File (T1FF) to track the income and retention of registered apprentices and trade qualifiers in NB.

## Methodology

For the analysis, this report uses the Education and Labour Market Longitudinal Platform (ELMLP), accessed via the Research Data Centre (RDC) at the University of New Brunswick. The ELMLP contains three administrative datasets: the Post-Secondary Information System (PSIS), the Registered Apprentice Information System (RAIS), and the T1 Family File (tax records). This report makes use of the RAIS linked with the T1 Family File<sup>3</sup> datasets to examine labour outcomes and retention of registered apprentices in NB.

The RAIS is an administrative database containing information on registered apprentices receiving in-class or on-the-job training in Red Seal and non-Red Seal trades where apprenticeship training is compulsory or voluntary (Canadian Research Data Centre Network, n.d.). It also contains data on a number of provincial and interprovincial certificates granted to apprentices or trade qualifiers (challengers) each year.

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<sup>3</sup> T1 Family File data may not necessarily reflect full-time or full-year employment, as it does not account for number of hours worked. As well, apprentices who do not file taxes are excluded from income estimates.

The RAIS provides information annually on the registration and certification of apprentices and trade qualifiers (challengers) in Canada. This information can be stratified by demographic and background variables also provided within the dataset.

The T1 Family File provides income information for census families, individuals, and seniors, derived from income tax returns. It covers all those who completed a T1 tax return in the reference year or received federal child benefits, their non-filing spouses, their non-filing children, and filing children who reported the same address as their parent.

The final sample in this report is limited to those who received their certification between 2009 and 2017 inclusive. The timeline imposed on all outcomes reflects the most recent year for which tax data was available for graduates in the RAIS. Respondents with a reporting jurisdiction other than NB were removed. The sample is restricted to persons aged 15 to 65 years.

Certificate holders are considered those who successfully completed an entire program or a segment of a program and were granted certificates. Trades groups are categorized using 2016 National Occupational Classification (NOC) codes. Results are shown by gender, age, trade group, apprentice/trade qualifier status, Red Seal/non-Red Seal trade status, and Red Seal endorsed/non-Red Seal endorsed status.

As with our previous report on college and university graduates (Boco et al., 2021), we use two retention measures: the percentage of certificate holders still in NB as of December 31 of the certification year, and the percentage of certificate holders still in NB as of December 31 two years later. For example, for an apprentice who completed their program in June 2014, we would measure where they reported living in their tax returns on December 31, 2014 and on December 31, 2016.

Therefore, retention is based on the proportion of certificate holders from NB institutions still residing in NB in a given tax year. It is calculated as the number of NB certificate holders who declared NB as their province of residence on December 31 of a given tax year divided by the total number of tax filers who are part of the certification year cohort. Naturally, this means two things: 1) Apprentices who do not file taxes in a given year are left out of retention calculations, as they are not in the T1FF dataset, and 2) students who remain in NB but for whatever reason declare another province of residence on their tax return are not counted in the numerator of retention calculations.

We use the Canada Revenue Agency (CRA) definition for taxable income (i.e., total income less deductions) of certificate holders in the first two full years after certification so that, for certificate holders from June 2014, we observe taxable income in 2015 and in 2016 (i.e., year 1 and year 2 income). We report on the nominal average taxable income for each cohort. It should be noted that income is reported for all NB certificate holders and is not restricted to those who have NB as their province of taxation. Employment income is not used, as self-employment income was excluded from the dataset.

Analysis is based on certificate holders who completed an income tax return (only about 4% to 8% of certificate holders do not file a return in a given year). Income is based on the certificate holders' total taxable income as stated on their tax return. General tax filer counts are based on the number of NB certificate holders who filed taxes in the tax year, given their certification dates. Provincial tax filer counts are based on the same characteristics as the general tax filer counts except the certificate holders' taxation province is considered. Retention rates are obtained by dividing provincial counts by general counts.

## Certificates and Registrations

This report uses a combination of microdata files and aggregate tables published online. Online aggregate tables were used in place of results which could not be released due to Statistics Canada's residual disclosure guidelines and minimum sample size regulations. The data source – online aggregate tables vs. microdata files – is listed in the notes beneath each table. Tables which use online aggregate tables have more recent years of data available than those which use microdata.

We find that roughly 1,000 trade certificates are granted each year in NB (Table 2). As well, each year there are over 5,000 people registered in an apprenticeship program (Table 3). Of those 5,000, slightly over 1,000 are new registrations, and about 4,000 are already registered at the start of the reporting year. This makes for approximately a 5 to 1 ratio of total registrations to certificates granted, a 1 to 1 ratio of new registrations to certificates granted, and a 4 to 1 ratio of existing registrations to certificates granted each reporting year.

For apprentices or completers alone (i.e., excluding certificates granted to trade qualifiers), the corresponding ratios are roughly 9 to 1 for total registrations to certificates granted, 2 to 1 for new registrations to certificates granted, and 7 to 1 for existing registrations to certificates granted, respectively.

Compared to 2009, there were 15% more registrations and 8% more certificates granted in 2019.

**Table 2: Number of certificates granted, 2009 to 2019**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total</b>	939	960	1,155	1,089	1,035	1,014	1,062	1,011	993	1,167	1,017
<b>Male/Not stated</b>	921	939	1,128	1,059	1,008	981	1,023	984	939	1,125	969
<b>Female</b>	21	21	24	30	27	36	39	27	54	42	45
<b>Red Seal trade</b>	882	912	1,074	1,044	957	945	945	861	888	1,029	891
<b>Non-Red Seal trade</b>	54	51	81	48	78	69	117	150	105	135	129
<b>Apprentices</b>	579	603	741	738	618	645	600	534	639	660	636
<b>Trade qualifiers</b>	360	357	414	351	417	369	462	477	354	504	378
<b>Red Seal trade (apprentice)</b>	549	573	711	714	588	636	588	489	624	639	606
<b>Red Seal trade (trade qualifier)</b>	336	336	363	330	366	312	357	372	264	393	279

Source: Statistics Canada, Table 37-10-0089-01: Number of certificates granted to registered apprentices and trade qualifiers.

**Table 3: Number of registrations, 2009 to 2019**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total</b>	5,160	5,290	5,400	5,260	5,280	5,390	5,490	5,400	5,532	5,772	5,916
<b>New registrations</b>	1,200	1,194	1,173	1,017	1,125	1,203	1,149	1,023	1,149	1,233	1,215
<b>Reinstated/ Already registered</b>	3,963	4,095	4,227	4,242	4,158	4,185	4,344	4,377	4,386	4,542	4,701
<b>Male/Not stated</b>	5,043	5,142	5,232	5,079	5,085	5,199	5,262	5,172	5,298	5,529	5,646
<b>Female</b>	120	150	171	180	198	189	231	228	234	246	270
<b>Red Seal trade</b>	4,910	5,050	5,200	5,070	5,070	5,150	5,220	5,100	..	..	..
<b>Non-Red Seal trade</b>	250	240	210	190	210	240	270	300	..	..	..

Sources: ELMLP (RAIS) Microdata Files; Statistics Canada, *Table: 37-10-0023-01: Number of apprenticeship program registrations*. '..' represents counts not released from the Research Data Centre.

Roughly 60% of these certificates and registrations are in one of the following major trade groups: Automotive service technician, Plumber/Pipefitter/Steamfitter, Carpenter, Welder, or Electrician. Two of these are trades in which certification is deemed compulsory by the province before practice<sup>4</sup> (Table 4). Each of these trade groups, except Automotive service technician, had an initial decline in the number of registrations and certificates granted before picking up in 2017 (Tables 4 and 5).

**Table 4: Number of certificates granted by major trade group, 2009 to 2019**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Automotive service technicians</b>	153	234	234	180	165	159	168	180	195	201	168
<b>Carpenters</b>	75	117	120	96	87	87	78	69	60	63	69
<b>Electricians</b>	228	162	225	225	222	237	237	219	216	246	243
<b>Electronics and instrumentation</b>	18	30	15	24	15	21	27	27	18	30	15
<b>Exterior finishing</b>	3	15	24	15	15	9	9	30	12	21	12
<b>Food service</b>	33	24	27	39	24	18	30	15	36	27	24
<b>Hairstylists and estheticians</b>	6	9	12	12	9	12	6	3	3	3	3
<b>Heavy duty equipment mechanics</b>	33	27	42	33	48	36	42	36	36	21	30

<sup>4</sup> These trades are Automotive service technician and Plumber/Pipefitter/Steamfitter.

