CLLN EXPLORES THE RELATIONSHIP BETWEEN LITERACY AND EARNINGS

INVESTING IN UPSKILLING: Gains for Individuals, Employers and Government

in focus: benefit receipt payments

CANADIAN Literacy and Learning NETWORK

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INVESTING IN UPSKILLING: Gains for Individuals, Employers and Government

a research report prepared for
Canadian Literacy and Learning Network
by Scott Murray and Richard Shillington
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Abbreviations

EI	Employment Insurance
EI-R	Employment Insurance regular benefits
EI-M	Employment Insurance maternity/paternity benefits
GDP	Gross Domestic Product
IALSS	The International Adult Literacy and Skills Survey
ISRS	International Survey of Reading Skills
ROI	Return on investment
SA	Social Assistance
SLID	The Survey of Labour and Income Dynamics
WC	Workers' Compensation

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Chapter 1 Introduction

Exploring the link between literacy and benefit receipt payments

An individual's literacy level has been shown to exert a profound influence on a range of social, health, educational and labour market outcomes. The impact of literacy skills on labour market outcomes is particularly pronounced.

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Literacy levels are graded on a 5 level scale, 1 being the lowest. Adults at Levels 1 and 2 bear a disproportionate share of this skill-based disadvantage (McCracken and Murray, 2009).

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Lower skilled individuals are far less likely to have worked in the course of a year, work fewer weeks per year, are more likely to experience a spell of unemployment, experience more and longer periods of unemployment, work more hours per week and have lower wage rates.

These impacts translate into significant differences in average incomes by literacy skill level and marked differences in the probability of an individual drawing Employment Insurance, Workers Compensation and/or Social Assistance benefits.

Importantly for the findings in this report, these impacts come on top of other important effects such as education and job experience. In fact, our research shows that differences in literacy skill account for 33% of the explained variance in earnings, more than any other factor.

Interestingly, these individual effects translate into large differences in rates of productivity and GDP growth over the long term. More specifically, in the world's most advanced economies, differences in average literacy skill explains over 55% of differences in long term GDP and labour productivity growth rates and higher proportions of adults with Level 1 and 2 skills impair growth rates to a significant degree. Over a 50 year period these differences in growth rates translate into a

Interestingly, these individual effects translate into large differences in rates of productivity and GDP growth over the long term. Differences in average literacy skill explains over 55% of differences in long term GDP and labour productivity growth rates and higher proportions of adults with Level 1 and 2 skills impair growth rates to a significant degree.

These findings provide a clear rationale for raising average skill levels, ideally by improving the scores of the lower skilled.

difference of $11,000 more GDP per capita between the best and worst performing economy (Coulombe, Tremblay and Marchand, 2004).

These findings provide a clear rationale for finding ways to drive up average literacy scores. More interestingly, the proportion of adults with Level 1 and 2 skills also influences economic growth over the long term. Higher proportions of low-skilled adults translate into lower overall rates of productivity growth. This finding implies that raising average skill levels by improving the scores of the lower skilled will drive rapid improvement in economic performance.

Recent research by the authors shows that investments designed to reduce or eliminate the size of occupational literacy skill shortages through instruction would yield impressive rates of return.

The conventional economic interpretation of these findings is that literacy is a economic asset, one that greatly enhances worker productivity and, by extension, income per capita. The higher wages paid to workers with higher skills simply reflects the fact that they are marginally more productive.

This analysis provides estimates of the cost of raising all adults to prose literacy level 3 and then uses the relationship between EI, SA and Workers Compensation payments to literacy skill to estimate the potential savings that would accrue were this investment made.

Recent research by the authors shows that investments designed to reduce the size of, or eliminate occupational literacy skill shortages through instruction would yield impressive rates of return. This research showed that returns are the joint product of increased levels of employment, higher weeks worked, higher wage rates and significant reductions in Employment Insurance and Social Assistance payouts (DataAngel, 2008).

It is this latter insight that forms the basis for the current research. We wanted to further explore the relationship between the incidence of EI, SA and Workers Compensation receipt and payments to literacy skill to further understand the potential savings to increased literacy levels to these three publicly-funded wage replacement and income support programs.

The logic that motivated this research

This research in this paper is predicated on the assumption that we are in a period of profound economic change.

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The emergence of global markets for capital, advanced production technology and research and development, improved transportation and communication networks and falling trade barriers have leveled the economic playing field, allowing firms from anywhere to compete on global markets for goods and services.

The emergence of global markets for capital, advanced production technology and research and development, improved transportation and communication networks and falling trade barriers have leveled the economic playing field, allowing firms from anywhere to compete on global markets for goods and services. These changes will drive an increase in the relative importance of the skill of the average worker as a source of productivity growth.

The rapidly rising global supply of skilled workers will amplify the impact of these changes over the coming decades.

The rapidly rising global supply of skilled workers will amplify the impact of these changes over the coming decades. A failure to increase the skill of the average worker will have serious impact on Canada's future economic success.

Report organization

In order to respond to these challenges the report is organized into five chapters as outlined below.

This **first Chapter** introduces the reports objectives and research questions and provides readers with a summary of the concerns and questions that motivated the analysis.

Chapter 2 compares the literacy skill and labour market participation of Employment Insurance (EI), Workers Compensation (WC), and Social Assistance (SA) beneficiaries to the general and employed populations.

Chapter 3 explores the relationship between the incidence, frequency and amounts of benefits received under each program and literacy skill level. The chapter documents that large differences in benefit rates and amounts by skill level exist and shows that these differences remain even after results have be adjusted to account for differences in the characteristics of individuals at each literacy skill level.

Chapter 4 profiles the literacy learning needs of EI, SA and WC beneficiaries and provides estimates of the investments that would be required to raise skill levels enough to eliminate occupational skill shortages and to improve labour market and earnings outcomes for participants.

Chapter 5 provides estimates of the expected direct and indirect economic benefits that would accrue to the proposed literacy investment and the implied rates of return.

Chapter 6 summarizes the reports findings, highlights their implications for policy and for additional research.

The report is supported by three annexes.

Annex A provides references to research cited in the report.

Annex B includes the statistical tables that were used to generate the figures that were included in the report.

Annex C documents the methods that were used to merge the International Adult Literacy and Skills Survey (IALSS) and Survey of Labour and Income Dynamics (SLID) datasets and provides information about the validity and reliability of the results.

What these changes imply for Canada's ability to compete

First, developing world producers will be able to compete on price and quality. Any productivity differences that exist between these producers and their Canadian peers will translate into rapid losses of market share, employment and GDP in Canada.

Second, increased competition will place intense pressure on Canadian firms to improve their productivity.

Canadian firms will respond to these competitive pressures in several ways e.g. by reducing wages and benefits, by increasing output through process or product improvements, by outsourcing in part to lower cost foreign producers, or by raising the skills of their workers to compensate for inter-country wage and productivity differentials.

The foregoing analysis suggests two things for the Canadian economy.

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Canadian firms will respond to these competitive pressures in several ways e.g. by reducing wages and benefits, by increasing output through process or product improvements, by outsourcing in part to lower cost foreign producers, or by raising the skills of their workers to compensate for inter-country wage and productivity differentials.

Research suggests that the productivity gains needed might only be realized by raising the ability of the average worker to solve problems, communicate efficiently in high performance teams and apply the most advanced information-rich production technology at globally competitive levels. More simply, workers need the advanced skills required to apply their technical skills at global levels (McKinsey, 2010).

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The same research suggests that workers in mature western economies need a minimum of Level 3 literacy skills.

Workers in mature western economies need a minimum of Level 3 literacy skills, a level that 48% of adults in Canada currently do not have.

If our analysis is sound, the size of the skill deficit is daunting. In Canada, one of the most educated and skilled population in the world, an estimated 48% of the adults have Level 1 and 2 literacy skills. More worrisome, 43% of youth leaving the secondary system have Level 1 and 2 skills despite the fact that 85% of all youth go on to some form of post-secondary education. At a minimum, this latter finding is bound to reduce the public and private returns on post-secondary investment, and ultimately, long term rates of productivity growth.

More worrisome, 43% of youth leaving the secondary system have Level 1 and 2 skills, a fact that will reduce their productivity and their success once they enter the labour market.

This report explores the potential of adult skill upgrading to simultaneously improve product quality and production efficiency and to reduce labour costs. The analysis focuses specifically on the beneficial impact that an investment in raising adult literacy skills might have on Canadians' reliance on key income support programs: regular Employment Insurance (EI-R), Employment Insurance Maternity benefits (EI-M), Workers Compensation (WC) and Social Assistance (SA).

What the research literature suggests about the impact of literacy on outcomes

As mentioned previously, there is strong support for the contention that investments in literacy skill might yield a range of economic and social benefits. Literacy skill has also been shown to influence a range of individual outcomes.

Literacy's impacts on individual labour market outcomes are arguably the most pronounced. Higher skilled adults are more likely to find work, work more weeks, are less likely to experience a spell of unemployment, experience fewer spells of unemployment and of shorter duration, work fewer hours in safer occupations, earn higher wages, and have higher annual incomes.

Importantly for the current analysis, higher skilled adults are much less likely to depend on income support from the EI, Workers Compensation or Social Assistance systems.

Literacy understandably also influences individuals' education outcomes. Adults with higher literacy skills are more likely to have graduated from high school, to participate in post-secondary education, to receive a post-secondary qualification, to participate in various forms of adult learning and to have their employer pay for their participation.

Literacy also influences everything from individual health outcomes to social outcomes. Adults with low skills are 2.5 times more likely to be in fair or poor health, experience more absences from work, remain in treatment longer and cost more to treat. Higher skilled adults are more likely to vote and to volunteer.

Literacy skill has also been shown to influence a range of individual outcomes.

Collectively these differences suggest that literacy has a profound impact on Canadians' quality of life. Investment in literacy holds the promise of improved macro-economic performance and a broad range of better outcomes for individuals in many aspects of their well-being.

With this in mind, we describe Canada's Employment Insurance, Workers Compensation and Social Assistance systems and describe what is known about their economic impacts.

Canada's Employment Insurance, Workers Compensation and Social Assistance programs

The Employment Insurance (EI), Workers Compensation (WC) and Social Assistance (SA) programs are key elements in Canada's social safety net for working-age adults.

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The EI system provides replacement income to Canadians who have experienced a loss of income due to permanent job loss, temporary layoff, maternity/paternity or some forms of disability. Over the past decade increasing amounts of EI expenditures have been devoted to "active measures" that include the funding of training that is meant to improve the employability of recipients.

The Workers Compensation system provides replacement income to workers who suffer workplace-related illness or accident.

Both the EI and Workers Compensation programs are a form of insurance in which risks and costs are spread over a large base of workers. Both programs are funded by premiums paid by employers and employees and have their share of proponents and detractors.

Social Assistance (SA) is somewhat different than EI and Workers Compensation. Canada's social assistance systems are designed to provide income to Canadian individuals and families who for whatever reasons, do not find enough employment to support a minimally acceptable standard of living. SA is quite different in each province and territory and also has its' share of proponents and detractors.

The research questions: what impact does literacy skill level have in determining benefit receipt and payment levels

The basic hypothesis that motivates this report is that significant economic benefits could be realized were investments made to increase the literacy skills of Canadian adults.

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These benefits would, presumably, include:

- Higher employment levels,
- Higher levels of productivity growth,
- Higher levels of GDP growth,
- Significant reductions in Canadians' reliance on income support from the EI, WC and SA systems and,
- Considerable savings to governments, freeing up significant fiscal resources for other, presumably more productive, purposes.

The following section of this chapter sets out the research questions that the analysis will attempt to address.

The analyses presented in this report were intended to provide answers to the following series of linked research questions:

- How do rates of EI, WC and SA benefit receipt vary by literacy skill?
- How do weekly EI, WC and SA benefit rates vary by literacy skill level?
- How does the amount of EI, WC and benefits received vary by literacy skill?
- How do EI, WC and SA benefit receipt rates vary by skill level by province?
- To what extent can observed differences in EI, WC and SA benefit rates be explained by underlying differences in the characteristics of adults at each literacy skill level?
- Do policy-significant differences in benefit rates exist after these differences have been adjusted for?
- What types of instruction would be required to raise literacy skill levels enough to yield meaningful reductions in benefit rates? What would such a skill investment cost?
- What direct and indirect economic benefits might accrue were such a skill investment to be made?
- What are the implied rates of return on investment?

Research Methods

In an ideal world one would address the research questions set out above using a dataset that includes data on literacy skill, labour market participation and benefit receipt on the same individuals for the same reference year. Unfortunately, no such dataset exists.

The findings presented in this report used data from the 2003 International Adult Literacy and Life Skills Survey (IALSS) to impute literacy scores and literacy learning needs on to individual records from 5 years the Survey of Labour and Income Dynamics (SLID): 2005 and 2009.

Using 5 years of SLID data avoids suppression of estimates for smaller jurisdictions and smoothes out variation in benefit rates associated with the business cycle. Analysis of the resultant merged dataset provides reliable estimates of joint distributions and average co-variances among variables for each cell defined by the matrix of variables used to control the imputation.

The findings presented in this report are based upon an approach that used data from the 2003 International Adult Literacy and Life Skills Survey (IALSS) to impute literacy scores and literacy learning needs on to individual records from 5 years the Survey of Labour and Income Dynamics (SLID): 2005 to 2009.

The use of multiple imputations provides a means to estimate error variances that include imputation error and thereby test the stability of key conclusions. Although the approach cannot provide definitive results previous application of these methods suggests that they provide a low cost means of shedding light on policy issues that would otherwise go unexplored due to a lack of data. In some cases this type of analysis yields results that are sufficiently robust to inform policy directly, in others they provide a clear focus for future research.

Chapter 2 Profiles of the Beneficiary Populations

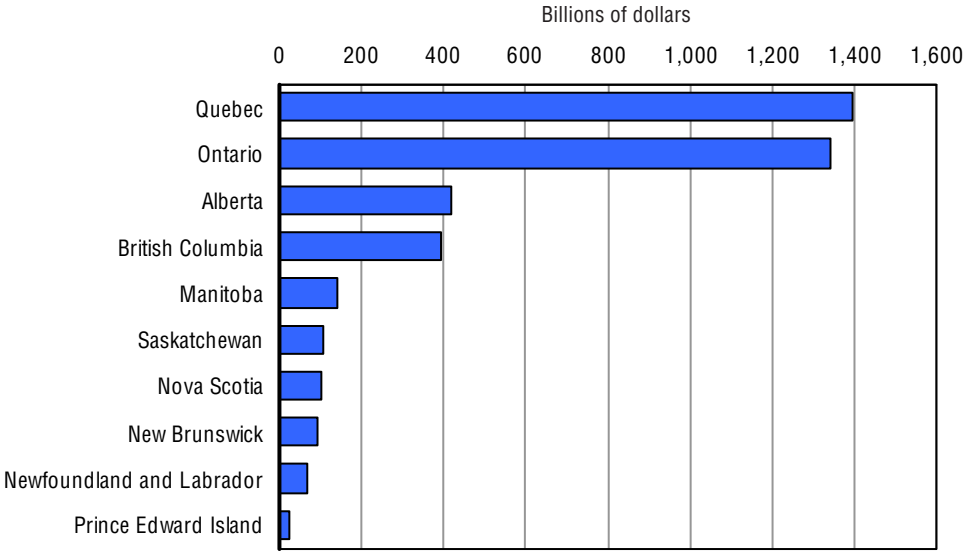
This chapter profiles the characteristics of those Canadians who were in receipt of EI, Social Assistance and Workers Compensation benefits in the 2005 to 2009 reference years. Separate profiles are presented for those in receipt of EI maternity, disability and regular benefits. The chapter begins by documenting the magnitude of public expenditure, and associated beneficiary rates by jurisdiction.

