

Mobility and Retention of Labour Market Training Program Participants



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Project Title

Mobility and retention of labour market training program participants

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Acronyms

CDM & CDM Strategies

- Career Decision Making and Career Decision Making Strategies

SE & SE Strategies

- Skills Enhancement and Skills Enhancement Strategies

SEED & SEED Co-op

- Student Employment Experience Development and Student Employment Experience Development Co-operative

WES

- Workplace Essential Skills

Executive Summary

This report measures the retention in New Brunswick of participants in programs designed and implemented by the Government of New Brunswick's Department of Post-Secondary Education, Training and Labour (PETL) to help individuals prepare for, obtain, and maintain employment in New Brunswick. Information pertaining to these programs and their participants is captured in the ContactNB database, housed on the secure platform at the New Brunswick Institute for Research, Data and Training (NB-IRDT).

These programs – also referred to as “interventions” – were analyzed to determine whether trained individuals remained in New Brunswick after program completion. 1-year, 3-year, and 5-year retention rates are presented for individuals who completed these interventions between 1999 and 2018, inclusive.

- 1-year retention rates are around 95% or greater, 3-year rates are near 93%, and 5-year retention rates are around 90%. These retention rates are higher than the retention rates in other NB-IRDT studies on the retention of graduates of public post-secondary education institutions, apprentices, and immigrants in New Brunswick.
- We find no major differences between the retention rates of male and female participants and individuals with varying levels of education. Results by intervention types/programs captured in ContactNB will be available in future studies.
- Young people and immigrants appear to be more mobile, as reflected by slightly lower 5-year retention rates. In addition, English speakers appear slightly more mobile than French speakers.
- Retention rates for training program participants with GED (General Educational Development) diplomas are similar to overall retention rates, with 1-year retention rates above 95%, 3-year retention rates above 90%, and 5-year retention rates above 85%.

While this report does not consider whether labour market training programs result in better labour force outcomes, future planned work will evaluate labour market success through linking the ContactNB database with tax records.

Introduction

Population retention in New Brunswick (NB) is a pressing policy concern. Our province currently faces an aging population and net losses in interprovincial youth migration, creating a demographic shift that will continue to impact the province's economy, tax base, and social support system.

According to *New Beginnings: A Population Growth Strategy for New Brunswick 2019-2024* (GNB, 2019), the number of working-age individuals for each senior in the province decreased from 4.6 to 3.1 between 2008 and 2018, and this ratio is expected to decline further.

To help address this issue, the Government of New Brunswick's Department of Post-Secondary Education, Training and Labour (PETL) has designed and delivered a variety of labour market training programs to help individuals prepare for, obtain, and maintain employment in NB. If program participants end up finding employment in NB instead of relocating elsewhere, this may address a portion of the issues associated with demographic shift.

Objective

The objective of this report is to present a statistical description of individuals who participated in different labour market training and skills development programs developed by PETL and captured in the ContactNB database at the New Brunswick Institute for Research, Data and Training (NB-IRDT).

This report examines whether trained individuals remained in NB after completing a training program. It also analyzes the retention rates of participants with different demographic profiles to ascertain which participants have a higher probability of remaining in the province.

The number of labour market training programs – referred to as “interventions” in the ContactNB database – completed by individuals is broken down by intervention type and by participants' sex, language, immigrant status, age group, and employment status. 1-, 3- and 5-year retention rates of participants who completed various training programs are presented.

This study links data from the ContactNB database and the Citizen Database for analysis. The longitudinal nature of these data files allows individuals and their mobility decisions to be tracked and observed over time. Results by specific intervention type are not available for this study but will be examined in future studies.

The layout of the report is as follows. First, it reviews the literature on different dimensions of training and skills development programs, followed by a discussion of the key definitions, concepts, databases, and methodology used in this study. The next section presents the empirical findings. Finally, the report summarizes the main results, draws policy implications, and suggests potential avenues for future work. The Appendix shows additional tables that correspond to figures in the report.

Background

While there is ample literature on employment and earnings effects of various training programs, there is a lack of studies on the retention of trained individuals within particular jurisdictions. Of the existing literature, a study by Boco et al. (2021) most closely addresses the question of retention of NB individuals in apprenticeship programs. Using data from Statistics Canada's Education and Labour Market Longitudinal Platform to examine the retention rates of apprenticeship completers from 2009-2017, the researchers found the retention rate within the certification year to be above 95% for most years, and the retention rate after 2 years to be above 90% for most years.