<b>Heavy equipment and crane operators</b>	30	21	69	51	57	24	15	30	6	15	33
<b>Interior finishing</b>	9	9	24	21	6	15	15	9	9	9	15
<b>Landscape horticulture technicians and specialists</b>	..	..	..	6	6	9	9	6	12	9	9
<b>Machinists</b>	18	24	9	21	15	9	12	12	9	9	3
<b>Metal workers (other)</b>	33	54	51	72	39	33	33	12	63	33	27
<b>Millwrights</b>	69	48	72	57	51	69	66	63	45	75	57
<b>Plumbers, pipefitters and steamfitters</b>	114	84	117	120	114	114	108	81	96	216	96
<b>Refrigeration and air conditioning mechanics</b>	21	18	18	27	39	18	30	30	33	30	36
<b>Sheet metal workers</b>	6	9	6	21	21	33	6	24	9	9	12
<b>Welders</b>	63	54	54	57	66	57	63	51	36	48	51
<b>Stationary engineers and power plant operators</b>	3	9	9	3	6	3	..	9	3	3	6
<b>Construction workers (other)</b>	..	..	..	..	..	..	3	3	..	..	6
<b>Other major trade groups</b>	21	15	24	12	30	54	102	99	93	105	90

Source: Statistics Canada, Table 37-10-0089-01: Number of certificates granted to registered apprentices and trade qualifiers. '..' represents counts not available for a specific reference period.

A few major trade groups saw an increase in the number of registrations between 2009 and 2019, the largest being among Heavy duty equipment mechanics (86%). Others include Refrigeration and air conditioning mechanics (70%), Millwrights (65%), Metal workers (other; excluding sheet metal workers) (57%), Stationary engineers and power plant operators (33%), Automotive service technicians (24%), and Food service workers (8%). Of these trade groups, two – Automotive service technicians and Refrigeration and air conditioning mechanics – contain trades for which certification is considered compulsory in NB.

The largest increases in certificates granted between 2009 and 2019 were from Exterior finishing (300%), Sheet metal workers (100%), Stationary engineers and power plant operators (100%), and Interior finishing (67%) groups. Sheet metal workers are also considered a compulsory trade in NB, meaning certification is required before practice. These increases in registrations and certifications in the compulsory trades are, however, not enough to offset the decreases in the other compulsory trades in the province.

For the entire study period, the fewest registrations were mostly among the Stationary engineers and power plant operators, Interior finishing, and Landscape and horticulture technicians and specialists trade groups. The fewest certificates were typically granted in the Stationary engineers and power plant operators, Sheet metal workers, Hairstylists/Estheticians, and Interior or Exterior finishing trade groups.

**Table 5: Number of new apprenticeship registrations by major trade group, 2009 to 2019**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Automotive service technicians</b>	201	183	225	171	195	213	216	231	219	228	249
<b>Carpenters</b>	156	207	165	126	111	117	138	102	81	84	105
<b>Electricians</b>	282	228	249	267	273	279	240	183	258	288	267
<b>Electronics and instrumentation</b>	21	18	18	27	27	21	27	18	21	27	15
<b>Exterior finishing</b>	39	27	36	15	24	15	24	27	21	39	30
<b>Food service</b>	36	36	33	36	42	27	36	27	39	30	39
<b>Heavy duty equipment mechanics</b>	21	21	36	21	21	27	27	27	36	45	39
<b>Heavy equipment and crane operators</b>	36	15	6	15	21	30	27	24	45	48	36
<b>Interior finishing</b>	24	12	3	9	0	18	15	3	3	18	21
<b>Landscape and horticulture technicians and specialists</b>	..	3	12	12	15	12	6	6	15	12	9
<b>Machinists</b>	18	27	21	21	30	24	18	12	15	18	18
<b>Metal workers (other)</b>	21	39	54	21	33	42	51	33	27	27	33
<b>Millwrights</b>	51	54	45	45	72	99	60	69	96	87	84
<b>Plumbers, pipefitters and steamfitters</b>	138	147	120	123	108	123	105	96	102	135	120
<b>Refrigeration and air conditioning mechanics</b>	30	24	27	36	51	45	51	57	60	39	51
<b>Sheet metal workers</b>	18	39	36	27	30	15	12	9	9	21	18
<b>Welders</b>	81	84	69	42	54	75	78	78	93	75	57
<b>Stationary engineers and power plant operators</b>	9	15	12	6	9	9	9	12	3	9	12
<b>Construction workers (other)</b>	..	..	..	..	..	..	..	..	..	..	9
<b>Other major trade groups</b>	12	6	0	3	3	9	9	3	3	9	3

Source: Statistics Canada, *Table 37-10-0023-01: Number of apprenticeship program registrations*. '..' represents counts not available for a specific reference period.

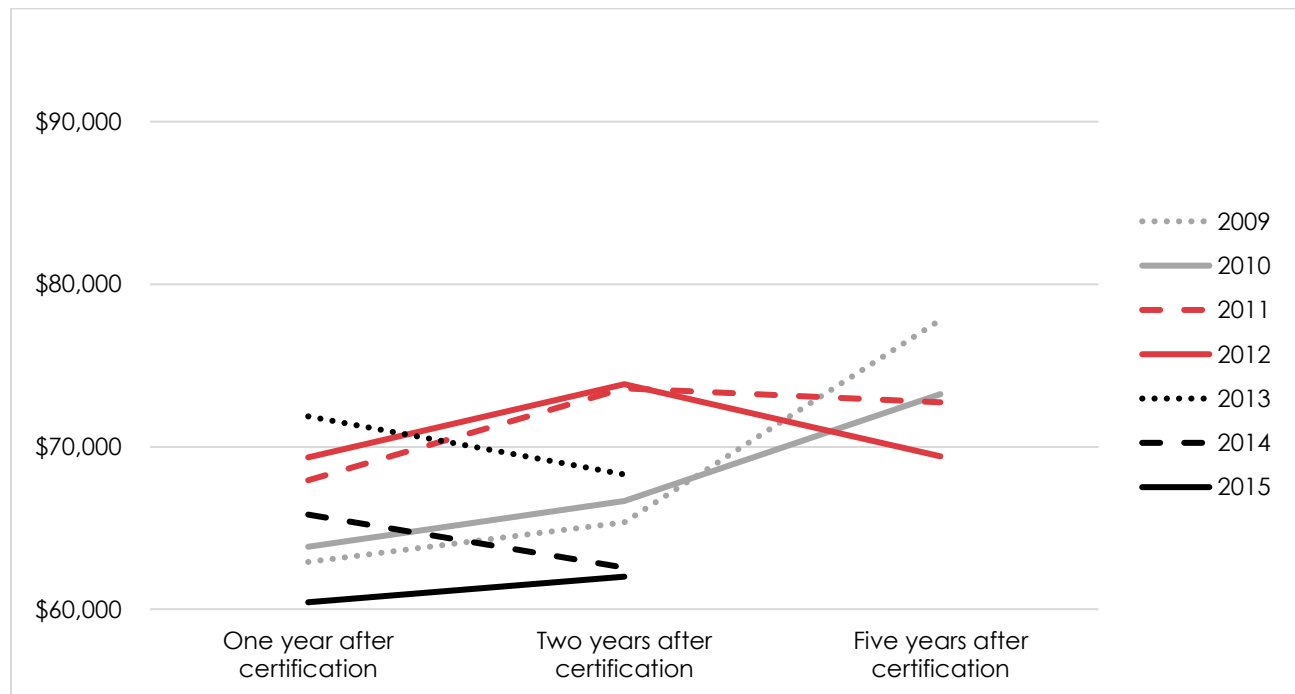
## Completers and Trade Qualifiers: Incomes and Retention Rates

Using 2017 constant Canadian dollars, this report shows that completers<sup>5</sup> and trade qualifiers have somewhat similar average taxable income patterns (see Figures 1 and 2). However, cohorts of trade qualifiers see a wider range of starting income compared to cohorts of completers. Overall, completers in NB have an average starting income ranging between \$60,000 and \$72,000 (Tables 15 and 16 in Appendix). Average starting incomes for trade qualifiers are higher but are more varied between cohorts and by years since certification. Their starting taxable income ranges between \$62,000 and \$84,000.<sup>6</sup>

Although roughly 60% of certificates granted each year are awarded to apprentices, the gap in earnings between the two groups lies in the pre-certification experience required for trade qualifiers. To successfully pass provincial examinations for a trade and receive a certificate, trade qualifiers must have sufficient work experience and knowledge in that trade (StatCan, 2010).