Public expenditures and Employment Insurance, Workers' Compensation and Social Assistance beneficiary rates by jurisdiction

Expenditures on Employment Insurance maternity benefits by province

Figure 2.1a plots expenditure on EI maternity benefits by province.

Figure 2.1a Expenditure on Employment Insurance maternity benefits by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

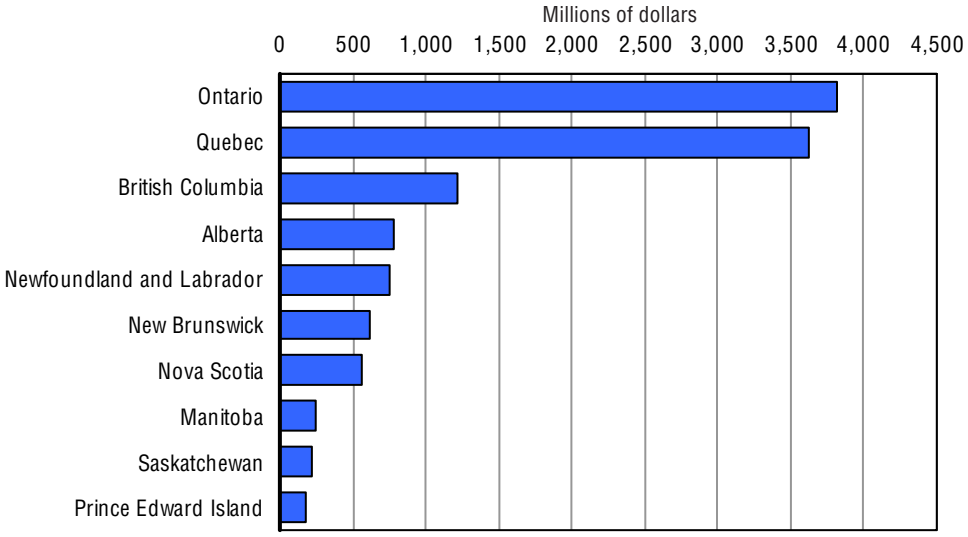
Government of Canada spent an annual average of $4.16 billion on EI maternity benefits over the past decade, an amount that varies significantly by jurisdiction. Beneficiaries in Quebec received the largest amount of benefits, $1.398 billion, followed by beneficiaries in Ontario at $1.344 billion.

The figure reveals that the EI maternity benefits involve non-trivial amounts. The Government of Canada spent an annual average of $4.16 billion on EI maternity benefits over the past decade. The average amount spent varies significantly by jurisdiction. Beneficiaries in Quebec received the largest amount of benefits, $1.398 billion, followed by beneficiaries in Ontario at $1.344 billion. Together benefits paid in these provinces account for 66% of all EI maternity payments. Newfoundland residents received the smallest average amount of EI maternity benefits in aggregate, $70 million.

Expenditures on Employment Insurance regular benefits by province

Figure 2.1b plots average expenditure on EI regular benefits by jurisdiction.

Figure 2.1b Expenditures on Employment Insurance regular benefits by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

Average expenditures on EI regular benefits are roughly four times expenditures on EI maternity benefits. In total the Government of Canada spent an annual average of $12.391 billion on regular EI benefits over the past decade.

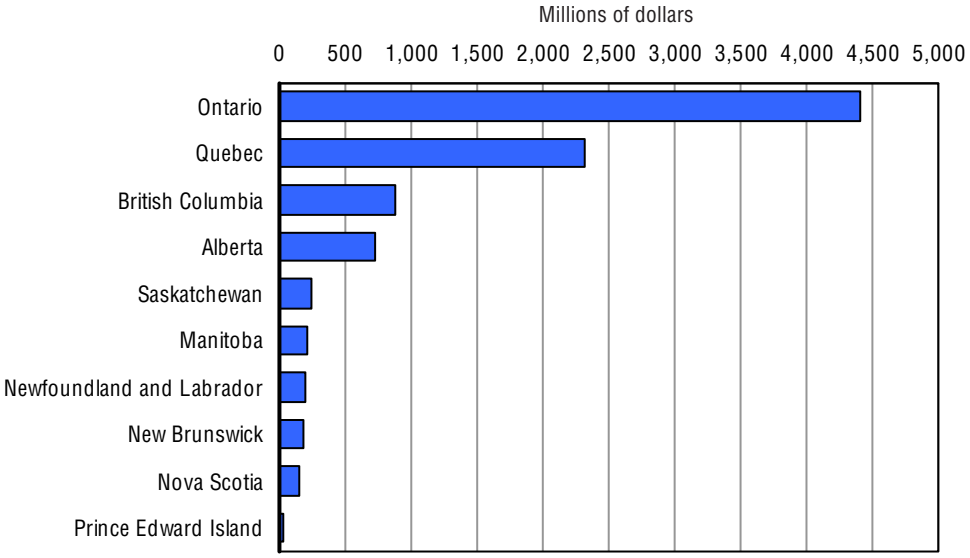
The figure reveals that average expenditures on EI regular benefits are roughly four times expenditures on EI maternity benefits. In total the Government of Canada spent an annual average of $12.391 billion on regular EI benefits over the past decade.

The average amount spent varies significantly by jurisdiction. Beneficiaries in Ontario received the largest amount of benefits, $3.821 billion, followed by beneficiaries in Quebec at $3.625 billion. Together benefits paid in these provinces account for 60% of all regular EI payments. Prince Edward Island residents received the smallest average amount of regular EI benefits in aggregate, $182 million.

Expenditure Social Assistance benefits by province

Figure 2.1c plots average expenditure on Social Assistance benefits by jurisdiction.

Figure 2.1c Expenditures on Social Assistance benefits by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

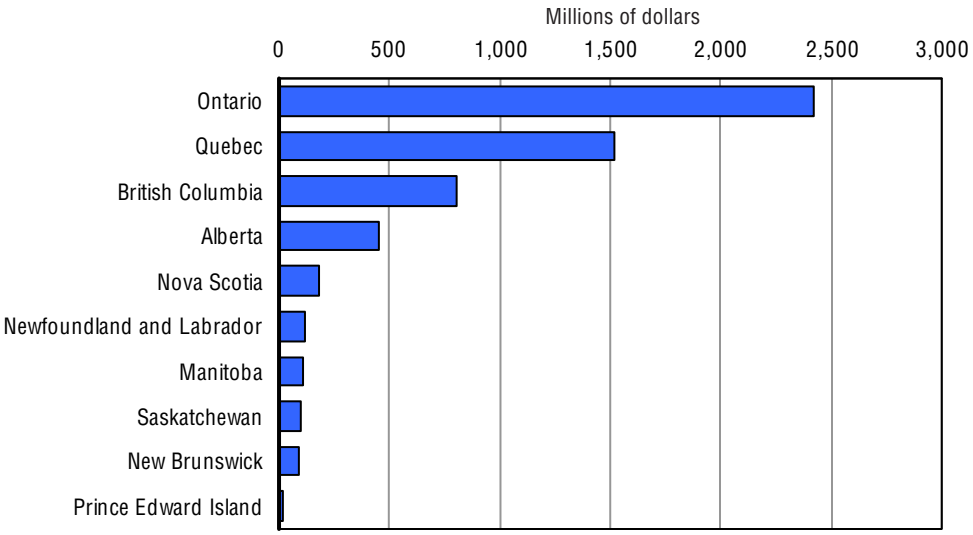
The figure reveals that average expenditures on Social Assistance benefits also consume significant public resources. In total the provinces spent an annual average of $9.508 billion on Social Assistance payments over the past decade. The average amount spent varies significantly by jurisdiction. Beneficiaries in Ontario received by far the largest amount of benefits, $4.412 billion, followed by beneficiaries in Quebec at $2.321 billion. Together benefits paid in these provinces account for 71% of all Social Assistance payments. Prince Edward Island paid out the lowest average aggregate amount of Social Assistance benefits, $25 million.

Social Assistance benefits also consume significant public resources. In total the provinces spent an annual average of $9.508 billion on Social Assistance payments over the past decade. The average amount spent varies significantly by jurisdiction. Beneficiaries in Ontario received by far the largest amount of benefits, $4.412 billion.

Expenditure on Workers Compensation benefits by province

Figure 2.1d plots average expenditure on Workers Compensation benefits by jurisdiction.

Figure 2.1d Expenditures on Workers Compensation benefits by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

Average expenditures on Workers Compensation benefits also consume significant public resources. In total the provinces spent an annual average of $5.892 billion on Workers Compensation payments over the past decade. The average amount spent varies significantly by jurisdiction. Beneficiaries in Ontario received by far the largest amount of benefits, $2.419 billion, followed by beneficiaries in Quebec at $1.521 billion.

The figure reveals that average expenditures on Workers Compensation benefits also consume significant public resources. In total the provinces spent an annual average of $5.892 billion on Workers Compensation payments over the past decade. The average amount spent varies significantly by jurisdiction. Beneficiaries in Ontario received by far the largest amount of benefits, $2.419 billion, followed by beneficiaries in Quebec at $1.521 billion. Together benefits paid in these provinces account for 67% of all Workers Compensation payments. Prince Edward Island paid out the lowest average aggregate amount of Workers Compensation benefits, $19 million.

Collectively, the EI, SA and Workers Compensation programs consume an average of $31.951 Billion per year.

Key Findings

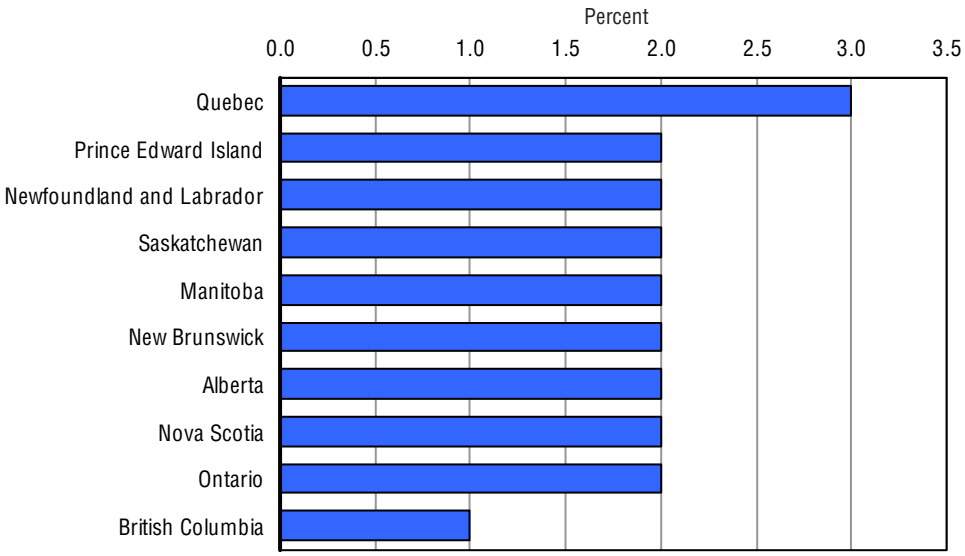
Collectively, the EI, SA and Workers Compensation programs utilize an average of $31.951 Billion per year. Regular EI benefits account for 39% of this total, Social Assistance 30%. The simple magnitude of these expenditures provides support for any initiative that might reduce the need for these types of income replacement, including investments in Essential Skills upgrading that are the focus of this analysis.

Rates of people receiving Employment Insurance, Workers' Compensation and Social Assistance benefits by Province

The second series of charts plot the average proportions of the population in each jurisdiction that received benefits.

Figure 2.2a plots EI maternity benefit rates by jurisdiction.

Figure 2.2a Employment Insurance maternity benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals small differences in the proportion of the adult population receiving EI maternity benefits. 3% of Quebec residents receive EI maternity benefits annually, 1% higher than the rest of the provinces.

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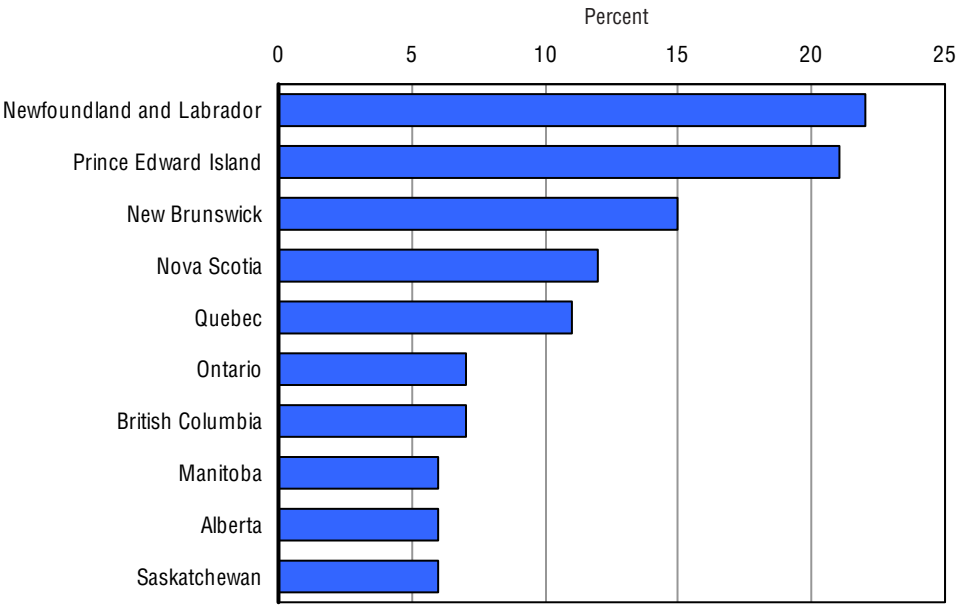
Figure 2.2b plots EI regular benefit rates by jurisdiction.