Another study by Emery et al. (2017) also addresses whether public investment in training programs is a success in terms of retention. The authors find that 95% of those who complete apprenticeship programs in the Atlantic Provinces reside in their province of training two years after completion. They conclude that even if trained participants commute to another province for work, participants still tend to reside in the same province they were trained in – thus, the province of residence will still benefit from receiving higher taxes paid.

More recent studies from NB-IRDT on immigrant retention (Leonard et al., 2019) and student retention (Bhuiyan et al., 2020) in particular highlight the importance of province of origin, as residents of NB attending NB post-secondary institutions are substantially more likely to remain in NB post-graduation than students from other parts of Canada coming to NB to study.

Findings from the 2015 National Apprenticeship Survey (Frank & Jovic, 2017) – based on apprenticeship program participants listed on the Registered Apprenticeship Information System (RAIS) – show that only about 4% of those in a registered apprenticeship program moved to a different province or territory for a job after program completion. Survey results also show that those who completed training had a higher average annual income than those who discontinued. Likewise, 80% of those who completed a training program obtained a permanent job. Finally, results show that immigrants have the same rate of employment as Canadian-born apprentices, but women and individuals with an Aboriginal background have lower rates.

Employment and Social Development Canada (ESDC) has evaluated Training and Skills Development programs funded through the Labour Market Development Agreement. ESDC (2017a) shows that those who took part in these programs experienced better labour market outcomes in terms of employment and wages than those who did not. According to an ESDC study (2017b) focused on NB, both active and former employment insurance (EI) claimants increased their labour market attachment through increases in earnings, incidence of employment, and a decreased use of government support in terms of EI and social assistance.

Overall, the literature shows that training program completers tend to have higher labour market outcomes than non-participants. Further, Emery et al. (2017) show that participants who completed apprenticeship programs tend to stay in their province of training. If individuals who completed different training programs overseen by PETL also end up staying in NB, this outcome might suggest significant positive returns to the resources spent on training by the government.

Data and Methodology

The results of this report are based on data from the ContactNB data set and Citizen Database available through the secure platform at NB-IRDT.

ContactNB contains data on individuals who have sought employment counselling from PETL. This includes information on initial assessment, action plans, interventions, applicable education history, and employment history, as well as basic demographic information. The Citizen Database, on the other hand, contains basic demographic and location information on all residents of NB who have been issued a provincial Medicare card. This study links data from ContactNB and the Citizen Database for analysis, as the longitudinal nature of these databases allows individuals – and their mobility – to be tracked and observed over time.

As in previous work on the retention of immigrants (Leonard et al., 2019; McDonald et al., 2018), this report assumes that an individual's NB Medicare status identifies whether they remained in the province and, if so, how long they remained. An individual's departure from the province is determined by the date of termination of their active Medicare status in the Citizen Database.

This study includes individuals with an active Medicare status in the Citizen Database who completed any form of training or skills development interventions listed in the ContactNB data set at any point between 1999 and 2018 inclusive. Some individuals could not be linked between the data sets because they do not have unique identifiers. This could be due to many factors, including lack of linkable information such as date of birth, names with differences in spelling, and so forth. Individuals with missing unique identifiers in ContactNB were omitted from analysis, as they could not be linked. However, the linkage rate is greater than 90% for most years.

This study reports counts of interventions completed across different profile categories and across years. Profile categories include sex, age group, education, funding source, immigrant status, language, and employment status. For these counts, the unit of observations is the number of interventions completed, not the number of individuals who completed interventions, because there are individuals who participated in and completed multiple training and skills development interventions both in the same year and across different years.

This report also presents 1-, 3- and 5-year retention rates of participants who completed various training programs. If an individual resides in the province 1, 3, or 5 years after the completion of their training intervention, that individual is considered retained for 1, 3, or 5 years, respectively. For an individual who completed multiple interventions within a year, only the latest intervention is considered in the calculation of retention rates.¹ For individuals completing interventions in different years, each instance of an intervention is considered as a separate observation. Retention rates are presented in terms of percentages. Aggregated 1-, 3-, and 5-year retention rates are based on data from 1999-2017, from 1999-2015, and from 1999-2013, respectively.

¹ Other approaches are possible, such as analyzing retention measured from an individual's first intervention only, or from the last recorded intervention. More complex analysis could model the impact of subsequent interventions as time varying parameters in a duration model, but such approaches are beyond the scope of this work.