Completers, on the other hand, are only required to have completed an apprenticeship program. As a result, trade qualifiers are often older and have more work experience by the time they are awarded certificates. It comes as no surprise, then, that trade qualifiers often earn more than apprentices. Five years after certification, however, some cohorts of completers do catch up with and surpass their corresponding trade qualifier cohorts.

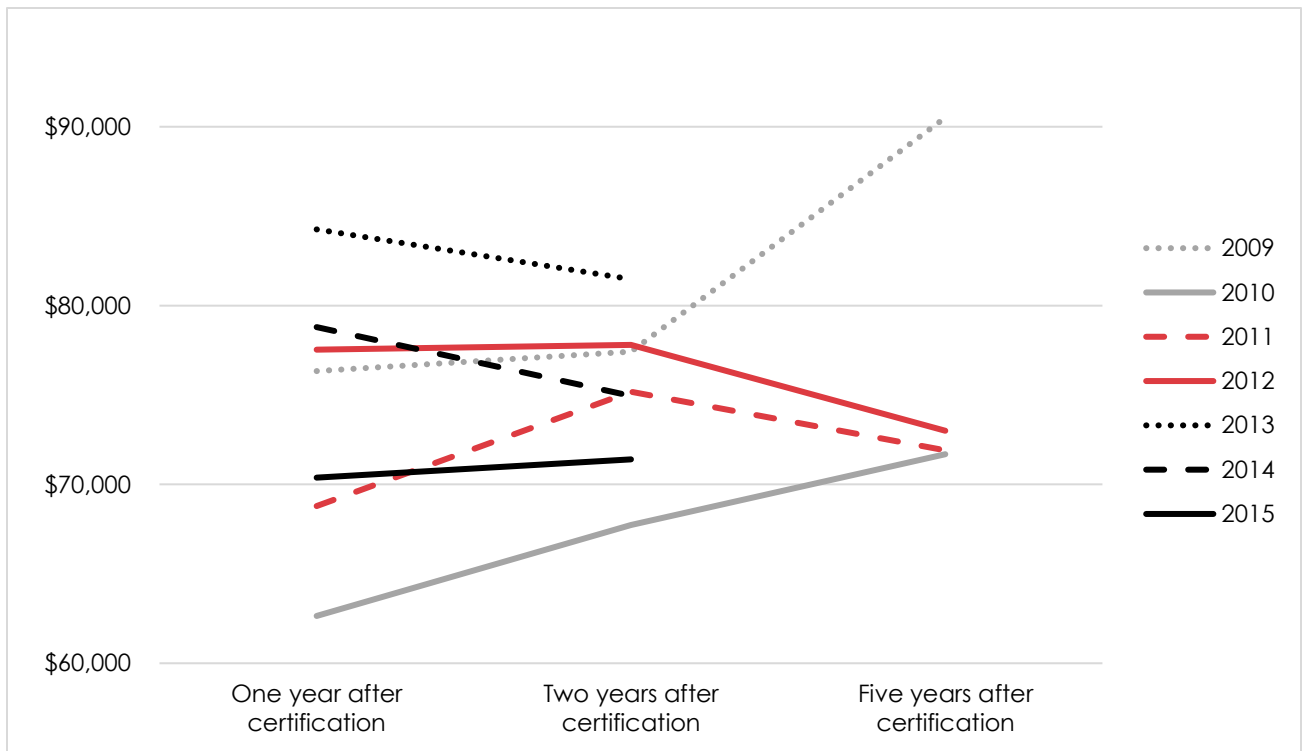
**Figure 1: Completers: average income by years since certification (in 2017 constant dollars)**



<sup>5</sup> Completers are also known as apprenticeship completers.

<sup>6</sup> The overall starting taxable income range for all certificate holders was \$63,000 - \$77,000 on average (Table 5).

**Figure 2: Trade qualifiers: average income by years since certification (in 2017 constant dollars)**



While both groups' cohorts of certificate holders have the same trends in earnings,<sup>7</sup> the magnitude of change is generally higher for completers than trade qualifiers. For instance, though there was an increase in incomes for both completers and trade qualifiers between two and five years after certification, the increase was more pronounced for completers.

The average taxable income of completers and trade qualifiers generally increases as time passes after certification. The only exception would be for the 2012 to 2014 cohorts of completers and trade qualifiers.

Starting incomes for completers and trade qualifiers have also generally risen by cohort. The starting income for the 2009 cohort of completers was \$62,905, while the 2014 cohort started at \$65,818. For trade qualifiers, the 2009 cohort had a starting average income of \$76,337 while the 2014 cohort had a starting average of \$78,796. For both trade qualifiers and completers, starting incomes were highest for the 2013 cohort. However, while average income is still highest for the 2013 cohort among trade qualifiers two years after certification, the same is not true for completers.

Completers had an average two-year retention rate of 93% during the study period while trade qualifiers had an average two-year retention rate of 76%. This can be compared to the overall sample of 87% (Table 14 in Appendix).

Similar to results found in Emery et al. (2017), retention is higher among completers than trade qualifiers (Tables 6 and 7).

<sup>7</sup> For instance, for the 2013 and 2014 cohorts in both groups, the average starting income is higher than the average income two years after certification.



**Table 6: Retention of all apprenticeship completers, 2009 to 2017 cohorts of certification**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of tax filers	x	x	710	710	590	610	560	500	600
Filed taxes in NB	x	x	690	670	560	580	540	480	590
<b>Retention rate in certification year</b>			<b>97.18%</b>	<b>94.37%</b>	<b>94.92%</b>	<b>95.08%</b>	<b>96.43%</b>	<b>96.00%</b>	<b>98.33%</b>
Number of tax filers (2 years after certification)	x	x	700	710	580	600	560		
Filed taxes in NB (2 years after certification)	x	x	650	650	530	560	540		
<b>2-year retention rate</b>			<b>92.86%</b>	<b>91.55%</b>	<b>91.38%</b>	<b>93.33%</b>	<b>96.43%</b>		

Source: ELMLP (RAIS) Microdata Files. 'x' means data were suppressed to meet the confidentiality requirements of the *Statistics Act*.

**Table 7: Retention of trade qualifiers, 2009 to 2017 cohorts of certification**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of tax filers	x	x	390	340	400	350	420	450	330
Filed taxes in NB	x	x	320	280	320	270	340	350	270
<b>Retention rate in certification year</b>			<b>82.05%</b>	<b>82.35%</b>	<b>80.00%</b>	<b>77.14%</b>	<b>80.95%</b>	<b>77.78%</b>	<b>81.82%</b>
Number of tax filers (2 years after certification)	x	x	390	330	400	360	440		
Filed taxes in NB (2 years after certification)	x	x	300	260	300	270	350		
<b>2-year retention rate</b>			<b>76.92%</b>	<b>78.79%</b>	<b>75.00%</b>	<b>75.00%</b>	<b>79.55%</b>		

Source: ELMLP (RAIS) Microdata Files. 'x' means data were suppressed to meet the confidentiality requirements of the *Statistics Act*.

A possible reason behind the higher retention rates among completers and declining retention rates among trade qualifiers could be the difference in requirements before a certificate is awarded to either group. While completers are required to complete apprenticeship programs before certification and are therefore more likely to be from the province, trade qualifiers have no such requirements and need only have acquired enough practical work experience to write a certification exam. Qualifiers could be more likely to be tradespersons from other provinces without Red Seal designation, or newcomers who do not want to go through the full apprenticeship requirements. That means they could be less likely to stay in the province than apprenticeship completers from NB.