Figure 2.2b Employment Insurance regular benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009

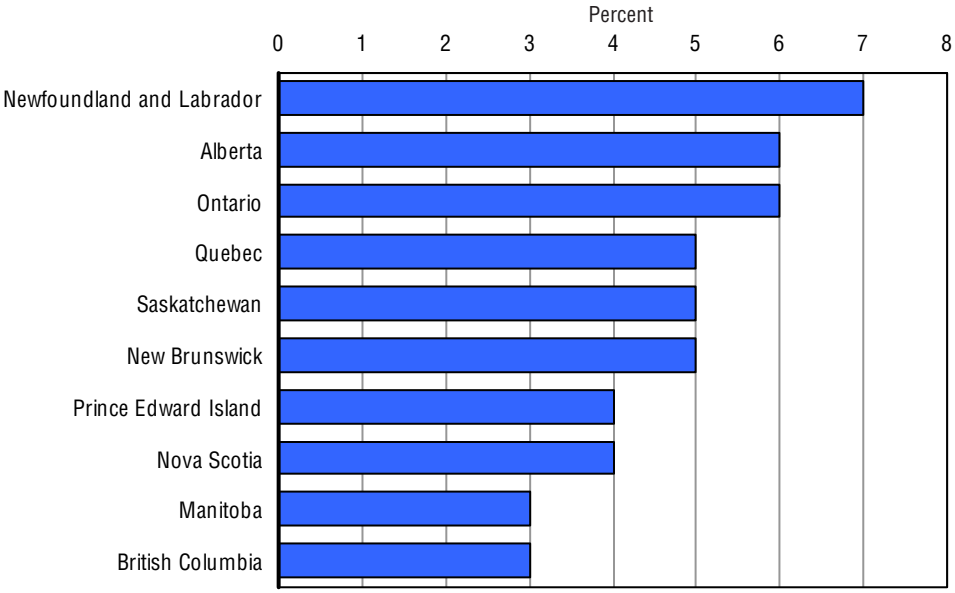


Source: 2003 IALSS and 2005 to 2009 SLID.

In sharp contrast there are significant differences in the proportion of the adult population receiving regular EI benefits, from a low of 6% in Alberta and Manitoba to a high of 22% in Newfoundland and Labrador. These results suggest that any investment in Essential Skills upgrading that served to reduce the need for regular EI benefits would touch relatively large numbers of adults Newfoundland and Labrador and Prince Edward Island.

The figure reveals significant differences in the proportion of the adult population receiving regular EI benefits, from a low of 6% in Alberta and Manitoba to a high of 22% in Newfoundland and Labrador. These results suggest that any investment in Essential Skills upgrading that served to reduce the need for regular EI benefits would touch relatively large numbers of adults in Newfoundland and Labrador and Prince Edward Island.

Figure 2.2c Social Assistance benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009



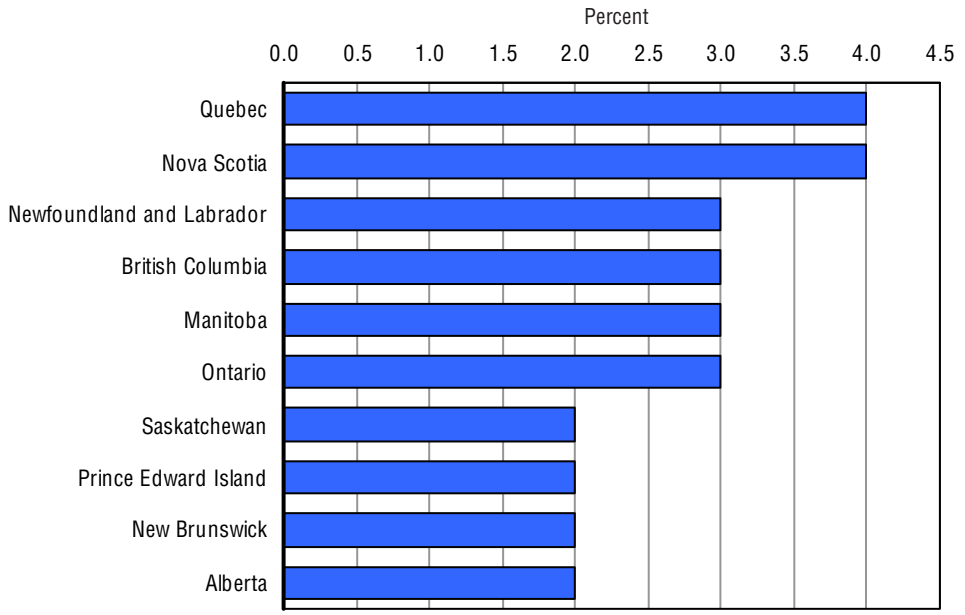
Source: 2003 IALSS and 2005 to 2009 SLID.

There are also significant differences in average rates of Social Assistance benefit receipt by province, from a high of 7% in Newfoundland and Labrador to a low of 3% in Manitoba.

The figure reveals significant differences in average rates of Social Assistance benefit receipt by province, from a high of 7% in Newfoundland and Labrador to a low of 3% in Manitoba and British Columbia.

Figure 2.2d plots Workers Compensation benefit rates by jurisdiction.

Figure 2.2d Workers Compensation benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals significant variation in rates of Workers Compensation benefits receipt by jurisdiction. At 4% Workers Compensation benefit rates in Quebec and Nova Scotia are double the rates observed in Saskatchewan, Alberta, Prince Edward Island and New Brunswick.

…and significant variation in rates of Workers Compensation benefits receipt by jurisdiction. At 4% Workers Compensation benefit rates in Quebec and Nova Scotia are double the rates observed in Saskatchewan, Alberta, Prince Edward Island and New Brunswick.

Key Findings

These figures confirm three important facts.

First, that governments' devote significant amounts of public resources to each of these programs, a fact that confirms that significant savings could be realized were a way be found to reduce beneficiary rates.

Second, that there are significant differences in beneficiary rates by province. This finding suggests that any reduction in beneficiary rates would have a differential impact on the provincial finances.

Third, significant differences in beneficiary rates by province suggest that any skill investment that served to reduce the need for these could touch a relatively large proportion of adults in some, but not all, provinces.

Taken together these two findings provide a strong rationale for exploring whether investments in literacy skill might yield significant savings.

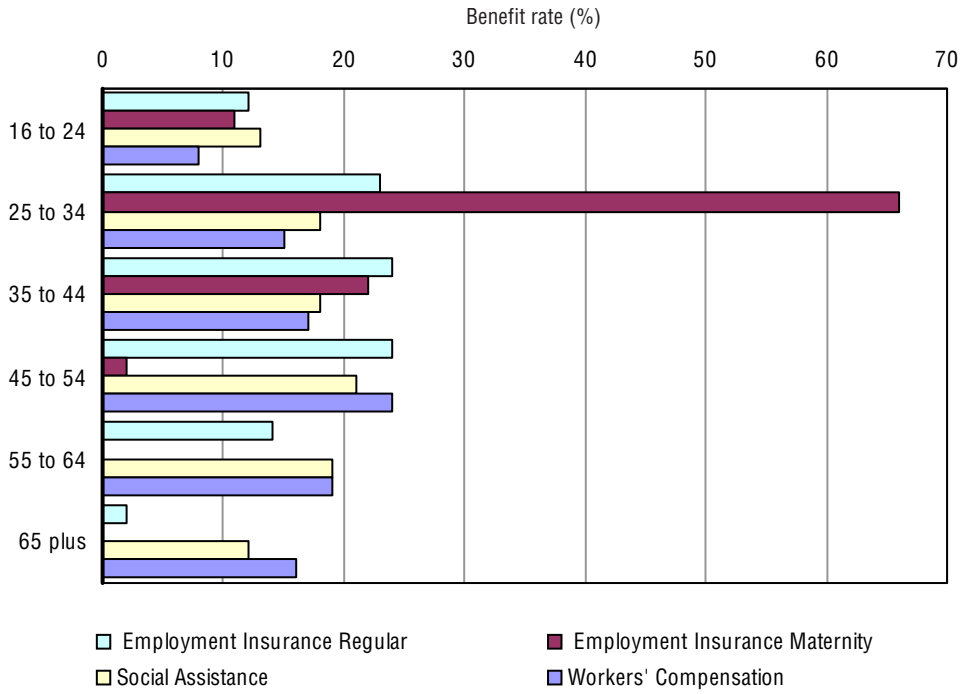
The Demographic Distribution of Benefit Receipt

The following series of charts profiles the demographic characteristics of recipients. The goal of this analysis is to identify which groups face the highest risks of benefit receipt, and, by extension, which groups might gain the most from an Essential Skills investment.

Differences in benefit rates by demographic characteristics suggests that some groups might benefit more from an investment in literacy skill.

Age

Figure 2.3 Age distribution of benefit receipt, selected programs, Canada, 2005and 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

Most benefits go to adults aged 25 to 54.

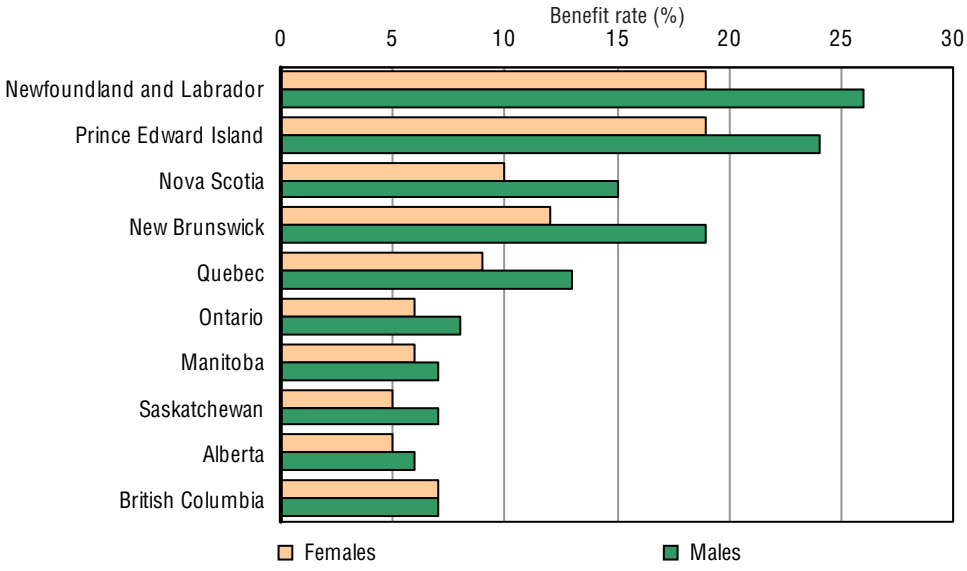
The figure reveals that, with the exception of EI maternity benefits that go primarily to women aged 25 to 44; most benefits go to adults aged 25 to 54. It is not clear what these results imply for the relationship of benefit receipt to literacy skill.

Gender

The available data suggest that women generally have higher literacy skills than men but are less likely to be employed.

Figure 2.4a plots EI regular benefit rates by gender by jurisdiction.

Figure 2.4a Employment Insurance regular benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009



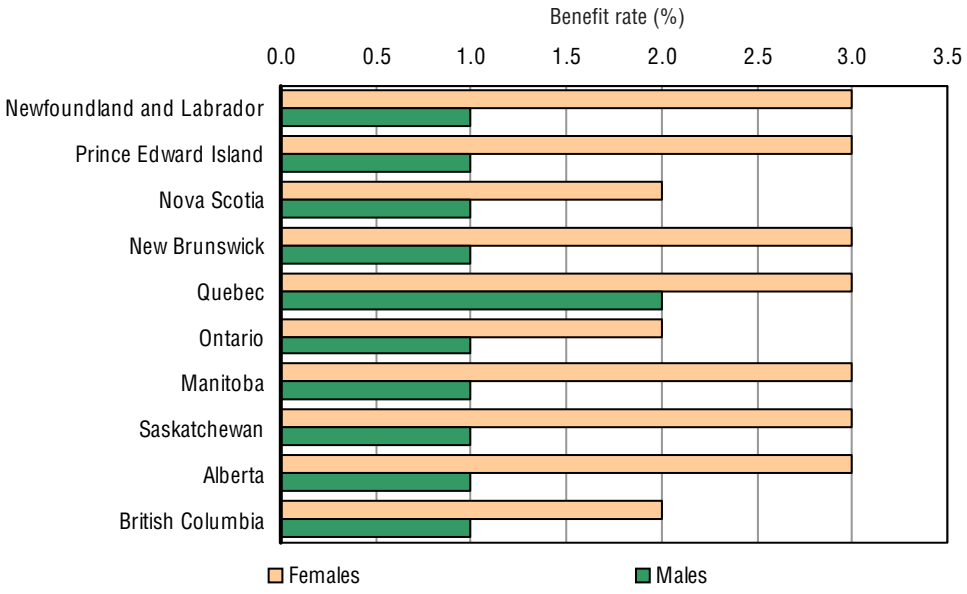
Source: 2003 IALSS and 2005 to 2009 SLID.

…men are much more likely to receive regular EI benefits than women…

The figure reveals that men are much more likely to receive regular EI benefits than women, a finding that can be related to underlying differences in the occupational distribution of employment between men and women.

Figure 2.4b plots EI maternity benefit rates by gender by jurisdiction.

Figure 2.4b Employment Insurance maternity benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009



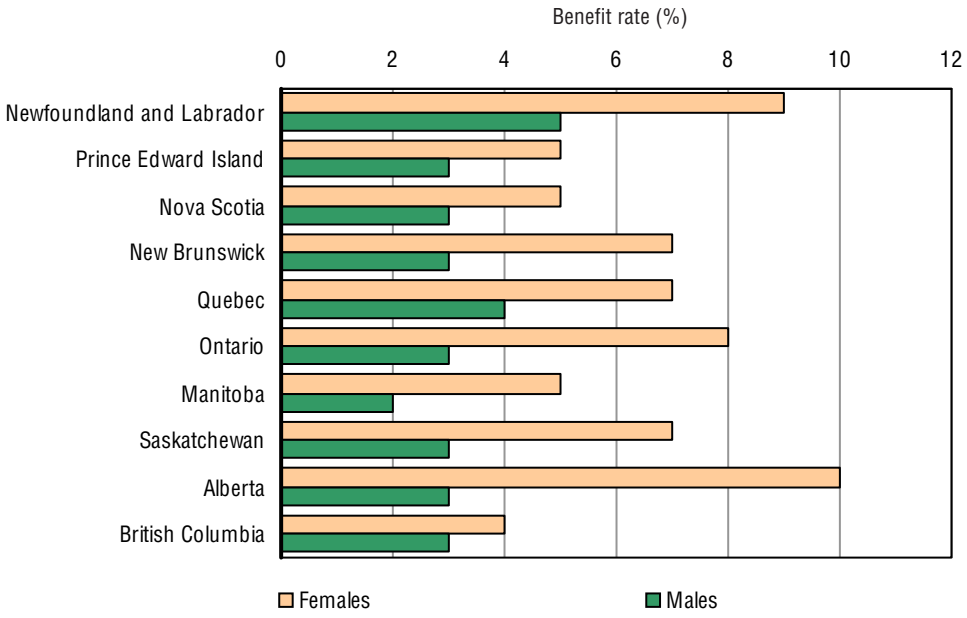
Source: 2003 IALSS and 2005 to 2009 SLID.