Retention Rates for Training Program Participants

The results presented in this report include

- Overall retention rates for training program participants
- Retention rates for training program participants broken down by categorization
- Retention rates for training program participants with GED diplomas.

Figures in this report are accompanied by corresponding tables in the Appendix.

Overall Retention Rates for Training Program Participants

Table 1 below shows the number of completed interventions each year from 1999 to 2018. Because an individual could have completed multiple interventions in a year, the number of interventions completed each year is higher than the number of individuals completing the interventions.

There is a rise in the number of completed interventions from 2009 onward, and this may be attributed to the *Omnibus Amending Agreement to the Canada – New Brunswick Labour Market Agreement and Labour Market Development Agreement* (Government of Canada, 2020). This program was an agreement between the Government of Canada and Government of New Brunswick, signed in 2008, in which the Government of Canada provides NB with funding towards the costs of programs that enhance the labour market participation of the unemployed who do not qualify for assistance under programs supported under the Employment Insurance Act and of employed individuals who are low skilled.²

The “Completed Interventions in ContactNB” column in Table 1 indicates the number of interventions completed based on ContactNB data only, regardless of whether individuals can be matched with other data sets.

The “Completed Interventions linked to Medicare” column indicates the number of interventions completed after linking ContactNB data with the Citizen Database.³ Because linking different databases requires unique identifiers, the observations without any unique identifiers in the ContactNB data set have been dropped from this column. However, the linkage rate is high – greater than 90% for most years (see the “Percentage linked to Medicare” column).

In a given year, individuals could have completed multiple interventions. As such, the “Number of Individuals with Completed Interventions linked to Medicare” column shows the number of unique individuals who have completed different interventions based on available unique identifiers.

² <https://www.canada.ca/en/employment-social-development/programs/training-agreements/lmda/nb-omnibus.html>

³ For details on the linkage process, please see Leonard et al. (2019) and Bhuiyan et al. (2020).

Table 1: Number of ContactNB Completed Interventions by Year of Completion (1999-2018)

Year	Completed Interventions in ContactNB	Completed Interventions Linked to Medicare	Percentage Linked to Medicare	Number of Individuals with Completed Interventions Linked to Medicare
1999	307	276	89.9	193
2000	284	244	85.9	168
2001	618	580	93.9	415
2002	732	693	94.7	449
2003	905	863	95.4	562
2004	1,402	1,330	94.9	763
2005	1,950	1,798	92.2	939
2006	3,019	2,802	92.8	1,167
2007	3,849	3,614	93.9	1,515
2008	5,109	4,765	93.3	2,193
2009	10,362	9,806	94.6	5,861
2010	39,782	38,399	96.5	21,079
2011	34,236	32,933	96.2	18,556
2012	30,948	29,614	95.7	16,723
2013	31,319	29,855	95.3	15,587
2014	33,270	31,811	95.6	16,391
2015	34,825	33,318	95.7	16,822
2016	42,979	41,216	95.9	20,780
2017	43,399	41,521	95.7	21,524
2018	41,414	39,694	95.8	21,096
Total	360,709	345,132	95.7	182,783

Figure 1 shows the 1-, 3-, and 5-year retention rates of training program participants, with Table 10 in the Appendix giving the corresponding numbers.