## Trade Groups: Income and Retention Rates

This section makes use of publicly available data tables to report on income by trade group, as minimum sample size restrictions prevent microdata tables from being used. Because these public tables report only median income for certificate holders two and five years after certification from 2009 to 2016, median employment income rather than average taxable income is reported in this section and is only shown for two and five years after certification, as opposed one, two, and five years after. The time period examined is 2009 to 2016, as opposed to 2009 to 2017 (see Table 8). For retention rates, trade groups are collapsed into two broad 2016 NOC categories to adhere to Statistics Canada's disclosure requirements.

**Table 8: Median income by trade group two and five years after certification, 2009 to 2016 cohorts of certification**

	2009		2010		2011	
	2 years	5 years	2 years	5 years	2 years	5 years
<b>Automotive service technicians</b>	\$42,082	\$46,588	\$41,505	\$45,503	\$43,333	\$43,685
<b>Bricklayers</b>	X	X	X	X	\$56,011	\$60,117
<b>Carpenters</b>	\$41,798	\$48,885	\$39,697	\$40,704	\$39,697	\$44,154
<b>Construction electricians</b>	\$63,929	\$79,589	\$60,498	\$60,215	\$65,816	\$59,658
<b>Cooks</b>	\$36,080	\$39,374	\$33,626	\$40,616	\$43,128	\$44,056
<b>Crane operators</b>	X	X	X	X	\$118,533	\$105,385
<b>Heavy duty equipment technicians</b>	\$86,490	\$74,897	\$99,647	\$97,438	\$93,763	\$69,198
<b>Industrial electricians</b>	\$89,061	\$87,781	\$83,391	\$92,258	\$97,380	\$93,548
<b>Industrial instrumentation and control technicians</b>	\$88,152	\$105,610	\$102,580	\$92,512	X	X
<b>Industrial mechanics (millwright)</b>	\$78,553	\$90,791	\$79,403	\$85,464	\$77,350	\$81,827
<b>Ironworkers</b>	X	X	\$70,879	\$107,575	X	X
<b>Machinists</b>	X	X	\$49,159	\$55,923	X	X
<b>Motor vehicle body repairers</b>	X	X	X	X	X	X
<b>Plumbers</b>	\$53,558	\$57,790	\$60,743	\$53,010	\$60,440	\$49,628
<b>Powerline technicians</b>	X	X	X	X	X	X
<b>Refrigeration and air conditioning mechanics</b>	\$65,190	\$61,046	\$69,785	\$76,940	\$73,968	\$84,692
<b>Roofers</b>	X	X	X	X	X	X

Sheet metal workers	X	X	X	X	X	X
Steamfitters – pipefitters	\$71,407	\$79,188	\$88,963	\$87,106	\$78,504	\$84,183
Truck and transport mechanics	\$52,121	\$56,481	\$52,825	\$60,176	\$56,872	\$60,097
Welders	\$52,258	\$61,075	\$67,663	\$82,649	\$66,598	\$60,987

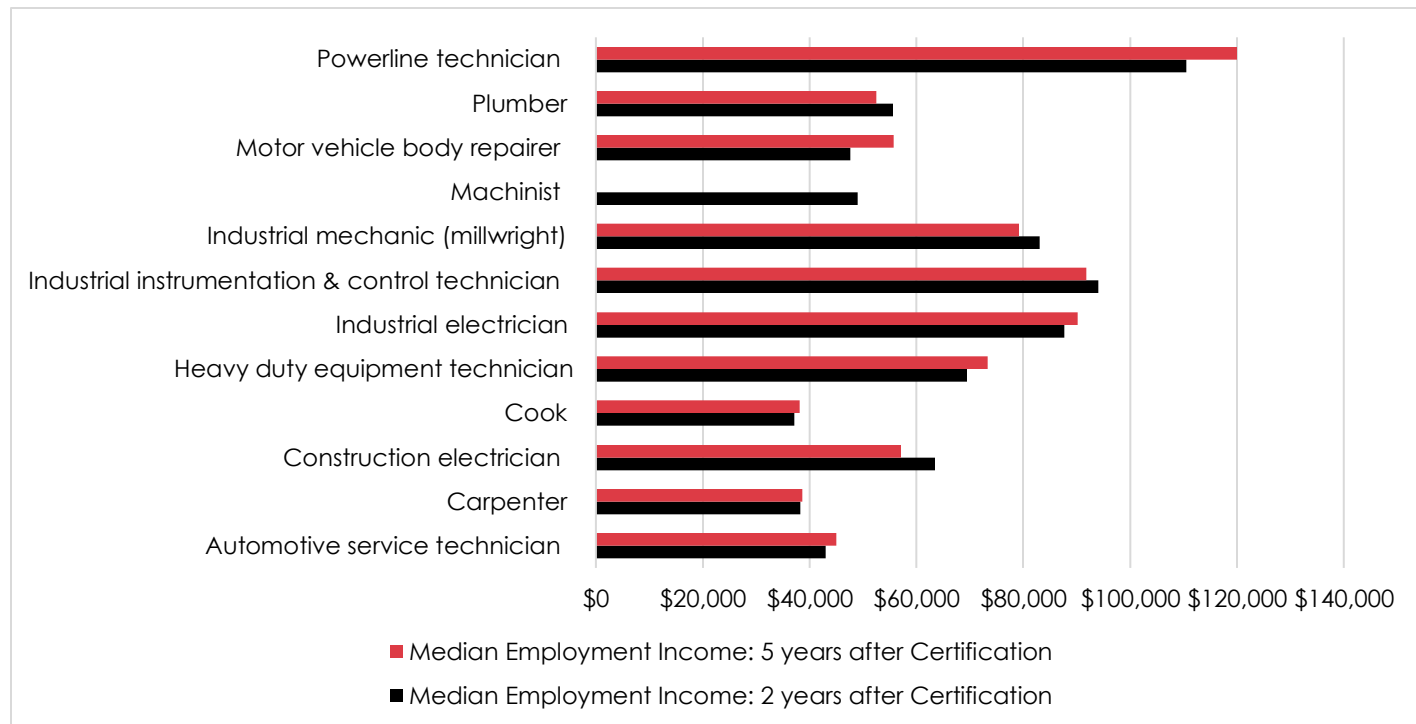
Table 8 continued...

	2012		2013		2014	2015	2016
	2 years	5 years	2 years	5 years	2 years	2 years	2 years
Automotive service technicians	\$43,069	\$44,966	\$45,327	\$47,409	\$40,645	\$42,649	\$44,496
Bricklayers	X	X	\$49,501	\$57,781	X	X	X
Carpenters	\$38,309	\$38,651	\$36,236	\$42,551	\$38,524	\$34,956	\$38,446
Construction electricians	\$63,489	\$57,155	\$58,700	\$59,530	\$56,461	\$54,340	\$55,581
Cooks	\$37,165	\$38,133	\$39,501	\$38,602	\$35,894	\$38,318	\$45,953
Crane operators	X	X	X	X	X	X	X
Heavy duty equipment technicians	\$69,413	\$73,313	\$66,050	\$68,054	\$73,567	\$69,139	\$72,756
Industrial electricians	\$87,722	\$90,234	\$80,684	\$82,248	\$80,664	\$80,645	\$79,824
Industrial instrumentation and control technicians	\$94,046	\$91,827	X	X	\$88,465	\$99,149	\$103,763
Industrial mechanics (millwright)	\$83,040	\$79,198	\$83,607	\$83,313	\$79,912	\$79,990	\$75,972
Ironworkers	X	X	X	X	X	X	X
Machinists	\$49,022	X	X	X	X	X	X
Motor vehicle body repairers	\$47,624	\$55,767	X	X	X	X	X
Plumbers	\$55,669	\$52,492	\$49,834	\$54,506	\$48,348	\$48,641	\$48,338
Powerline technicians	\$110,576	\$120,009	\$108,465	\$122,150	\$115,004	X	X
Refrigeration and air conditioning mechanics	\$70,811	\$72,737	\$65,161	\$68,533	\$77,360	\$65,308	\$73,431
Roofers	X	X	X	X	X	X	\$72,297
Sheet metal workers	\$53,519	\$57,927	\$52,834	\$54,340	\$39,736	X	\$50,801
Steamfitters – pipefitters	\$73,636	\$77,370	\$91,603	\$79,081	\$68,553	\$49,061	\$69,325
Truck and transport mechanics	\$53,900	\$57,957	\$54,672	\$59,579	\$55,024	\$64,486	\$57,292
Welders	\$87,253	\$62,189	\$75,386	\$61,505	\$69,951	\$53,988	\$61,476

2017 constant dollars. Source: Statistics Canada, Table 37-10-0194-01: Median employment income of journeypersons who certify in select trades two and five years after certification, cross-sectional analysis. 'x' means data were suppressed to meet the confidentiality requirements of the Statistics Act or that the values were too unreliable to be published.