As expected, women have significantly higher EI maternity benefit rates than men.

The figure reveals that, as expected, women have significantly higher benefit rates than men. Notwithstanding this general observation, non-trivial proportions of men received benefits, particularly in Quebec.

Figure 2.4c plots Social Assistance benefit rates by gender by jurisdiction.

Figure 2.4c Social Assistance benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009



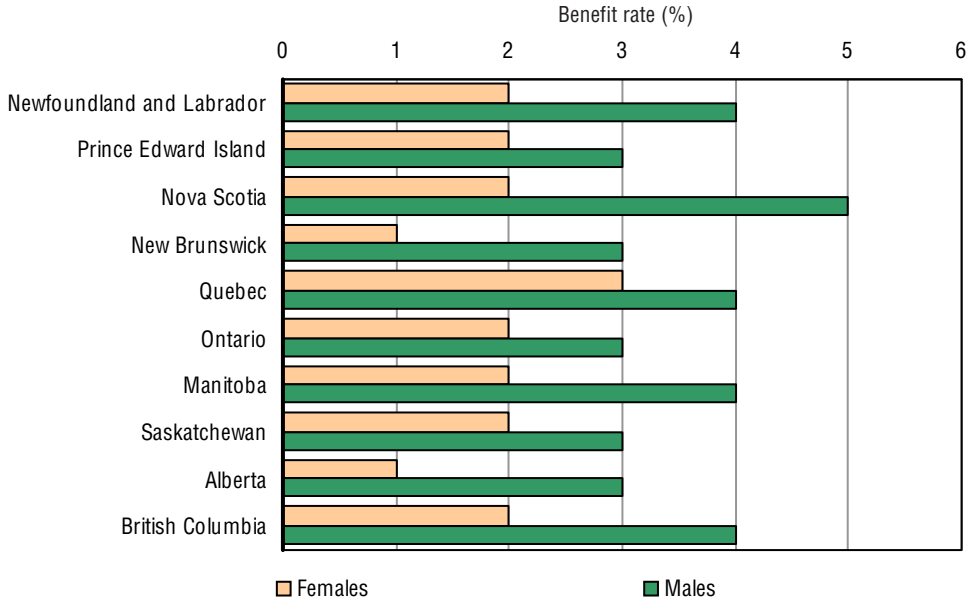
Source: 2003 IALSS and 2005 to 2009 SLID.

There are significant differences in Social Assistance benefit rates by gender, with women having higher rates than men in every province. The size of the gender gap in Social Assistance benefit rates varies significantly by province - from a high of 7% in Alberta to a low 1% in British Columbia.

The figure reveals significant differences in Social Assistance benefit rates by gender, with women having higher rates than men in every province. The size of the gender gap in Social Assistance benefit rates varies significantly by province - from a high of 7% in Alberta to a low 1% in British Columbia. These results suggest that a literacy skill investment would serve to reduce income gaps between men and women.

Figure 2.4d plots Workers Compensation benefit rates by gender by jurisdiction.

Figure 2.4d Workers Compensation benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals that men are much more likely to have received Workers Compensation benefits. The size of the gap in the Workers Compensation benefit rate between men and women varies significantly by province. For example men in Nova Scotia are 3 times more likely to have received Workers Compensation benefits than their female peers. In Prince Edward Island men are twice as likely as women to have received Workers Compensation benefits.

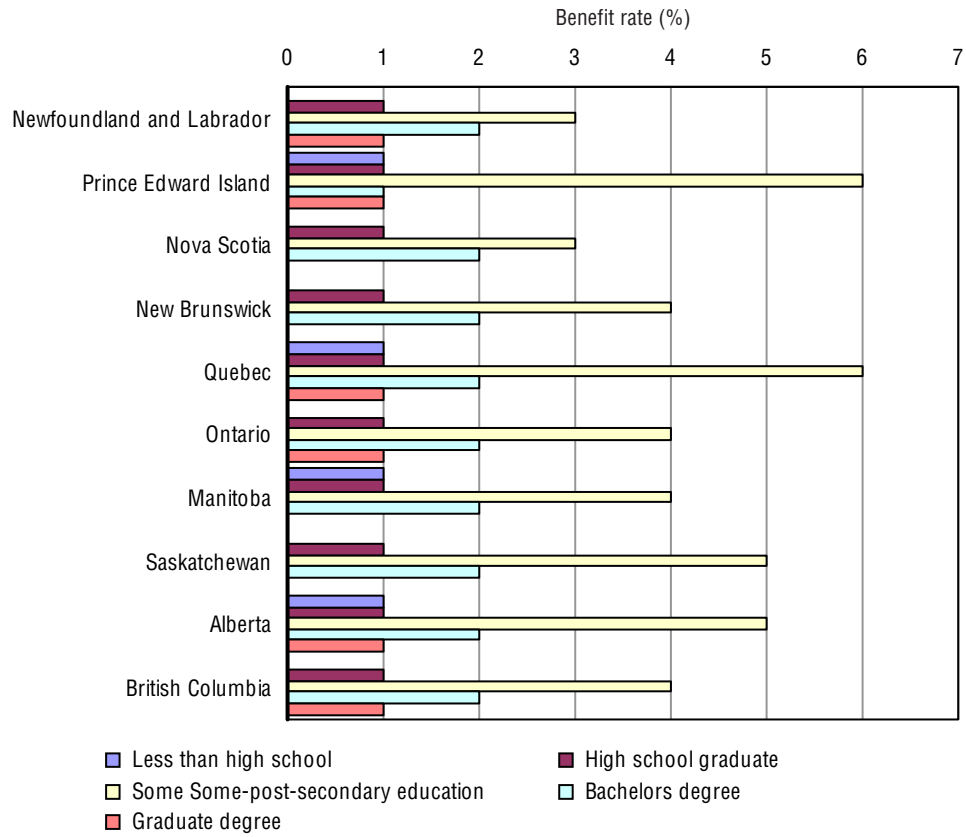
Men are much more likely to have received Workers Compensation benefits but the size of the gap in the Workers Compensation benefit rate between men and women varies significantly by province. Men in Nova Scotia are 3 times more likely to have received Workers Compensation benefits than their female peers.

Educational attainment

As expected the available research reveals a strong correlation between literacy level and level of education.

Figure 2.5a plots EI maternity benefit rates by education by jurisdiction.

Figure 2.5a Employment Insurance maternity benefit rates by education and jurisdiction, adults aged 16 and over, 2005 to 2009



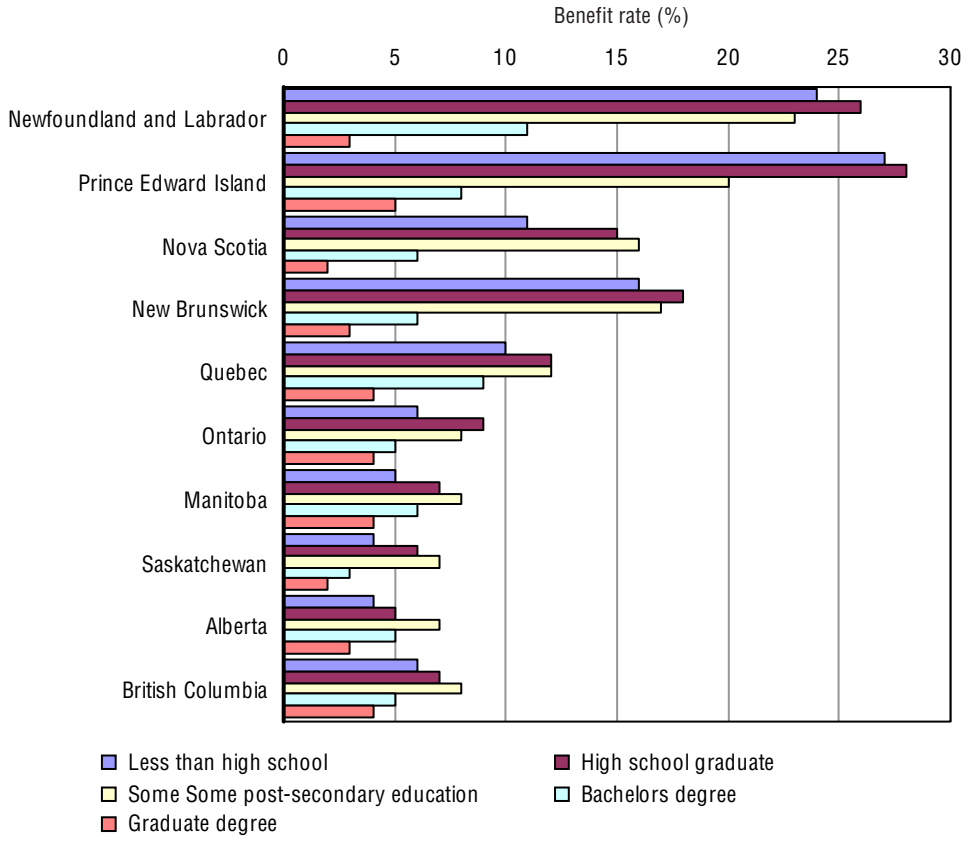
Source: 2003 IALSS and 2005 to 2009 SLID.

Rates of EI maternity benefit receipt are significantly higher in adults that have some post-secondary education and for adults holding a bachelors degree. Investments that are designed to raise literacy skills should serve to reduce the size of these benefit receipt gaps across education levels.

The figure reveals that rates of EI maternity benefit receipt are significantly higher in adults that have some post-secondary education. Rates of EI maternity benefit receipt are also elevated for those adults holding a bachelors degree but are not as high as those observed for those adults that have some post-secondary education. Investments that are designed to raise literacy skills should serve to reduce the size of these benefit receipt gaps.

Figure 2.5b plots EI regular benefit rates by education and jurisdiction.

Figure 2.5b Employment Insurance regular benefit rates by education and jurisdiction, adults aged 16 and over, 2005 to 2009



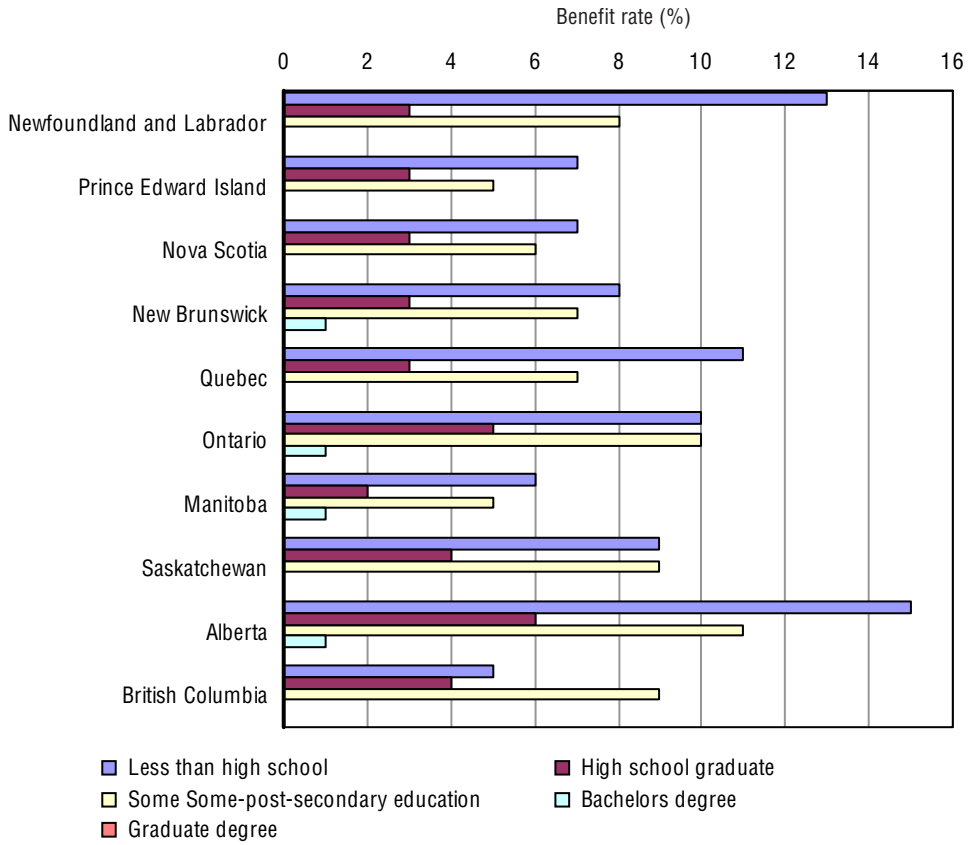
Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals that the differences in regular EI benefit receipt rates by education are much smaller than those observed for EI maternity benefits. Only in Prince Edward Island does one see large differences in benefit rates between those with a Bachelors or Graduate Degree and their less educated peers.

Figure 2.5c plots Social Assistance benefit rates by education and jurisdiction.

The differences in regular EI benefit receipt rates by education are much smaller than those observed for EI maternity benefits. Only in Prince Edward Island does one see large differences in benefit rates between those with a Bachelors or Graduate Degree and their less educated peers.

Figure 2.5c Social Assistance benefit rates by education and jurisdiction, adults aged 16 and over, 2005 to 2009



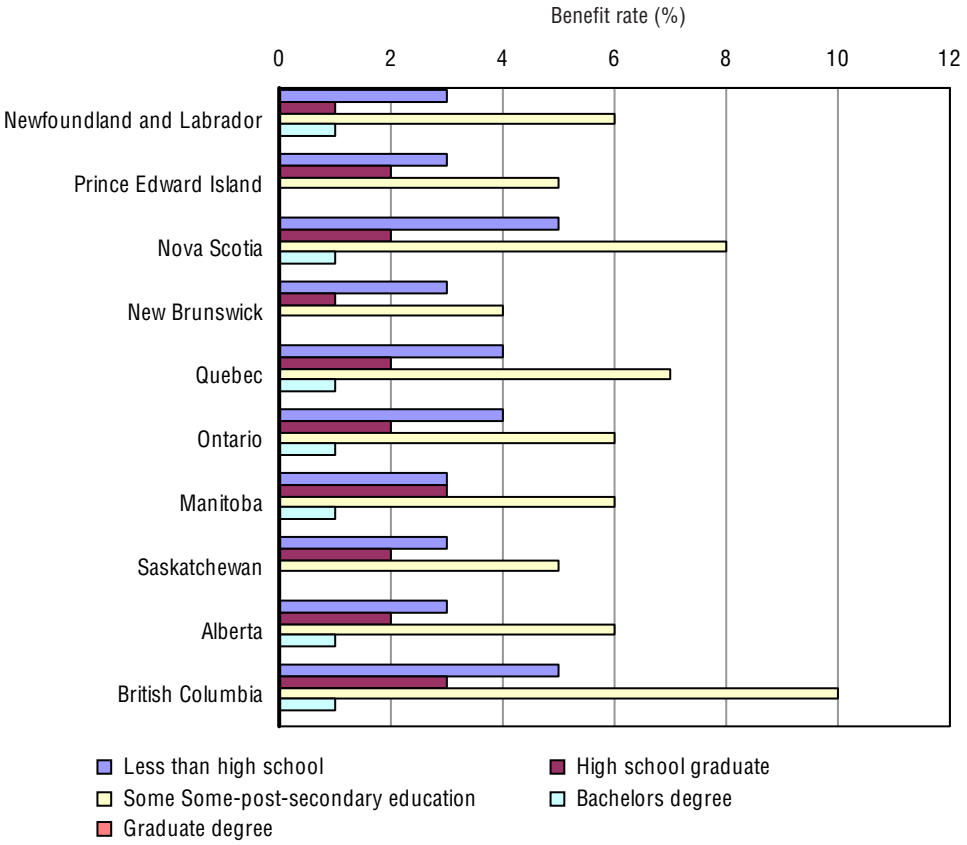
Source: 2003 IALSS and 2005 to 2009 SLID.