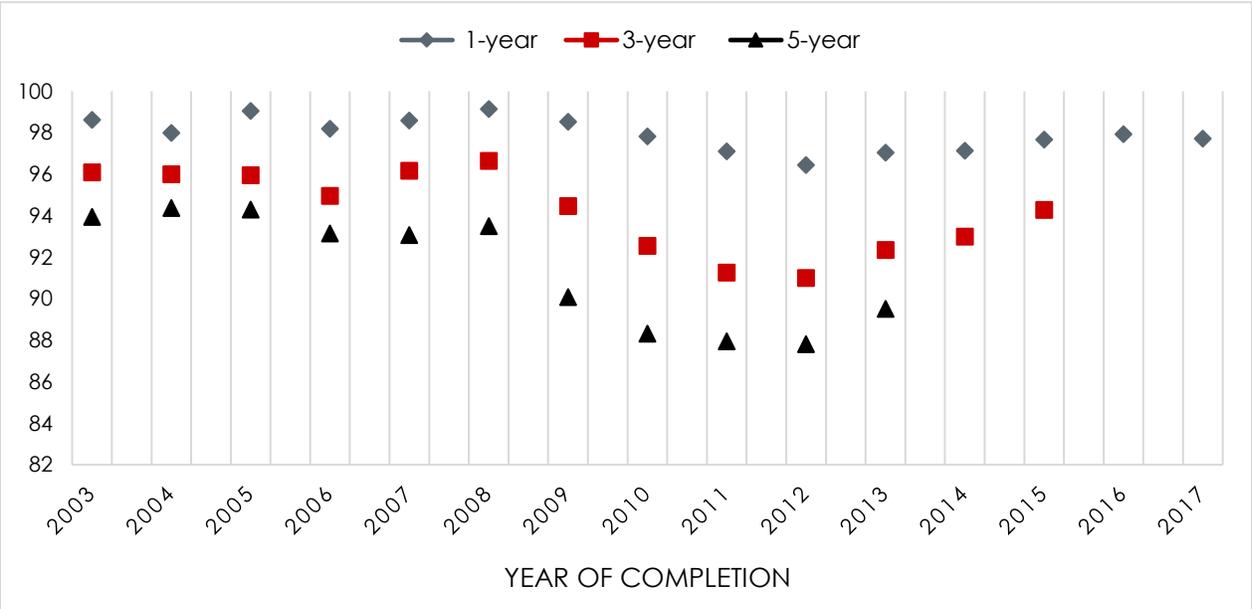
Due to small sample sizes in earlier years, this study reports retention rates from 2003 onward. As mentioned previously, an individual is considered to be retained in the province if they still reside in the province after a certain period following completion of a training program. For the purposes of this study, the periods in question are 1, 3, and 5 years after completion of a training program. If an individual completed multiple interventions within a year, only the latest intervention is considered in the calculation of retention rates. The retention rate by year is therefore based on individuals who completed training interventions and not on the number of training interventions themselves.

The 5-year retention rates in Figure 1 range from approximately 87% to 95%. **These findings suggest that most individuals who complete different training interventions administered by PETL tend to remain in NB.** These results are similar to the findings of a previous NB-IRDT study that showed a 2-year retention rate of over 90% for apprenticeship completers in New Brunswick

(Boco et al., 2021) and another study that showed about 95% of those who complete apprenticeship programs in the Atlantic Provinces reside in their province of training two years after completion (Emery et al., 2017).

Also notable is the cyclical pattern displayed in the retention rates, with a decline following the recession of 2007-08 and subsequent recovery. This is broadly consistent with other NB-IRDT work on immigrant retention that has found decreasing retention rates over the 2008-2010 period (Leonard et al., 2018). The decline also coincides with the rapid increase in program size. Though the magnitude of the decline and subsequent recovery are not large, future work could attempt to differentiate cyclical and composition factors in accounting for this pattern.

Figure 1: 1-, 3-, and 5-Year Retention Rates by Year of Completion of Training Interventions



Retention Rates by Additional Categorizations of Training Program Participants

Between 2003 and 2018, males accounted for about 58% of completed interventions, with females accounting for the remaining 42%. As shown in Table 2, there are hardly any differences in the retention rates for male and female program completers.

Table 2: Retention Rate by Sex (1999-2017)

Sex	1-year	3-year	5-year
Male	97.6%	92.7%	88.7%
Female	97.4%	92.6%	89.1%

Between 2003 and 2018, English speakers accounted for about 61% of completed interventions, and French speakers accounted for about 39%.

The 5-year retention rates shown in Table 3 suggest that English speakers who have completed interventions are slightly more mobile than French speakers, as the 5-year retention rate for English speakers is lower than that of French speakers by 3.5 percentage points.

Due to lower language barriers, Anglophones have historically been more mobile in Canada. For instance, Emery et al. (2019) shows that both unilingual and bilingual Francophone men and women in NB were less likely to emigrate from the province between 2001 and 2016 than unilingual and bilingual English New Brunswickers.

Table 3: Retention Rate by Official Language (1999-2017)

Language	1-year	3-year	5-year
English	97.3%	91.7%	87.3%
French	97.9%	94.0%	90.8%

Results suggest that most training program completers were Canadian citizens. Table 4 reports retention rates by immigrant status, with results showing that Permanent Residents⁴ are more likely to leave their province of training than are Canadian citizens.