Comparing the median income of the trade groups two and five years after certification, we find that Crane operators, Iron workers, or Power line technicians are usually the highest earners (see Table 8). However, data are not always available for these groups. When they are excluded from the equation due to data limitations, the next highest earning groups are the Industrial instrumentation and Control technician trade groups. Meanwhile, income is lowest among the Cook grade group.

**Figure 3: Median income for the 2012 cohort of certificates granted (in 2017 constant dollars)**



Source: Statistics Canada, Table 37-10-0016-01: Archived – Median employment income of apprentices who certify in select trades two and five years after certification, cross-sectional analysis, inactive. Median incomes were unavailable for the 2012 cohorts of the Bricklayers, Crane operators, Ironworkers, and Roofers trade groups.

The highest employment income growth between two and five years post-certification varies by cohort. For the 2009 cohort, it is the Construction electrician trade group (24%) while for the 2010 cohort it is the Ironworker trade group (52%). For the 2011 cohort, the Refrigeration and air conditioning mechanic trade group has the highest income increase (14%), while for the 2012 and 2013 cohort it is the Sheet metal worker (8%) and Carpenter (17%) trade groups, respectively.

The lowest median income two and five years after certification is often among the Cook or Carpenter trade groups. However, it should be noted that there is substantial growth in income for most cohorts of these trade groups. In fact, except for the 2013 cohort of Cooks, each cohort of journeypersons from both trade groups has seen growth in their median employment income between two and five years after certification.

There is variability in the median incomes of trade groups by cohort. For instance, while the 2011 cohort of Industrial electricians earns close to \$100,000 two years post-certification, the 2012 cohort earns around \$87,000. This then falls to roughly \$79,000 with the 2016 cohort.

The passing of years since certification does not necessarily translate into higher earnings for all trade groups. Plumbers from the 2009 to 2012 cohorts of certificate holders saw declines between their two-year and five-year post-certification incomes, sometimes by as much as 18%. Earlier cohorts of Welders (2009 and 2010) enjoyed high income increases (17% and 22%, respectively) between two and five years after certification. The same cannot be said for later cohorts (2012 and 2013) who experienced 29% and 18% declines. Automotive service

technicians<sup>8</sup> and Carpenters are the only trade group to never experience declines in their income between two and five years after certification between 2009 and 2013.

The amount of money being paid to later cohorts of most trade groups has declined. Two-year post-certification incomes have decreased between the earliest and most recent cohorts in the study period.<sup>9</sup> The largest decrease in income was among the Construction electrician trade group, while the largest increase in two-year post-certification median income was in the Cook trade group.

Five-year post-certification median incomes have declined over time for all trade groups except Refrigeration and air conditioning mechanics and Automotive service technicians. The largest increase is among Refrigeration and air conditioning mechanics, and the largest decrease is tied between Steamfitters – Pipefitters and Carpenters.

For brevity, the two broad groups created for retention calculations will be referred to as Category 1<sup>10</sup> and Category 2.<sup>11</sup> Retention rates are lower among trade groups in Category 1 than trade groups in Category 2 (Tables 18 and 19 in Appendix). Over time, retention rates have declined more for Category 1 than Category 2 trade groups.

## Red Seal Trades and Red Seal Endorsed Certificates: Income and Retention Rates

Of the designated occupations under the *Apprenticeship and Occupational Certification Act*, 50 are interprovincial Red Seal occupations (GNB, 2021). Despite the greater mobility – and therefore more options – provided by Red Seal occupations, non-Red Seal trade certificate holders earn considerably more on average than Red Seal trade certificate holders in most cohorts. The income gap between the two groups also widens as more time passes since certification for most cohorts (Table 9).

Income growth is sometimes higher among cohorts of non-Red Seal trade certificate holders, which might mean smaller chances of a 'catch-up' for Red Seal trade certificate holders.<sup>12</sup> It should be noted, however, that Red Seal trade certificate holders are generally younger than non-Red Seal trade certificate holders (Figure 4). This means that higher earnings among the latter group are likely due to more years of experience and a larger network among this group.

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<sup>8</sup> Automotive service technicians are a compulsory trade in NB.

<sup>9</sup> Not all trade groups have their median income reported, so the first reported income available is compared with the last reported income available for each trade group.

<sup>10</sup> Category 1 occupations include Industrial, electrical and construction; Trades & trades helpers; and Construction labourers and related occupations.

<sup>11</sup> Category 2 occupations include Maintenance and equipment operation trades; Technical occupations related to natural and applied sciences; Service supervisors and specialized service occupations; Cooks and hair stylists/barbers; Storekeepers and parts persons; and Utilities, equipment operators and controllers.

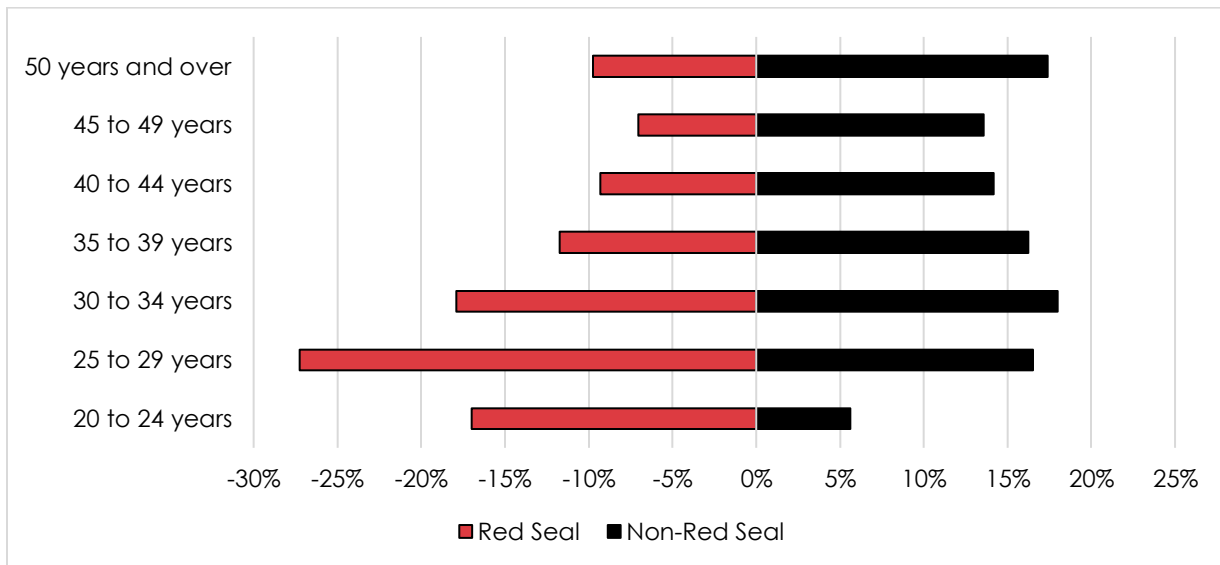
<sup>12</sup> It should be noted that there are far more Red Seal certificates than non-Red Seal certificates, and the small number of non-Red Seal certificates may be limited to a high-earning trade group.