Adults with less than a high school education exhibit much higher rates of Social Assistance benefit receipt. Interestingly, adults with some post-secondary education also exhibit higher Social Assistance benefit rates than those with only high school graduation

The figure reveals that adults with less than a high school education exhibit much higher rates of Social Assistance benefit receipt. Interestingly, adults with some post-secondary education also exhibit higher Social Assistance benefit rates than those with only high school graduation. Investments in literacy are likely to increase both employment levels and earnings of those without a degree or diploma and significant reductions in the Social Assistance benefit receipt rates for the group.

Figure 2.5d plots Workers Compensation benefit rates by education and jurisdiction.

Figure 2.5d Workers Compensation benefit rates by education and jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

Adults with some post-secondary education and those without high school graduation exhibit significantly higher rates of Workers Compensation benefit receipt.

The figure reveals that two groups of adults – those with some post-secondary education and those without high school graduation – exhibit significantly higher rates of Workers Compensation benefit receipt. Again, investments in literacy are likely to have precipitate material reductions in Workers Compensation benefit receipt rates for these two populations[1].

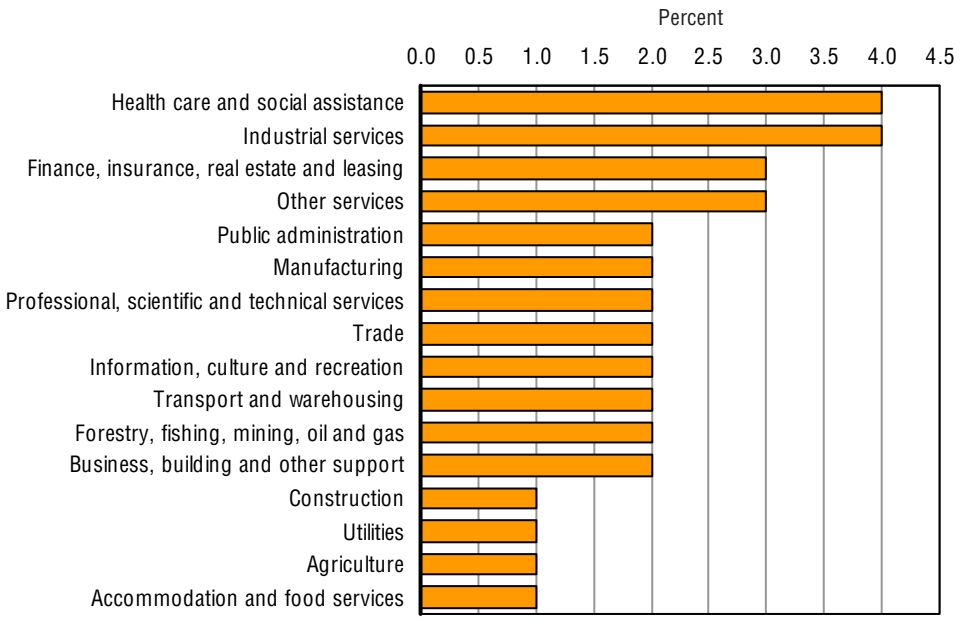
Industry

The following series of charts explore differences in benefit receipt rates by industry.

Figure 2.6a plots EI maternity benefit rates by industry.

1. Provided that increased literacy skill provides workers with the means to reduce the likelihood that they will experience a workplace illness or accident.

Figure 2.6a Employment Insurance maternity benefit rates by industry, adults aged 16 and over, 2005 to 2009



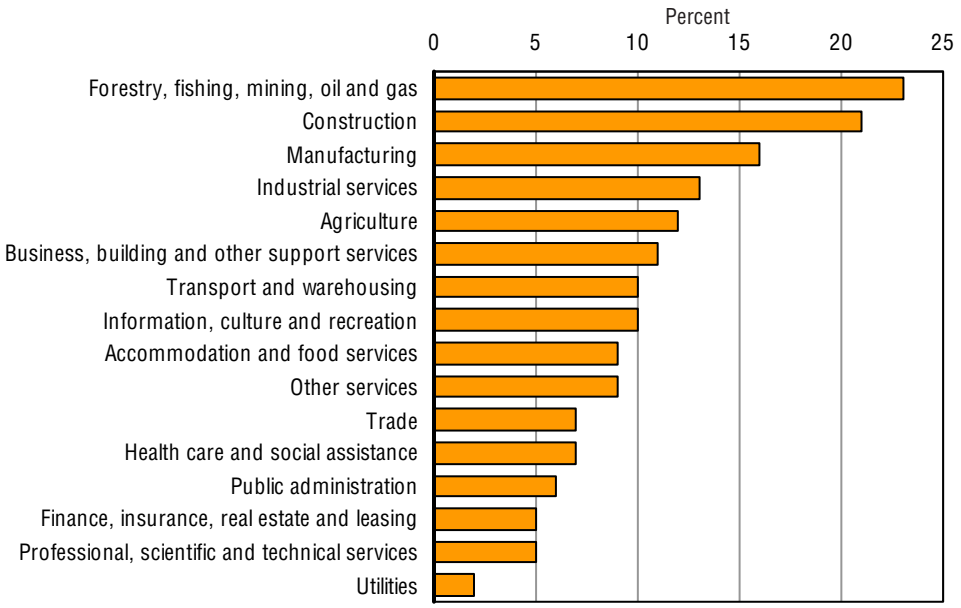
Source: 2003 IALSS and 2005 to 2009 SLID.

There are large differences in EI maternity benefit receipt rates by industry.

The figures reveal the existence of large differences in EI maternity benefit receipt rates by industry. Some of these differences are related to occupational segregation of employment by gender and to differences in the conditions of employment in different industries. For example, rates of EI maternity benefit receipt are 4 times higher in the female-dominated health care and social assistance industry than in the male dominated agriculture and construction industries. The premiums paid by employers and employees for EI maternity coverage would only drop if the resultant wage and employment increases reduced birthrates.

Figure 2.6b plots EI regular benefit rates by industry.

Figure 2.6b Employment Insurance regular benefit rates by industry, adults aged 16 and over, 2005 to 2009

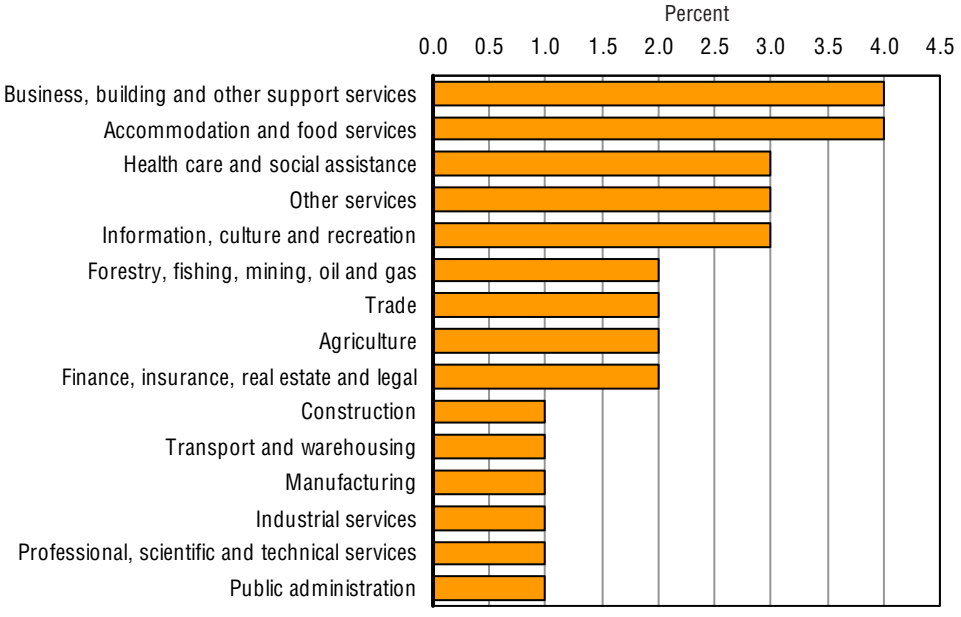


Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals very large differences in regular EI benefit rates by industry, from a high of 23% for Forestry, Fishing, Mining, Oil and Construction to a low of 2% for utilities.

Figure 2.6c plots Social Assistance benefit rates by industry.

Figure 2.6c Social Assistance benefit rates by industry, adults aged 16 and over, 2005 to 2009



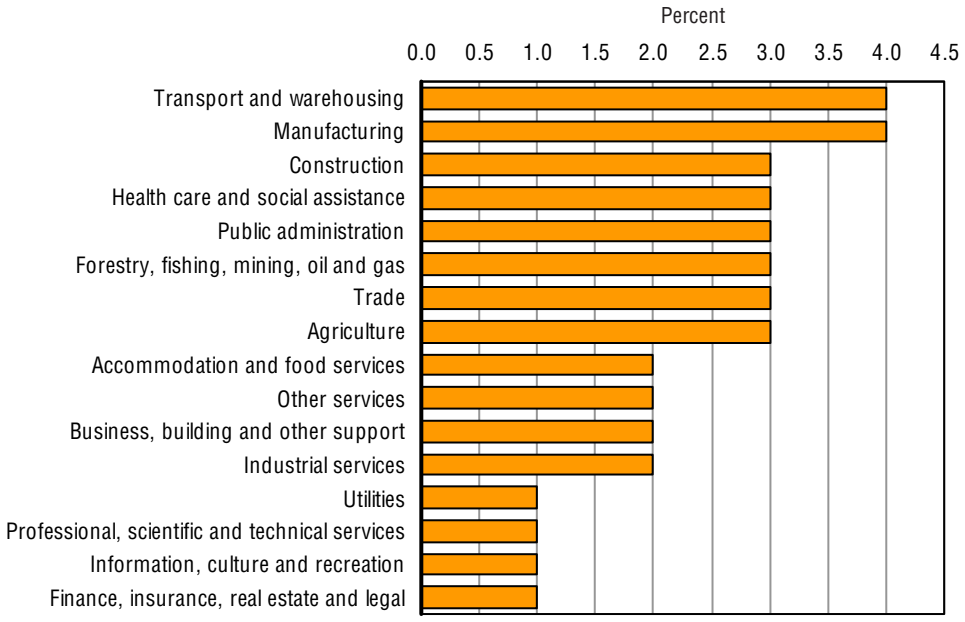
Source: 2003 IALSS and 2005 to 2009 SLID.

... from a high of 4% for Business, Building Maintenance and other Support to Forestry, Fishing, Mining, Oil and Construction to a low of 0% for utilities. Investments in literacy are likely to precipitate dramatic reductions in industry-specific premium rates in those industries with the highest payout rates.

The figure reveals very large differences in regular EI benefit rates by industry, from a high of 4% for Business, Building Maintenance and other Support to Forestry, Fishing, Mining, Oil and Construction to a low of 0% for utilities. Investments in literacy are likely to precipitate dramatic reductions in industry-specific premium rates in those industries with the highest payout rates.

Figure 2.6d plots Workers Compensation benefit rates by industry.

Figure 2.6d Workers Compensation benefit rates by industry, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

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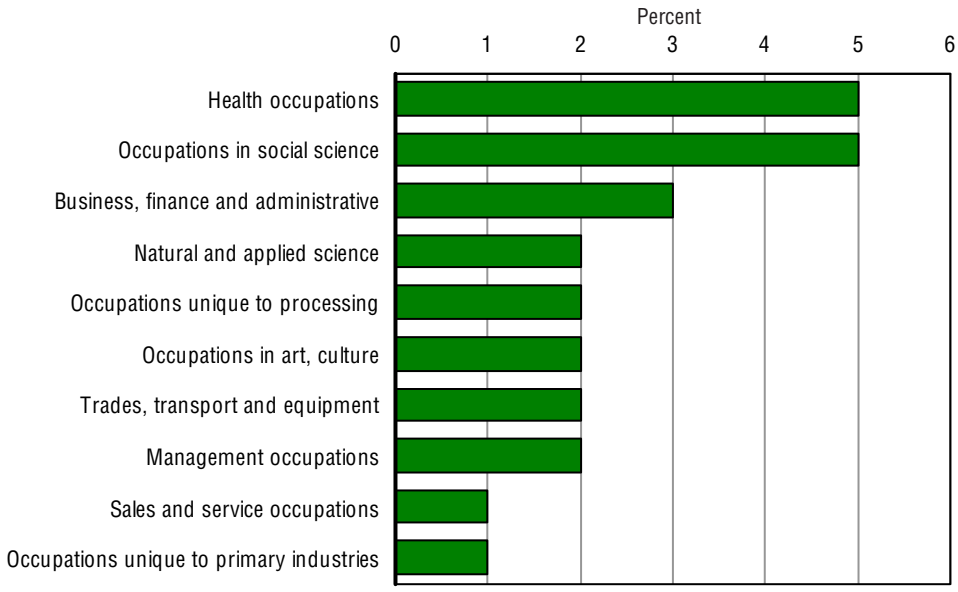
Occupation

The following series of figures profile the distribution of rates of benefit receipt by occupation.

Figure 2.7a plots EI maternity benefit rates by occupation.

Figure 2.7a Employment Insurance maternity benefit rates by occupation, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals the existence of significant differences in EI maternity benefit rates by occupation. For example, the rate of EI maternity receipt in health occupations is 5 times that observed in occupations unique to primary industries.