However, a previous NB-IRDT study (Leonard et al., 2019) finds that 5-year retention rates of immigrants are about 50%. Thus, it appears that immigrants who have taken part in some training interventions are more likely to stay.

Table 4: Retention Rate by Immigrant Status (1999-2017)

Immigrant Status	1-year	3-year	5-year
Citizen	97.6%	92.9%	89.1%
Permanent Resident	90.0%	78.1%	70.3%

Between 2003 and 2018, individuals with at most a high school diploma accounted for about 48% of completed interventions, while individuals with a diploma greater than high school accounted for about 52% of completed interventions. As shown in Table 5, there are hardly any differences in the retention rates between the two educational categories.

Table 5: Retention Rate by Educational Attainment (1999-2017)

Education	1-year	3-year	5-year
High School or Below	97.8%	93.1%	89.3%
Above High School	97.2%	92.2%	88.3%

⁴ A permanent resident is someone who has been given permanent resident status by immigrating to Canada but is not a Canadian citizen. Permanent residents are citizens of other countries. A person in Canada temporarily, like a student or foreign worker, is not a permanent resident.

Table 6 shows retention rates by age group, with the 5-year retention rates suggesting that younger individuals are more mobile than older adults, which is consistent with results from other studies on migration by age (see Emery et al., 2019, and McDonald et al., 2018).

For instance, one previous NB-IRDT study (Emery et al., 2019) used census data to study out-migration rates of NB residents. Results of that study show that the rate of out-migration is close to 15% for those in the 25-34 age group, about 6% for those in the 35-44 age group, and less than 5% for those in the 45-54 and 55-64 age groups. These findings imply that as individuals age, it becomes less likely that they will leave the province.

Similarly, using Medicare registry data, McDonald et al. (2018) evaluated annual outmigration trends by year for native New Brunswickers, previous residents of other provinces, and immigrants in the young adult and adult age cohorts. Results show that for New Brunswickers, the annual out-migration rate is close to 2% for those in the 19-29 age group and about 0.5% for those in the 30-59 age group. The study finds similar patterns for immigrants and previous residents of other provinces by age group.

Table 6: Retention Rate by Age Group (1999-2017)

Age Group	1-year	3-year	5-year
Under 25	97.1%	90.5%	84.9%
25 - 54	97.5%	93.2%	89.9%
55 and Above	98.6%	96.0%	93.9%

Table 7 shows the number of completed interventions by employment status for the years 1999-2018. Employment status is measured at the time of action plan closure by the employment counsellor.⁵

Table 7: Number of Completed Interventions by Employment Status (1999-2018)

Employment Status	Completed Interventions	% of Completed Interventions
Not Employed	96,200	27.9%
Employed	226,231	65.5%
Self-Employed	7,038	2.0%
Unknown	15,663	4.5%
Total	345,132	100.0%

⁵ Individuals seeking employment counselling through PETL first make an appointment with the employment counsellor, during which time an assessment is completed to determine the individual's eligibility for the program and an appropriate course of action. An employment action plan is then created to determine steps the client should take to achieve their employment goals.

As can be seen in Table 8, there are hardly any differences in retention rates by employment status. The 5-year retention rate for Self-Employed individuals (93.2%) is higher than 5-year retention rates for other employment statuses. However, there is also a low percentage of completed interventions by Self-Employed individuals (2.0%), as seen in Table 7.

Table 8: Retention Rate by Employment Status (1999-2017)

Employment Status	1-year	3-year	5-year
Not Employed	97.4%	92.3%	88.5%
Employed	97.4%	92.7%	88.9%
Self-Employed	98.9%	96.0%	93.2%
Unknown	98.6%	92.4%	87.9%

Training Program Participants with a General Educational Development (GED) Diploma

This section focuses on the mobility and retention of different training program participants whose highest level of qualification is a General Educational Development (GED) diploma. Due to low counts, our analysis could not be broken down by sex, language, immigrant status, or age group and was restricted to the years 2010-2018, inclusive.

Following the same methodology used in the rest of the report to calculate 1-, 3-, and 5-year retention rates, we find hardly any differences in retention rates between participants whose highest qualification is a GED diploma and the overall population of training program participants.

Table 9 shows the number of completed interventions by year from 2010-2018 for those with a GED diploma. Because an individual could have completed multiple interventions in a year, the number of interventions completed each year is higher than the number of individuals completing the interventions.