**Table 9: Income by Red Seal designation, 2009 to 2016 cohorts of certification**

	2009	2010	2011	2012	2013	2014	2015	2016
<b>Red Seal Trades</b>								
One year after certification	\$67,830	\$63,188	\$67,825	\$71,465	\$75,407	\$70,762	\$63,880	\$65,500
Two years after certification	\$69,713	\$66,968	\$73,907	\$74,365	\$71,895	\$66,926	\$65,100	
Five years after certification	\$81,656	\$72,101	\$71,700	\$69,300				
<b>Non-Red Seal Trades</b>								
One year after certification	\$70,517	\$67,212	\$72,861	\$83,889	\$95,509	\$67,466	\$71,598	
Two years after certification	\$75,369	\$68,468	\$77,943	\$90,718	\$94,555	\$69,872	\$74,100	
Five years after certification	\$99,571	\$72,616	\$81,449	\$97,700				

Source: ELMLP (RAIS) Microdata Files. 2017 constant dollars.

**Figure 4: Age distribution, Red Seal and non-Red Seal trades, 2009 to 2019**



Source: Statistics Canada, Table 37-10-0089-01: Number of certificates granted to registered apprentices and trade qualifiers.

Red Seal endorsed certificate holders have higher retention rates than non-Red Seal endorsed certificate holders in NB. While the former have an average two-year retention of 92%, the latter have an average two-year retention rate of 65%. Red Seal endorsed certificate holders also earn less on average, sometimes by as much 27% (Tables 10 to 13).

**Table 10: Retention of non-Red Seal endorsed certificates, 2009 to 2017**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of tax filers	180	150	210	120	170	160	210	270	180
Filed taxes in NB	90	120	150	90	110	100	150	180	130
<b>Retention rate in certification year</b>	<b>50.00%</b>	<b>80.00%</b>	<b>71.43%</b>	<b>75.00%</b>	<b>64.71%</b>	<b>62.50%</b>	<b>71.43%</b>	<b>66.67%</b>	<b>72.22%</b>
Number of tax filers (2 years after certification)	180	150	210	120	170	160	220		
Filed taxes in NB (2 years after certification)	90	110	140	80	110	100	150		
<b>2-year retention rate</b>	<b>50.00%</b>	<b>73.33%</b>	<b>66.67%</b>	<b>66.67%</b>	<b>64.71%</b>	<b>62.50%</b>	<b>68.18%</b>		

Source: ELMLP (RAIS) Microdata Files.

**Table 11: Income of non-Red Seal endorsed certificates, 2009 to 2016**

	2009	2010	2011	2012	2013	2014	2015	2016
<b>Taxable Income</b>								
One year after certification	\$78,352	\$67,212	\$78,111	\$ 87,712	\$88,635	\$82,195	\$76,168	\$74,800
Two years after certification	\$77,870	\$70,611	\$82,084	\$ 87,385	\$85,182	\$79,317	\$76,500	
Five years after certification	\$104,882	\$73,955	\$80,941	\$ 87,800				

Source: ELMLP (RAIS) Microdata Files. 2017 Constant dollars.

**Table 12: Retention of Red Seal endorsed certificates, 2009 to 2017**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of tax filers	710	760	890	920	820	810	770	680	750
Filed taxes in NB	680	740	850	860	770	750	730	650	720
<b>Retention rate in certification year</b>	<b>95.77%</b>	<b>97.37%</b>	<b>95.51%</b>	<b>93.48%</b>	<b>93.90%</b>	<b>92.59%</b>	<b>94.81%</b>	<b>95.59%</b>	<b>96.00%</b>
Number of tax filers (2 years after certification)	710	770	880	920	810	800	790		
Filed taxes in NB (2 years after certification)	660	710	810	830	730	740	730		

<b>2-year retention rate</b>	<b>92.96%</b>	<b>92.21%</b>	<b>92.05%</b>	<b>90.22%</b>	<b>90.12%</b>	<b>92.50%</b>	<b>92.41%</b>		
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Source: ELMLP (RAIS) Microdata Files.

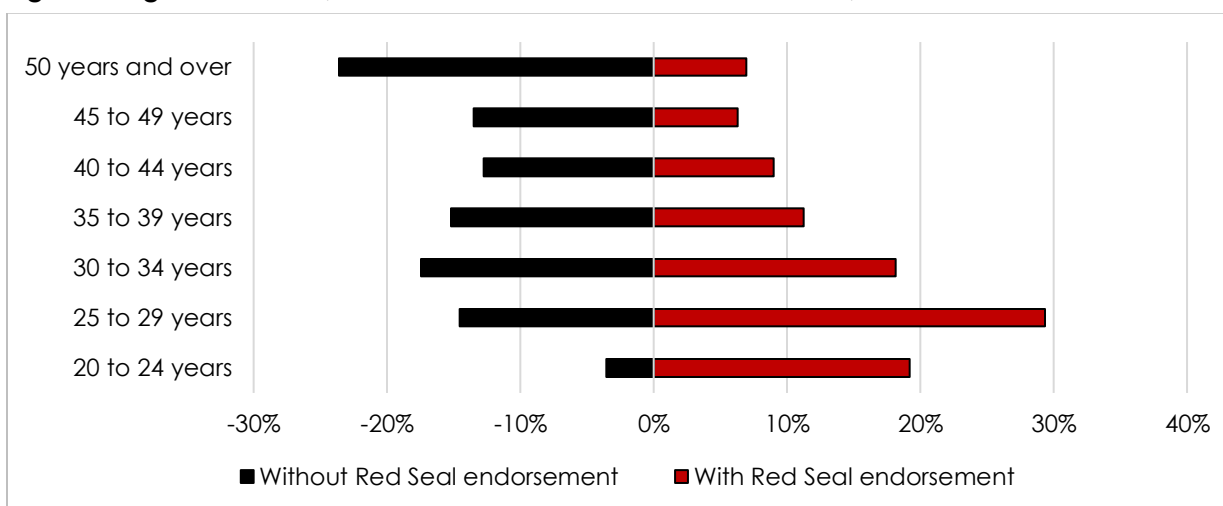
**Table 13: Income of Red Seal endorsed certificates, 2009 to 2016**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
One year after certification	\$65,480	\$62,644	\$65,896	\$69,979	\$74,470	\$68,290	\$61,544	\$64,400
Two years after certification	\$67,973	\$66,325	\$72,315	\$73,428	\$71,174	\$64,794	\$63,200	
Five years after certification	\$76,969	\$72,410	\$70,379	\$68,300				

Source: ELMLP (RAIS) Microdata Files. 2017 constant dollars.

Here, we also see that those with a form of Red Seal affiliation (in this case a Red Seal endorsement) are generally younger than those without an endorsement. Like those in Red Seal trades versus those in non-Red Seal trades, those without a Red Seal endorsement earn more than those with an endorsement. The same reasoning as above can be applied here – the years of experience garnered by the older non-Red Seal endorsed certificate holders is the likely reason for their higher earnings compared to those who are endorsed.

**Figure 5: Age distribution, with and without Red Seal endorsement, 2009 to 2019**



Source: Statistics Canada, Table 37-10-0089-01: Number of certificates granted to registered apprentices and trade qualifiers.

A possible explanation for the higher retention among Red Seal endorsed journeypersons is the 'shadow population' of journeypersons. The shadow population of journeypersons refers to certified journeypersons who work in one province or territory while continuing to reside in another (Government of Canada, 2020).