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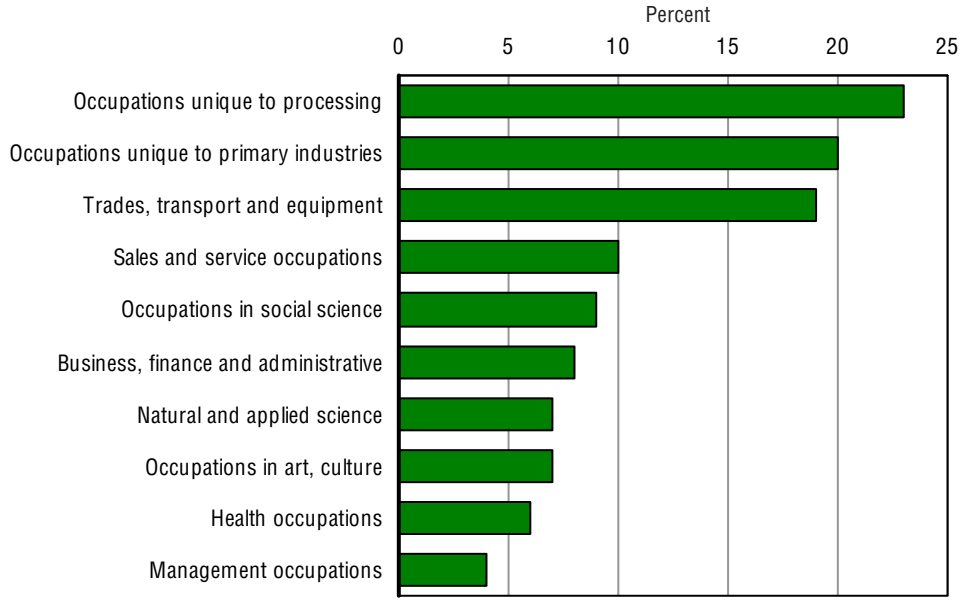
Figure 2.7b plots EI regular benefit rates by occupation.

Figure 2.7b Employment Insurance regular benefit rates by occupation, adults aged 16 and over, 2005 to 2009



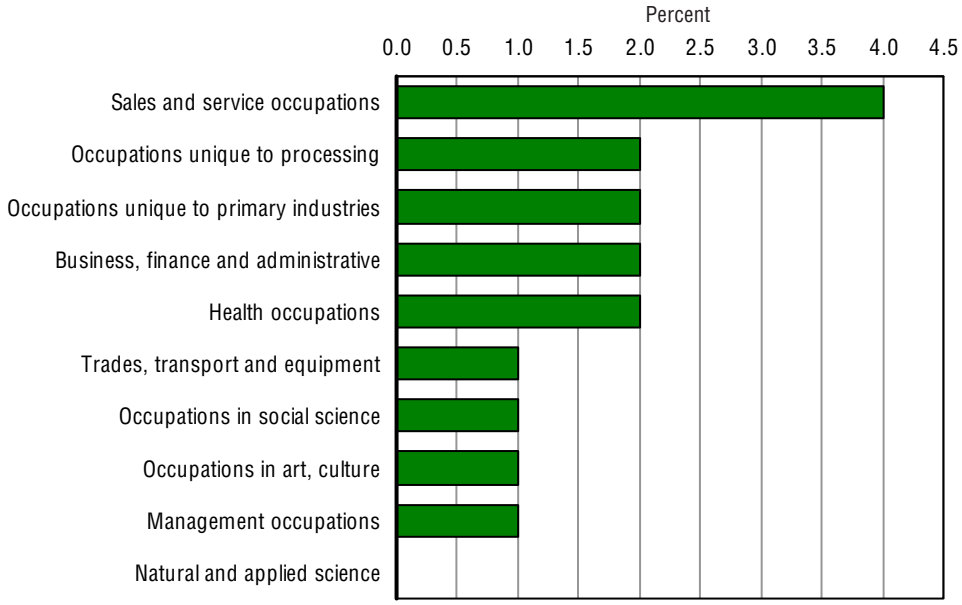
Source: 2003 IALSS and 2005 to 2009 SLID.

Rates of regular EI benefit receipt vary significantly by occupation, from a high of 23% in occupations unique to processing to a low of 4% in management occupations.

The figure reveals that rates of regular EI benefit receipt vary significantly by occupation, from a high of 23% in occupations unique to processing to a low of 4% in management occupations.

Figure 2.7c plots Social Assistance benefit rates by occupation.

Figure 2.7c Social Assistance benefit rates by occupation, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals that social assistance benefit rates are significantly lower than rates of regular EI. Moreover, rates vary significantly by occupation, from a high of 4% in sales and service occupations to 1% in occupations in natural and applied science.

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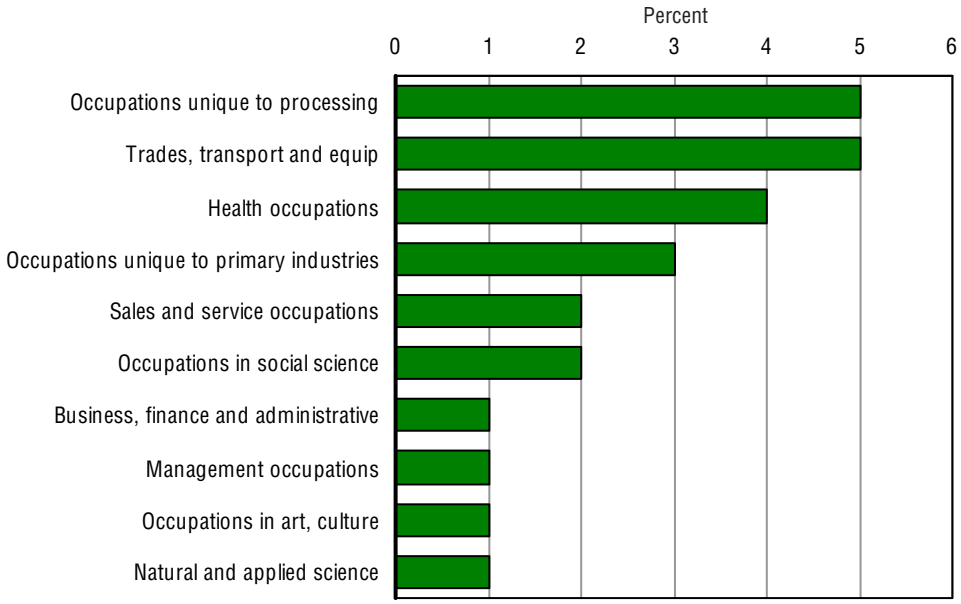
Figure 2.7d plots Workers Compensation benefit rates by occupation.

Figure 2.7d Workers Compensation benefit rates by occupation, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals the existence of significant variation in Workers Compensation benefit rates by occupation, from a high of 5% in occupations unique to processing to a low of 1% in natural and applied science occupations.

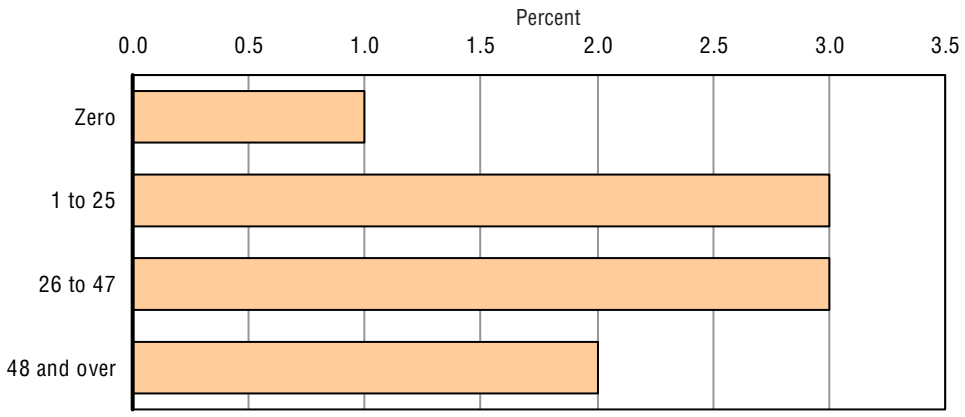
Workers Compensation benefit rates vary by occupation, from a high of 5% in occupations unique to processing to a low of 1% in natural and applied science occupations.

Weeks worked

The following series of charts profiles the distribution of weeks worked by program. The goal of this analysis is to show how benefit rates differ by how much one works. Benefit receipt in all of the programs are tied, in some way or other, to the number of weeks worked and the rate of pay.

Figure 2.8a plots EI maternity benefit rates by weeks worked by jurisdiction.

Figure 2.8a Employment Insurance maternity benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009



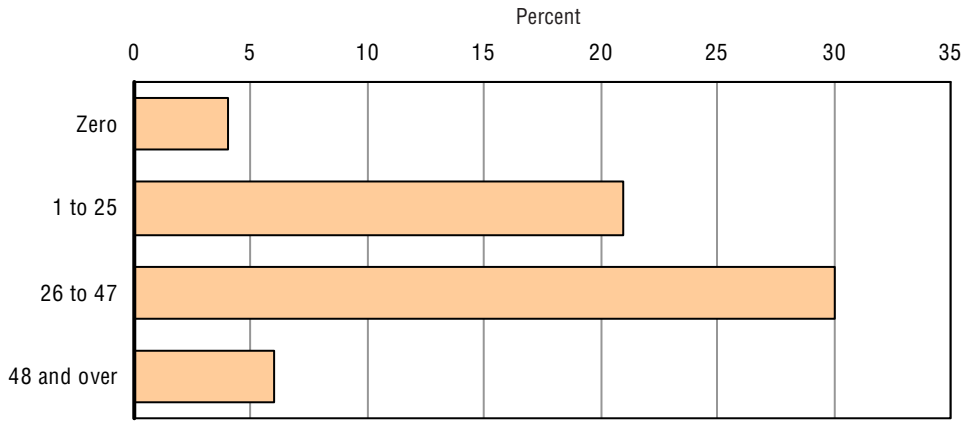
Source: 2003 IALSS and 2005 to 2009 SLID.

There are only small variations in the rate of EI maternity benefit receipt by average weeks worked per reference year…

The figure shows small variations in the rate of EI maternity benefit receipt by average weeks worked per reference year.

Figure 2.8b plots EI regular benefit rates by weeks worked by jurisdiction.

Figure 2.8b Employment Insurance regular benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009



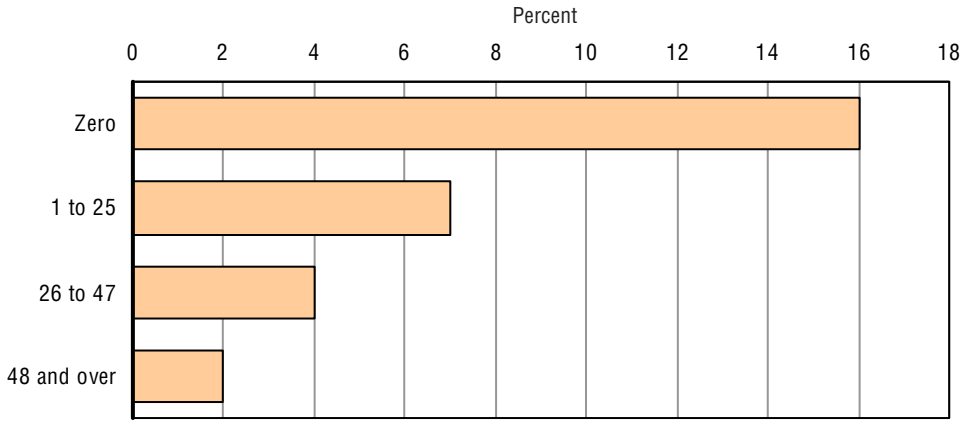
Source: 2003 IALSS and 2005 to 2009 SLID.

…but significant variation in regular EI benefit receipt rates. 20% of adults that worked 1 to 25 weeks received benefits compared to 30% of adults that worked 26 to 47 weeks

The figure reveals significant variation in regular EI benefit receipt rates. 20% of adults that worked 1 to 25 weeks received benefits compared to 30% of adults that worked 26 to 47 weeks.

Figure 2.8c plots Social Assistance benefit rates by weeks worked by jurisdiction.

Figure 2.8c Social Assistance benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009



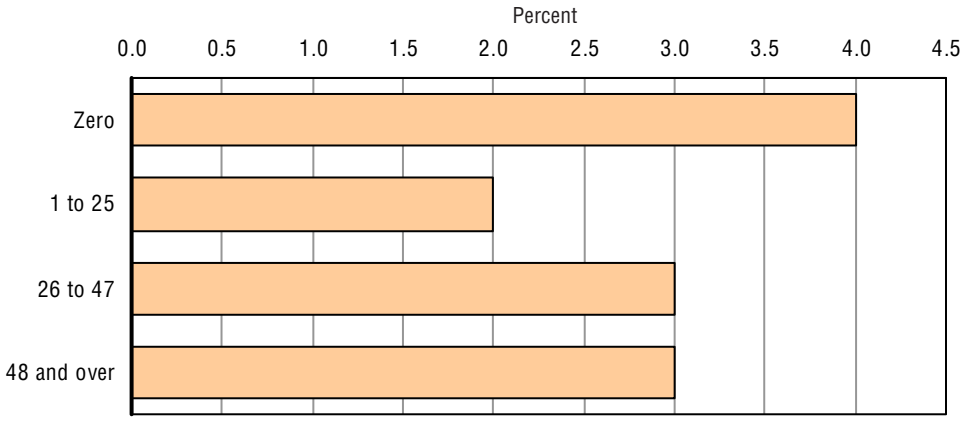
Source: 2003 IALSS and 2005 to 2009 SLID.

The likelihood of Social Assistance benefit receipt falls dramatically from 16% for adults who worked not at all to 2% for those who worked 48 or more weeks on average so an investment in raising the skills of Social Assistance beneficiaries is likely to precipitate rapid reductions in the rate of Social Assistance receipt.

The figure reveals the expected relationship – the likelihood of Social Assistance benefit receipt falls dramatically from 16% for adults who worked not at all to 2% for those who worked 48 or more weeks on average. Research has shown that literacy skills have a profound positive impact on the incidence of employment in the course of a year, on the number of weeks worked and on wage rates. Thus, an investment in raising the skills of Social Assistance beneficiaries is likely to precipitate rapid reductions in the rate of Social Assistance receipt.

Figure 2.8d plots Workers Compensation benefit rates by weeks worked by jurisdiction.

Figure 2.8d Workers Compensation benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

Workers Compensation benefit rates are far less related to the number of weeks worked per reference year. In fact, the highest rate of benefit receipt - 4% - is observed for adults who did not work – a finding that suggests that the Workers Compensation program serves a large percentage of workers with long term illnesses or disabilities. Investments in literacy skill would reduce the incidence of workplace illness and accident, the rate of Worker's Compensation benefit receipt and, most likely, the duration of absence from work.

The figure reveals that Workers Compensation benefit rates are far less related to the number of weeks worked per reference year. In fact, the highest rate of benefit receipt - 4% - is observed for adults who did not work – a finding that suggests that the Workers Compensation program serves a large percentage of workers with long term illnesses or disabilities. Thus, it is reasonable to believe that investments in literacy skill would reduce the incidence of workplace illness and accident, the rate of Worker's Compensation benefit receipt and, most likely, the duration of absence from work.