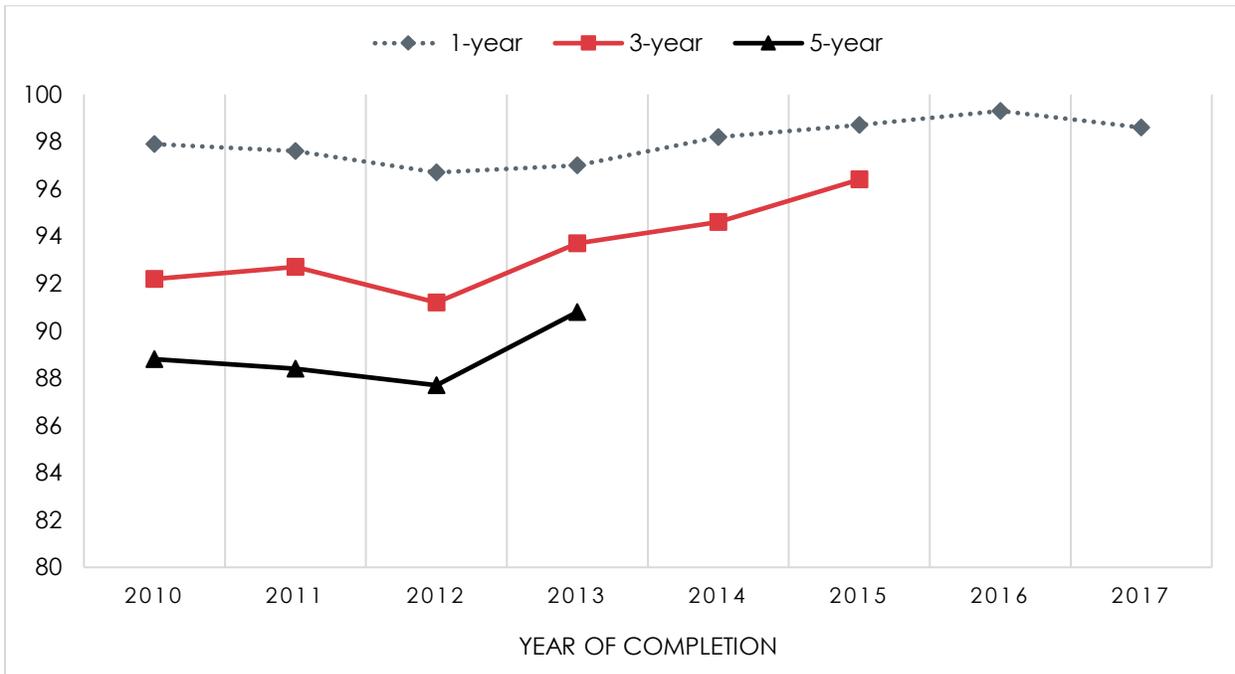
The “Number of Program Completers with a GED” column in Table 9 considers the subset of residents who hold a GED diploma and who completed training interventions, by year of completion. Because linking different databases requires unique identifiers, those observations without any unique identifiers in the ContactNB data set have been dropped from this table.

Table 9: Number of Completed Interventions by GED Diploma Holders (2010 to 2018)

Year	Number of Completed Interventions	Number of Program Completers with a GED ⁶
2010	1,752	1,208
2011	1,395	973
2012	1,411	885
2013	1,356	753
2014	1,421	848
2015	1,515	867
2016	1,506	891
2017	1,515	871
2018	1,210	707

Figure 2 shows the 1-, 3-, and 5-year retention rates of training program participants with a GED diploma, with Table 11 in the Appendix giving corresponding numbers. Due to small sample sizes in earlier years, this study reports retention rates from 2010 onward. Figure 2 shows high retention rates for program completers with a GED diploma, with even 5-year retention rates in the high-80s to low-90s in terms of percentages.

Figure 2: 1-, 3-, and 5-Year Retention Rates by Year of Completion for GED Diploma Holders



⁶ Based on available unique identifiers

Conclusion

In this paper, we measure the New Brunswick (NB) retention rates of different training programs designed (and directed) by the Department of Post-Secondary Education, Training and Labour (PETL) to help individuals prepare for, obtain, and maintain employment. In addition to presenting the number of interventions completed, we break down results by sex, language, immigrant status, age group, and employment status. We also present our calculations of the 1-, 3-, and 5-year retention rates for training program completers.

Generally, we find 1-year retention rates are in the mid- to high-90s, and 5-year retention rates are in the high-80s to low-90s.