According to Statistics Canada, of the 1,700 journey persons certified in Nova Scotia (NS), Newfoundland and Labrador (NL) and NB in 2014, 26% were employed in other provinces. NB was named as one of the provinces in which the majority of shadow populations reside. This

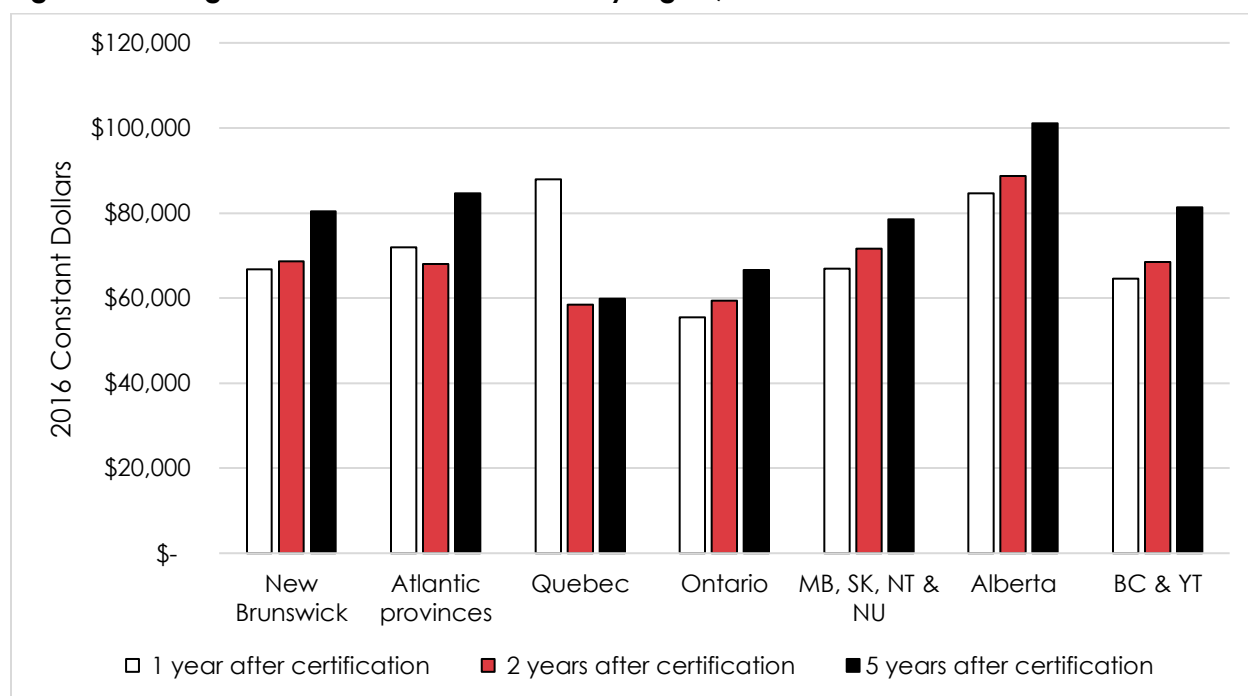


means that the high retention rates among Red Seal endorsed journeypersons may be due to the number of those who reside but do not work in NB.

The province of taxation, which is used to calculate retention, is based on residence as of December 31 of the tax year. Given the fact that a Red Seal endorsement allows journeypersons to work anywhere in Canada, it is likely that a portion of Red Seal endorsed journeypersons may remain in NB after certification but work elsewhere in Canada.

Compared to other provinces, NB Red Seal trade certificate holders earn competitive wages (Figure 6). For the 2009 cohort of certificate holders, those certified in NB received the third-highest income five years after certification among Canadian provinces/regions. Compared to the Atlantic region, the 2009 cohort of NB Red Seal trade certificate holders earned slightly more two years after certification. This gap in earnings fluctuates over time, as the difference increases to slightly over \$4,000 five years after certification in favour of the Atlantic average.

**Figure 6: Average income of Red Seal trades by region, 2009 cohort**



Source: LMIC-EPRI RAIS report and ELMLP (RAIS) Microdata Files.

## Conclusion

This report investigates the retention and labour market outcomes of trade certificate holders in NB by certification cohort. Between 2009 and 2019, more than 11,000 individuals were awarded trade certificates in NB, equaling roughly 1,000 each year. The majority were given to males rather than females, apprentices rather than trade qualifiers, and were in Red Seal trades rather than non-Red Seal trades. There were also more completers than trade qualifiers in each cohort, with approximately 62% of certificates granted to completers.

Over 5,000 people are registered in an apprenticeship program in NB each year (Table 2). Of those 5,000, slightly over 1,000 are new registrations, and about 4,000 are already registered at the start of the reporting year. This makes for approximately a 5 to 1 ratio of total registrations to certificates granted, a 1 to 1 ratio of new registrations to certificates granted, and a 4 to 1 ratio of existing registrations to certificates granted each reporting year.

For apprentices or completers alone (i.e., certificates granted to trade qualifiers are excluded), the ratios are roughly 9 to 1, 2 to 1, and 7 to 1, respectively.

Compared to 2009, there were 15% fewer registrations and 8% more certificates granted at the end of the study period.

- Roughly 60% of certificates and registrations in NB are in one of the following major trade groups: Automotive service technician, Plumber/Pipefitter/Steamfitter, Carpenter, Welder, or Electrician. Three out of five of these groups contain trades for which certification is considered compulsory in NB.<sup>13</sup>
- The largest increase in registrations was among Refrigeration and air conditioning mechanics (90%), while the largest increase in certifications was in the Exterior finishing (900%) trade group.
- Overall, completers in NB have an average starting income ranging between \$61,000 and \$74,000. Average starting incomes for trade qualifiers are higher and more varied between cohorts and by years since certification. Their taxable income ranges between \$64,000 and \$86,000.
- Retention is higher among completers than trade qualifiers. Retention has also declined for trade qualifiers while remaining relatively stable for completers. The same runs true for the rest of Canada. A report by Red Seal Canada (2014) reveals that about 8% of 2008 trade qualifiers, compared to 3.8% of apprenticeship completers, were located in a province other than their province of registration in 2009.
- Comparing the median income of the trade groups two and five years after certification, we find that Crane operators, Iron workers, or Power line technicians are usually the highest earners (see Table 8). However, data are not always available for these groups. When they are excluded from the equation due to data limitations, the next highest earning groups are the Industrial instrumentation and Control technician trade groups. Meanwhile, income is lowest among the Cook grade group.
- More years since certification does not necessarily translate into higher earnings for all trade groups. For example, Plumbers in the 2010-2012 cohorts of certificate holders had a lower average income five years after certification compared to two years after certification, sometimes by as much as 18%.
- The amount of money paid to later cohorts of most trade groups has declined. Two-year post-certification incomes have decreased between the earliest and most recent cohorts in the study period.<sup>14</sup> The largest decrease in income was among the Construction electrician trade group, while the largest increase was in the Carpenter trade group.

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<sup>13</sup> These trades are Automotive service technician, Automotive service technician (Steering, Suspension and Brakes), Construction electrician, Plumber, and Steamfitter/Pipefitter.

<sup>14</sup> Not all trade groups have their median income reported, so the first reported income available is compared with the last reported income available for each trade group.