Income

The following series of charts plot the rate of benefit receipt by income quintile. The goal of this analysis is to document the degree to which benefit rates are similar across income groups.

The income support programs that are the focus of this analysis are quite different in conception and execution.

The EI and Workers Compensation programs are best thought of as a form of insurance in which participants receive a guarantee of a replacement income stream under a well-defined set of circumstances following a disruption in their income. Qualification depends, in the first instance, upon enrollment and payment of a premium for coverage.

Workers qualify for regular EI benefits through paid employment and are paid, up to a maximum, as a percentage of insurable earnings.

Workers qualify for EI maternity benefits through paid employment and are paid, up to a maximum, as a percentage of insurable earnings.

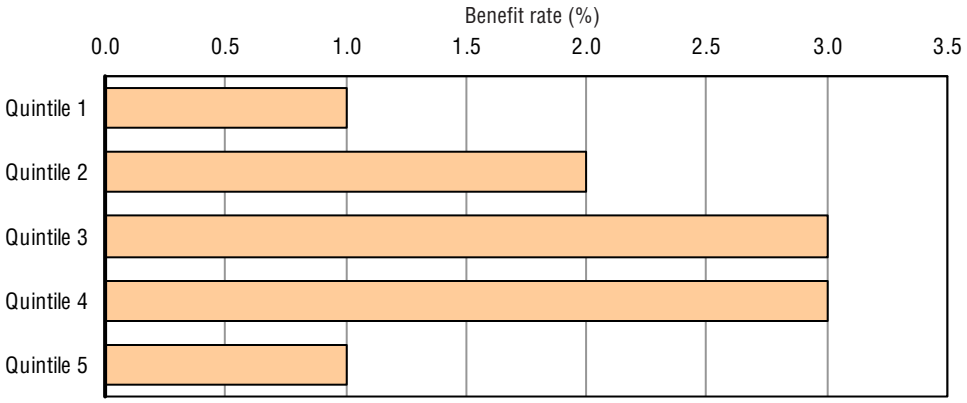
Workers qualify for Workers Compensation through paid employment and are paid, up to a maximum, as a result of a workplace illness, accident or disability.

Adults qualify for Social Assistance simply on the basis of need tested against income and assets.

Thus, by definition, EI regular, EI maternity and Workers Compensation are related to income in a positive way, at least up to the maximum benefit defined for each program. Social Assistance is also related to income but in a negative way i.e. benefits rise as income falls, up to a maximum.

Figure 2.9a plots EI maternity benefit rates by income quintile.

Figure 2.9a Employment Insurance maternity benefit rates by income quintile, adults aged 16 and over, 2005 to 2009



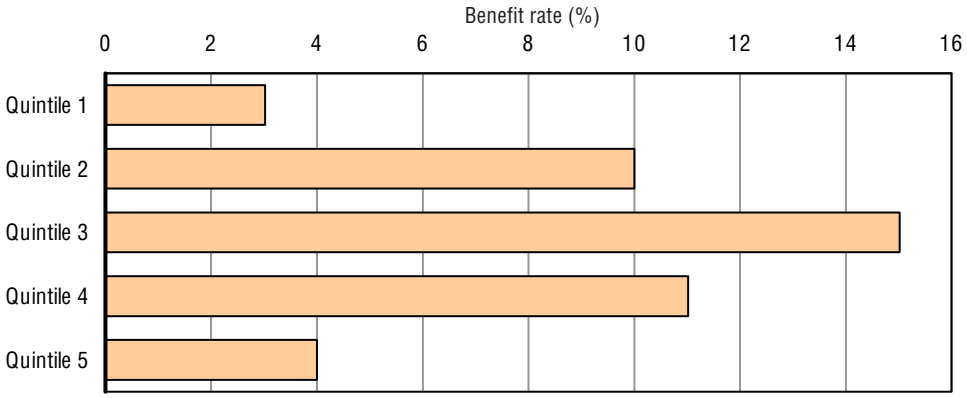
Note: Quintiles divide the population into groups, with each representing 20% of the population.
Source: 2003 IALSS and 2005 to 2009 SLID.

The figure reveals that rates of EI maternity benefits rise rapidly across the first three income quintiles and then drop rapidly. The rate of benefit receipt for adults in the 3rd income is 3 times that observed for those adults in the lowest income quintile.

Figure 2.9b plots EI regular benefit rates by income quintile.

Rates of EI maternity benefits rise rapidly across the first three income quintiles and then drop rapidly. The rate of benefit receipt for adults in the 3rd income is 3 times that observed for those adults in the lowest income quintile.

Figure 2.9b Employment Insurance regular benefit rates by income quintile, adults aged 16 and over, 2005 to 2009



Note: Quintiles divide the population into groups, with each representing 20% of the population.
Source: 2003 IALSS and 2005 to 2009 SLID.

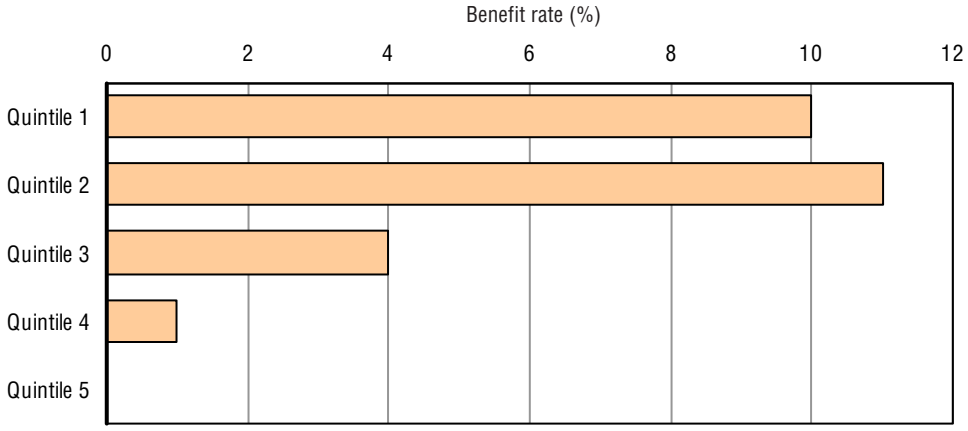
The figure reveals a similar pattern of benefit receipt for regular EI benefits. Rates of benefit receipt rise rapidly from the 1st through 3rd income quintiles and then fall in the highest two quintiles. The differences in rates of benefit receipt for regular EI are, however, far more pronounced. Workers in the 3rd income quintile have over 4 times the probability of receiving benefits than their peers in the lowest and

Rates of regular EI benefit receipt also rise rapidly from the 1st through 3rd income quintiles and then fall in the highest two quintiles. The differences in rates of benefit receipt for regular EI are, however, far more pronounced. Workers in the 3rd income quintile have over 4 times the probability of receiving benefits than their peers in the lowest and highest income quintiles.

highest income quintiles. Clearly, this information shows that the ability to access EI is more likely for those in the middle class.

Figure 2.9c plots Social Assistance benefit rates by income quintile

Figure 2.9c Social Assistance benefit rates by income quintile, adults aged 16 and over, 2005 to 2009

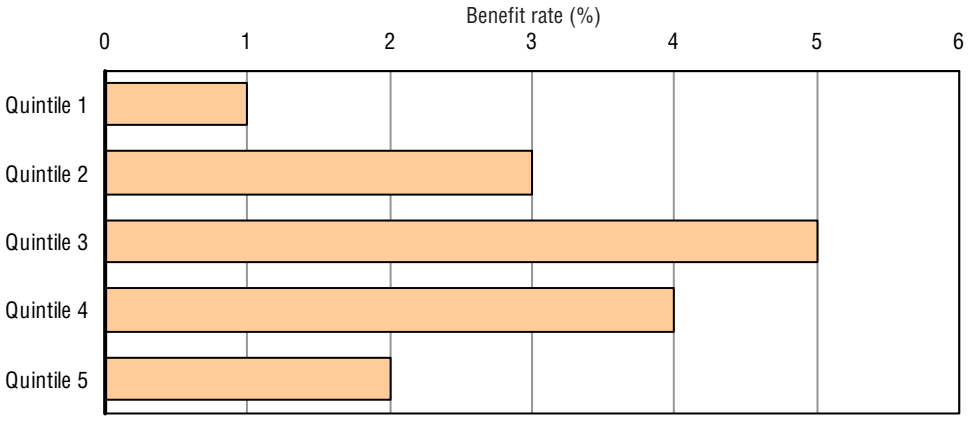


Note: Quintiles divide the population into groups, with each representing 20% of the population.
Source: 2003 IALSS and 2005 to 2009 SLID.

Adults in the two lowest quintiles are much more likely than those with higher incomes to have received Social Assistance benefits.

The chart shows that adults in the two lowest quintiles are much more likely than those with higher incomes to have received Social Assistance benefits.

Figure 2.9d Workers Compensation benefit rates by income quintile, adults aged 16 and over, 2005 to 2009



Note: Quintiles divide the population into groups, with each representing 20% of the population.
Source: 2003 IALSS and 2005 to 2009 SLID.

Adults in the third and fourth income quintiles are more likely to have received Worker's Compensation benefits

In sharp contrast adults in the third and fourth income quintiles are more likely to have received Worker's Compensation benefits.

Summary

This chapter has profiled four government run income support programs – the Federal government's Employment Insurance maternity benefits and regular benefits program, the provinces' Social Insurance and Worker's Compensation programs. The chapter begins by confirming that Canadian governments spend significant amounts on these programs. The chapter then documents significant differences in rates of benefit receipt by province with each province displaying a unique pattern. An exploration of patterns of benefit receipt over a range of demographic characteristics reveals considerable variation from province to province in who benefits most from each program.

Provided that there is a causal relationship between literacy skill and benefit receipt, these findings suggest three conclusions, including that:

- Investments in literacy skill would precipitate large savings in government expenditures, a finding that justifies our exploration of skill investments as a potential source of savings.
- The amount saved would vary significantly from province to province in response to large differences in rates of benefit receipt and amounts paid, a finding that suggests that any skill-induced change in income support expenditures will be politically contentious.
- Large differences in rates of receipt for various demographic groups imply that any reductions in income support payments would be borne disproportionately by some groups, a finding that raises questions about what impact that a skill investment would have on employment and income inequality.

The next chapter attempts to establish that a causal relationship between literacy and benefit receipt exists.

The foregoing analysis confirms three things:

Canadian governments spend significant amounts on these programs.

There are significant differences in rates of benefit receipt by province with each province displaying a unique pattern. There is considerable variation from province to province in who benefits most from each program.

Provided that there is a causal relationship between literacy skill and benefit receipt, these findings suggest three conclusions:

Investments in literacy skill would precipitate large savings in government expenditures

The amount saved would vary significantly from province to province in response to large differences in rates of benefit receipt and amounts paid

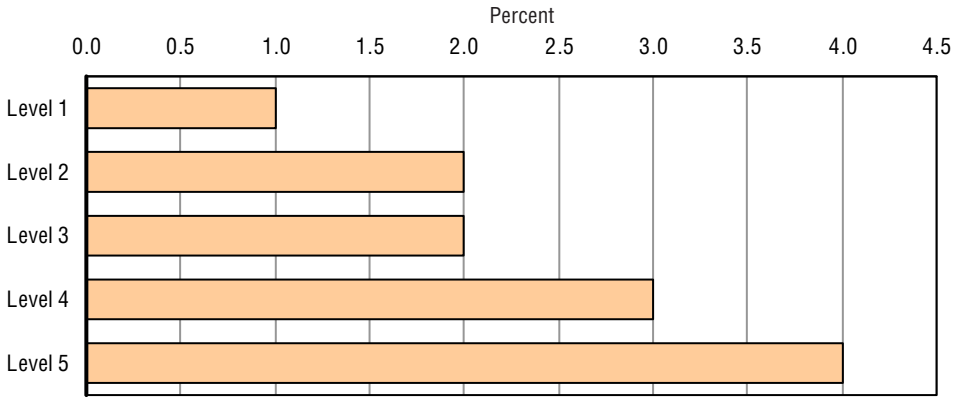
Large differences in rates of receipt for various demographic groups imply that any reductions in income support payments would be borne disproportionately by some groups

Chapter 3 The Relationship Between Benefit Receipt and Literacy

This chapter explores the relationship between benefit receipt and prose literacy. The analysis presented begins by exploring how rates of benefit receipt vary by literacy level. Having established that a relationship exists, the analysis then tests whether the relationship can be explained by differences in the characteristics of individuals at each literacy level. The presence of significant differences in benefit rates by prose proficiency level after adjustment for these underlying differences in characteristics would provide support for the hypothesis that significant reductions in benefit rates and amounts could be precipitated by investments that serve to raise literacy skill levels.

Figure 3.1a plots EI maternity benefit rates by gender by jurisdiction.

Figure 3.1a Employment Insurance maternity benefit rates by prose literacy level, adults aged 16 and over, 2005 to 2009



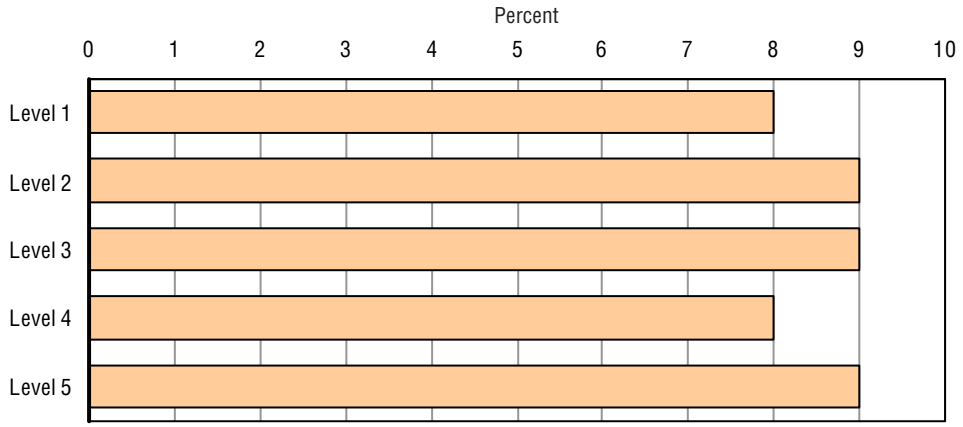
Source: 2003 IALSS and 2003 SLID.

The figure reveals the presence of significant variation in rates of EI maternity benefit by literacy level.

Rates of EI maternity benefit vary significantly by literacy level.

Figure 3.1b plots EI regular benefit rates by prose literacy level.