This is consistent with findings from Boco et al. (2021), who used data from the Education and Labour Market Longitudinal Platform and a different approach to measuring retention based on location of tax filing to examine retention rates of apprentice completers in NB.

These results also mirror findings produced by Emery et al. (2017), who used T1 tax files, T4 statements of earnings, and RAIS data to study the retention rates of individuals who completed apprenticeship programs in the Atlantic Provinces.

Our findings are consistent as well with Frank & Jovic (2017). Their study used the results of a 2015 National Apprenticeship Survey to show that only about 4% of participants in a registered apprenticeship program move to a different province or territory for a job after program completion. One implication of their findings is that more highly educated younger people are most mobile, and labour market interventions do not seem to alter underlying mobility patterns based on age and education.

We further categorized retention rates by sex, official language, immigrant status, educational attainment, age group, and employment status.

We find no major differences between retention rates classified by sex, educational attainment, and employment status. For official language, English speakers are shown to be slightly more mobile than French speakers based on retention rate after program completion. Immigrants (permanent residents) are shown to be more mobile than citizens based on 5-year retention rates.

However, the 5-year retention rate of 70.3% for permanent residents in this report is still higher than the 5-year retention rate of about 50% found in another NB-IRDT study (Leonard et al., 2019) on retention across all immigrants to NB. The reasons for this difference in immigrant retention could be examined in future work.

As well, age group shows a clear trend of younger people (84.9% 5-year retention rate) being more mobile than older people (93.9% 5-year retention rate) after program completion, which is consistent with other studies on migration by age group (see Emery et al., 2019; McDonald et al., 2018).

Studies produced by Employment and Social Development Canada (ESDC) (2017a, 2017b) show that different training program participants in Canada (including NB) experience better labour market outcomes in terms of employment and wages than those who did not receive training.

As we find that most PETL-directed program participants tend to stay within NB following program completion, these previous findings may suggest significant positive returns to the resources spent on employment training by the Government of New Brunswick.

A follow-up study could further explore this possibility through an evaluation of the earnings and employment effects of these training programs on participants. Further work should also explore variations by the type of training intervention individuals pursue.

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Appendix – Additional Tables

Table 10: Retention Rate by Year of Completion of Training Interventions

Year	Number of Linked Individuals	1-year Retention	3-year Retention	5-year Retention
2003	562	98.8%	96.4%	94.5%
2004	763	98.6%	96.5%	95.0%
2005	939	99.1%	95.6%	94.0%
2006	1,167	98.4%	94.9%	93.1%
2007	1,515	98.7%	96.2%	93.3%
2008	2,193	99.2%	96.5%	93.4%
2009	5,861	98.6%	94.5%	90.1%
2010	21,079	97.8%	92.4%	88.1%
2011	18,556	97.1%	91.1%	87.8%
2012	16,723	96.4%	90.8%	87.5%
2013	15,587	96.9%	92.3%	89.4%
2014	16,391	97.1%	92.9%	
2015	16,822	97.7%	94.3%	
2016	20,780	97.9%		
2017	21,524	97.8%		
2003-2017^{7,8,9}	160,462	97.5%	92.7%	88.8%

Table 11: Retention Rates by Year of Completion for GED Diploma Holders

Year	Number of Program Completers with a GED ¹⁰	1-year Retention	3-year Retention	5-year Retention
2010	1,208	98.1%	92.7%	89.3%
2011	973	97.5%	92.8%	88.9%
2012	885	96.5%	91.4%	87.8%
2013	753	96.5%	93.0%	90.2%
2014	848	97.9%	94.6%	
2015	867	98.3%	95.4%	
2016	891	98.9%		
2017	871	98.3%		
2010-2017¹¹	7,296	97.8%	93.3%	89.0%

⁷ Aggregated 1-, 3-, and 5-year retention rates are calculated based on data from 1999-2017, from 1999-2015, and from 1999-2013, respectively.

⁸ 161,687 individuals completed interventions between 1999 and 2017. 119,383 individuals completed interventions between 1999 and 2015. 86,170 individuals completed interventions between 1999 and 2013.

⁹ Due to low counts, retention rates for the years 1999-2002 cannot be reported by year.

¹⁰ This is based on available unique identifiers.

¹¹ Aggregated 1-, 3-, and 5-year retention rates are calculated based on data from 2010-2017, from 2010-2015, and from 2010-2013, respectively.