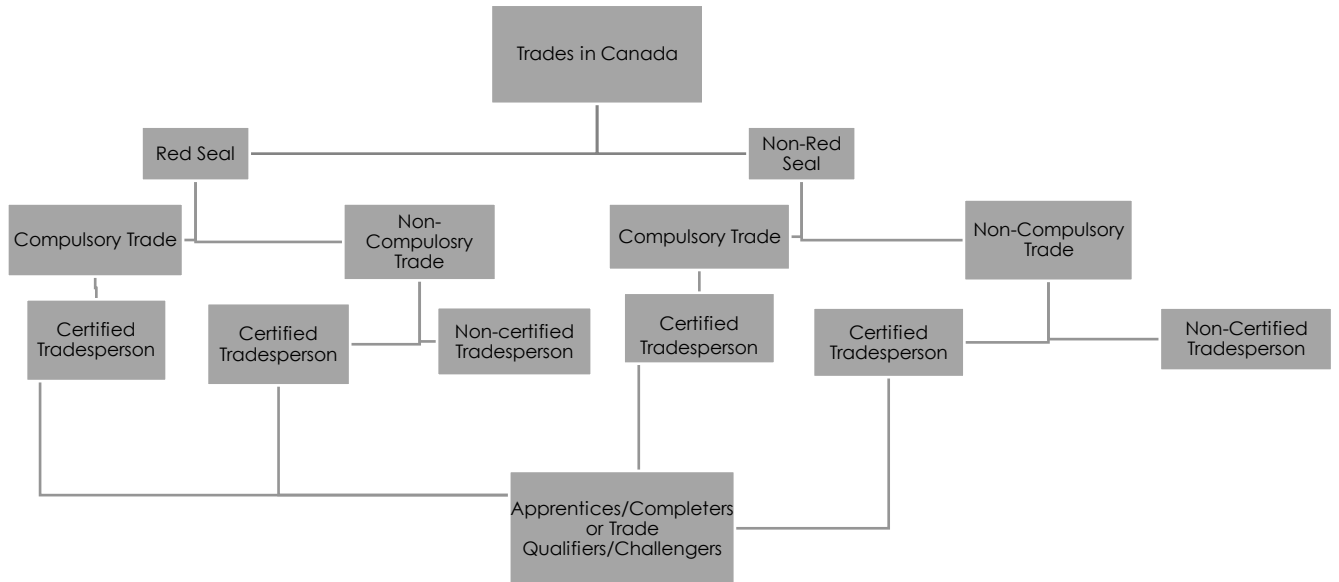
- Non-Red Seal trade certificate holders earn considerably more on average than Red Seal trade certificate holders for most cohorts. The higher number of Red Seal trade certified tradespersons compared to non-Red Seal tradespersons might mean more competition for jobs among the Red Seal trades, creating less competitive wages being offered for this group. Income growth is also sometimes higher among cohorts of non-Red Seal trade certificate holders, which means smaller chances of a 'catch-up' for Red Seal trade certificate holders.
- While Red Seal endorsed certificate holders have an average two-year retention rate of 92%, non-Red Seal endorsed certificate holders have an average two-year retention rate of 64%. Red Seal endorsed certificate holders also earn less on average, sometimes by as much 20%.

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## Appendix

Figure 7: Trades in Canada, summary chart



**Table 14: Income and retention of all certificate holders, 2009 to 2016/17**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of tax filers	890	920	1,090	1,040	990	970	980	950	930
Filed taxes in NB	780	860	1,000	940	870	850	880	830	860
<b>Retention rate in certification year</b>	<b>87.64%</b>	<b>93.48%</b>	<b>91.74%</b>	<b>90.38%</b>	<b>87.88%</b>	<b>87.63%</b>	<b>89.80%</b>	<b>87.37%</b>	<b>92.5%</b>
Number of tax filers (2 years after certification)	890	920	1,090	1,040	980	960	1000		
Filed taxes in NB (2 years after certification)	750	820	950	910	840	830	880		
<b>2-year retention rate</b>	<b>84.27%</b>	<b>89.13%</b>	<b>87.16%</b>	<b>87.50%</b>	<b>85.71%</b>	<b>86.46%</b>	<b>88.0%</b>		
<b>Taxable Income</b>									
One year after certification	\$68,166	\$63,406	\$68,147	\$71,996	\$76,865	\$70,556	\$64,692	\$67,300	
Two years after certification	\$70,040	\$67,075	\$74,120	\$75,095	\$73,543	\$67,130	\$66,100		
Five years after certification	\$82,698	\$72,616	\$72,411	\$70,600					

Source: ELMLP (RAIS) Microdata Files. 2017 constant dollars.

**Table 15: Income of all apprenticeship completers, 2009 to 2016**

	2009	2010	2011	2012	2013	2014	2015	2016
One year after certification	\$62,905	\$63,841	\$67,932	\$69,341	\$71,866	\$65,818	\$60,427	\$63,200
Two years after certification	\$65,363	\$66,647	\$73,589	\$73,845	\$68,290	\$62,560	\$62,000	
Five years after certification	\$77,803	\$73,234	\$72,715	\$69,400				

Source: ELMLP (RAIS) Microdata Files. 2017 constant dollars.

**Table 16: Income of trade qualifiers, 2009 to 2016**

	2009	2010	2011	2012	2013	2014	2015	2016
One year after certification	\$76,337	\$62,644	\$68,789	\$77,518	\$84,260	\$78,796	\$70,379	\$71,800
Two years after certification	\$77,435	\$67,718	\$75,182	\$77,803	\$81,474	\$74,950	\$71,400	
Five years after certification	\$90,509	\$71,689	\$71,903	\$73,000				

Source: ELMLP (RAIS) Microdata Files. 2017 constant dollars.

**Table 17: Income by gender, 2009 to 2016**

	2009	2010	2011	2012	2013	2014	2015	2016
<b>Male</b>								
One year after certification	\$68,390	\$64,058	\$68,682	\$72,739	\$77,907	\$71,380	\$65,606	\$67,600
Two years after certification	\$70,475	\$67,825	\$74,969	\$75,928	\$74,367	\$67,840	\$66,900	
Five years after certification	\$83,219	\$73,337	\$73,121	\$71,200				
<b>Female</b>								
One year after certification	\$52,272	\$31,213	\$47,038	\$44,281	\$41,870	\$45,836	\$42,451	\$54,600
Two years after certification	\$46,657	\$34,716	\$40,458	\$44,994	\$43,673	\$48,341	\$45,100	
Five years after certification	\$57,597	\$43,364	\$39,303	\$50,800				

Source: ELMLP (RAIS) Microdata Files. 2017 constant dollars.

**Table 18: Income and retention of Category 1 occupations,<sup>15</sup> 2009 to 2016/17**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of tax filers	x	x	600	620	560	570	540	480	480
Filed taxes in NB	x	x	540	570	500	500	470	390	420
<b>Retention rate in certification year</b>			<b>90.00%</b>	<b>91.94%</b>	<b>89.29%</b>	<b>87.72%</b>	<b>87.04%</b>	<b>81.25%</b>	<b>87.50%</b>
Number of tax filers (2 years after certification)	x	x	590	620	560	570	540		
Filed taxes in NB (2 years after certification)	x	x	510	550	480	490	460		
<b>2-year retention rate</b>			<b>86.44%</b>	<b>88.71%</b>	<b>85.71%</b>	<b>85.96%</b>	<b>85.19%</b>		
<b>Taxable Income</b>									
One year after certification	\$71,188	\$64,493	\$68,147	\$72,846	\$75,511	\$71,483	\$65,302	\$66,500	
Two years after certification	\$71,889	\$67,718	\$74,651	\$76,032	\$71,277	\$67,130	\$64,900		
Five years after certification	\$87,385	\$72,822	\$71,903	\$69,300					

Source: ELMLP (RAIS) Microdata Files. 2017 constant dollars. 'x' means data were suppressed to meet the confidentiality requirements of the *Statistics Act*.

<sup>15</sup> Category 1 occupations include Industrial, electrical and construction; Trades & trades helpers; and Construction labourers and related occupations.



**Table 19: Income and retention of Category 2 occupations,<sup>16</sup> 2009 to 2016/17**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of tax filers	x	x	500	420	420	400	450	470	450
Filed taxes in NB	x	x	460	370	370	360	410	440	430
<b>Retention rate in certification year</b>			<b>92.00%</b>	<b>88.10%</b>	<b>88.10%</b>	<b>90.00%</b>	<b>91.11%</b>	<b>93.62%</b>	<b>95.56%</b>
Number of tax filers (2 years after certification)	x	x	500	420	420	390	460		
Filed taxes in NB (2 years after certification)	x	x	440	360	360	350	420		
<b>2-year retention rate</b>			<b>88.00%</b>	<b>85.71%</b>	<b>85.71%</b>	<b>89.74%</b>	<b>91.30%</b>		
<b>Taxable Income</b>									
One year after certification	\$63,577	\$62,100	\$68,254	\$70,616	\$78,844	\$69,217	\$63,981	\$68,200	
Two years after certification	\$67,212	\$66,111	\$73,589	\$73,741	\$76,633	\$67,231	\$67,500		
Five years after certification	\$75,928	\$72,307	\$73,020	\$72,500					

Source: ELMPL (RAIS) Microdata Files. 2017 constant dollars. 'x' means data were suppressed to meet the confidentiality requirements of the *Statistics Act*.

<sup>16</sup> Category 2 occupations include Maintenance and equipment operation trades; Technical occupations related to natural and applied sciences; Service supervisors and specialized service occupations: Cooks and hair stylists/barbers; Storekeepers and parts persons; and Utilities, equipment operators and controllers.