Figure 3.1b Employment Insurance regular benefit rates by prose literacy level, adults aged 16 and over, 2005 to 2009



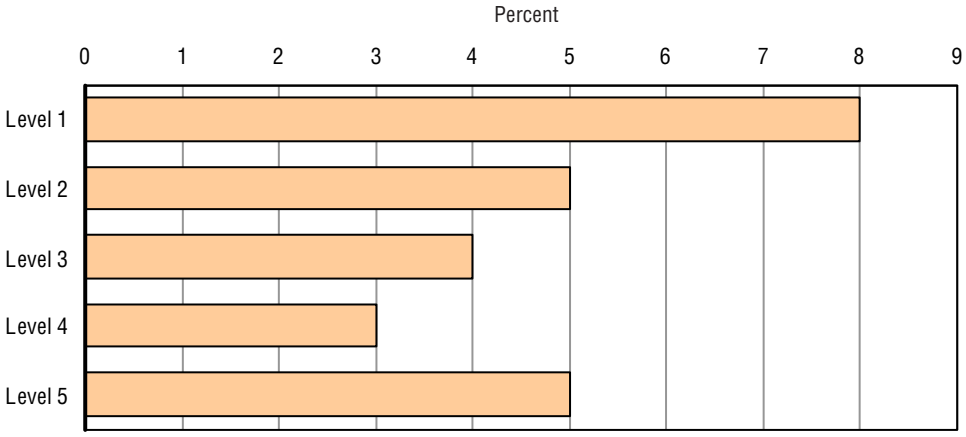
Source: 2003 IALSS and 2005 to 2009 SLID.

…compared to only small variations in the rate of regular EI benefit by prose literacy level.

The figures reveal only small variations in the rate of regular EI benefit by prose literacy level, a finding that would limit the magnitude of any skill-induced reduction in benefit rates.

Figure 3.1c plots Social Assistance benefit rates by jurisdiction.

Figure 3.1c Social Assistance benefit rates by prose literacy level by jurisdiction, adults aged 16 and over, 2005 to 2009

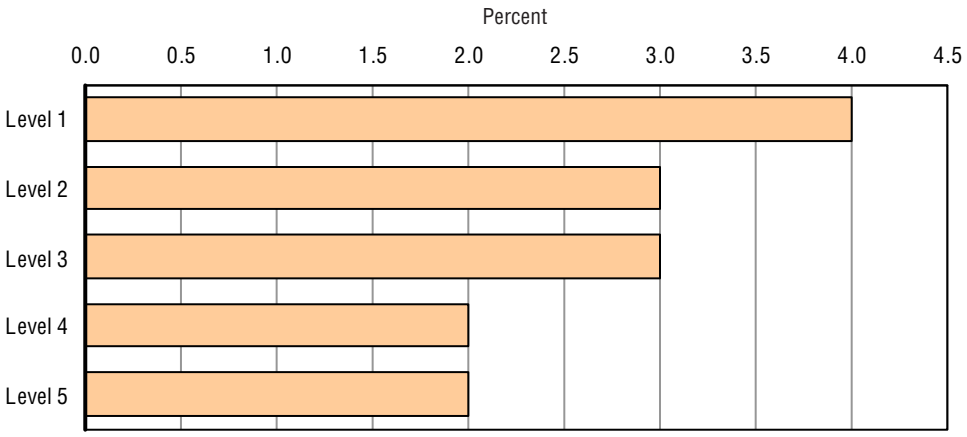


Source: 2003 IALSS and 2005 to 2009 SLID.

There is a strong correlation between Social Assistance benefit rates and prose literacy level. Benefit rates rise from 3% at prose literacy level 4 to 8% at prose literacy level 1. This finding suggests that possibility of significant savings from a literacy skill investment.

The figure reveals a strong correlation between Social Assistance benefit rates and prose literacy level. Benefit rates rise from 3% at prose literacy level 4 to 8% at prose literacy level 1. This finding suggests that possibility of significant savings from a literacy skill investment.

Figure 3.1d Workers Compensation benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The chart reveals an equally strong correlation between Workers Compensation benefit rates and prose literacy skill.

The foregoing series of charts provide strong indirect support for the hypothesis that weak literacy skill underlies some of the observed differences in benefit rates. The regression lines suggest a strong linear relationship in which adults with lower literacy skill levels experience higher levels of benefit receipt.

It might be that some of the observed relationship between literacy skill and benefit rates might simply reflect differences in the demographic composition at each skill level. For example, adults with lower skill levels might simply be older and less educated. In an effort to get more direct support for the central hypothesis a series of analyses were run to estimate the adjusted likelihoods of benefit receipt for each program. Adjustments were made for age, gender, education, industry, occupation, income using logarithmic odds.

There is an equally strong correlation between Workers Compensation benefit rates and prose literacy skill.

These results provide strong indirect support for the hypothesis that weak literacy skill underlies some of the observed differences in benefit rates.

To rule out the possibility that these results might simply reflect differences in the demographic composition at each skill level a more complex analyses was undertaken…

Using odds ratios

Odds ratios reflect the relative likelihood of an event occurring for a particular group compared to a reference group. An odds ratio of one represents equal chances of an event occurring for a particular group vis-à-vis the reference group. Coefficients with a value below one indicate less chance of the event occurring for a particular group compared to the reference group, and coefficients greater than one represent increased chances (Hosmer and Lemeshow, 1989).

For the purpose of the analyses presented in the following figures, the unadjusted likelihoods or odds of adults being in receipt of benefits was set to one for adults who have prose literacy Level 3. Odds greater than one for persons at Levels at Levels 1 and 2 indicate that those persons have increased chances of benefit receipt.

Adjusted likelihoods, or odds, adjust for differences in background characteristics that might interfere with direct comparisons. For example, some of the difference in benefit receipt rates by literacy skill level between immigrants and non-immigrants might be a function of the fact that immigrants are significantly more educated on average than their non-immigrant peers.

Regular Employment Insurance

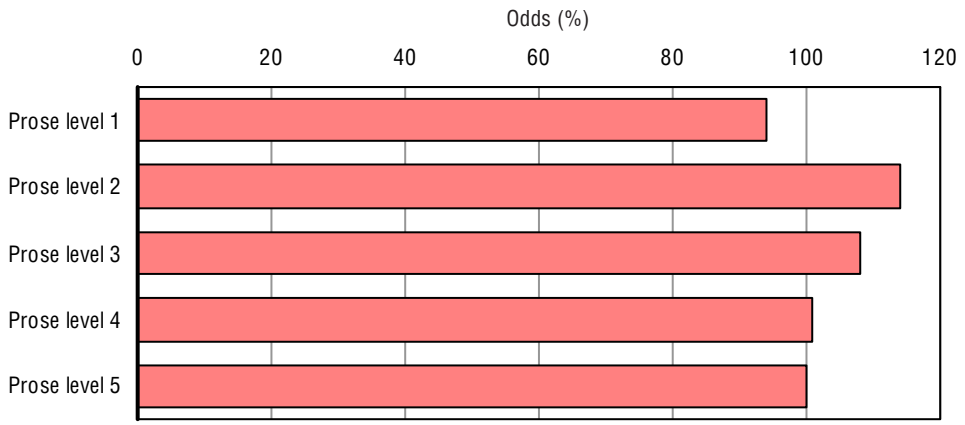
The first series of charts provide estimates of average likelihoods of different groups of adults having received regular Employment Insurance benefits in the course of a year.

Prose literacy level

Adults at prose level 1 are less likely the other literacy levels to receive regular EI benefits. Adults with prose level 2 are 20% more likely to have received regular EI benefits. The figure suggests that skill upgrading directed at adults currently at prose levels 2 and 3 would yield the largest regular EI savings.

The first chart in the series reveals an interesting pattern of results. Adults at prose level 1 are less likely the other literacy levels to receive regular EI benefits. Adults with prose level 2 are 20% more likely to have received regular EI benefits. The figure suggests that skill upgrading directed at adults currently at prose levels 2 and 3 would yield the largest regular EI savings.

Figure 3.2a **Impact of prose literacy level on the odds of regular Employment Insurance benefit receipt, adults aged 16 and over, Canada, 2003**



Source: 2003 IALSS and 2005 to 2009 SLID.

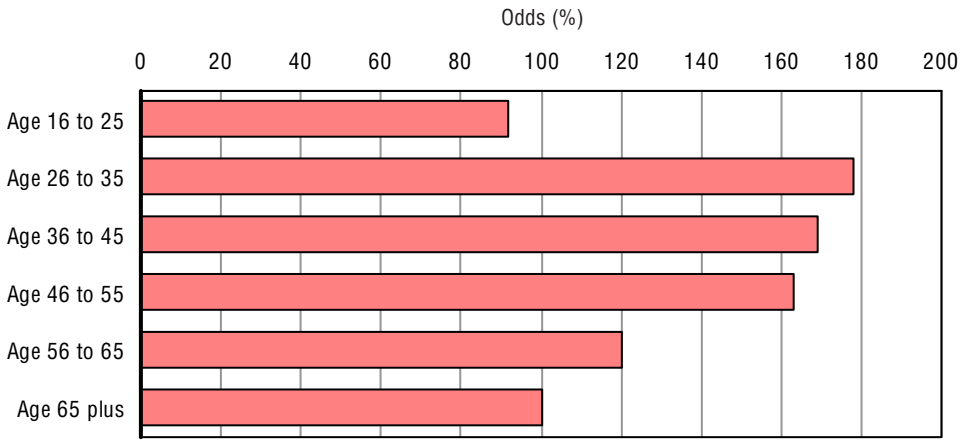
Age Group

Adults aged 16 to 25 have the lowest likelihood of receiving regular EI benefits. Otherwise likelihoods of regular EI benefit receipt fall steadily with age.

Adults aged 16 to 25 have the lowest likelihood of receiving regular EI benefits. Otherwise likelihoods of regular EI benefit receipt fall steadily with age.

The figure suggests that skill upgrading directed at adults aged 26 to 55 would yield the most rapid regular EI savings.

Figure 3.2b **Impact of age on the odds of regular Employment Insurance benefit receipt, adults aged 16 and over, Canada, 2003**



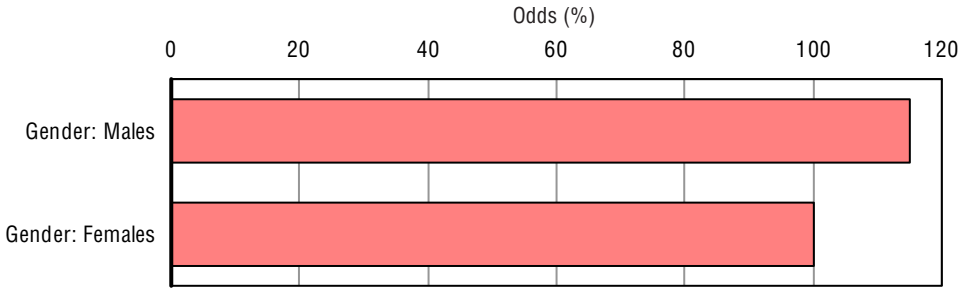
Source: 2003 IALSS and 2005 to 2009 SLID.

Gender

Men are 15% more likely than women to have received regular EI benefits, a finding that suggests that skill upgrading directed at men would yield the largest regular EI savings.

Men are 15% more likely than women to have received regular EI benefits, a finding that suggests that skill upgrading directed at men would yield the largest regular EI savings.

Figure 3.2c Impact of gender on the odds of regular Employment Insurance benefit receipt, adults aged 16 and over, Canada, 2003



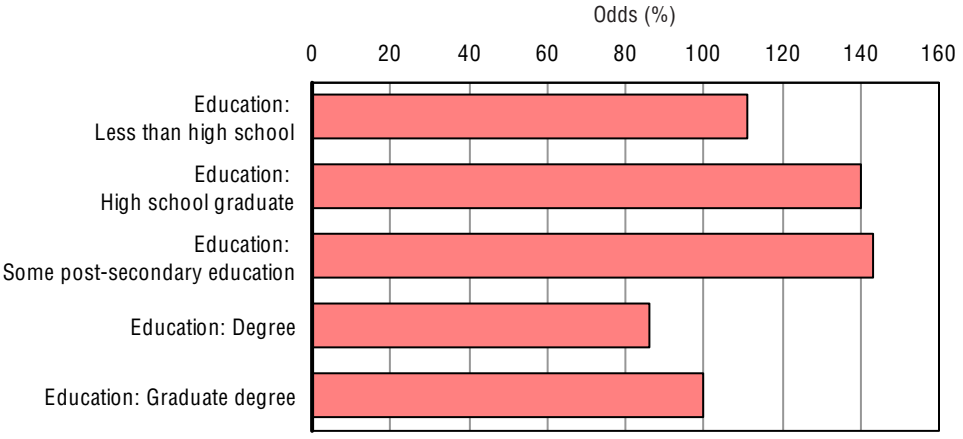
Source: 2003 IALSS and 2005 to 2009 SLID.

Education level

The likelihood of having received regular EI benefits rises steadily with rising education below the degree level. Adults with post-secondary degrees, diplomas and certificates have lower likelihoods of EI benefit receipt. The figure suggests that skill upgrading directed at high school graduates and adults with some post-secondary would yield the most rapid regular EI savings.

The likelihood of having received regular EI benefits rises steadily with rising education below the degree level, a finding that suggests that skill upgrading directed at high school graduates and adults with some post-secondary would yield the most rapid regular EI savings.

Figure 3.2d Impact of education on regular Employment benefit receipt, adults aged 16 and over, Canada, 2003



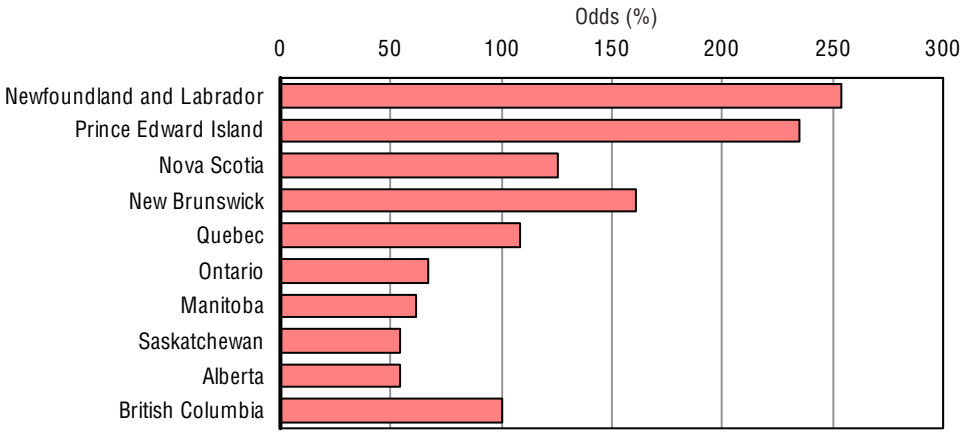
Source: 2003 IALSS and 2005 to 2009 SLID.

Province

Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick and Quebec display higher likelihoods of regular EI benefit receipt. Adults living in Newfoundland and Labrador are over two and half times more likely than their peers living in British Columbia. Likelihoods in Alberta, Saskatchewan, Manitoba and Ontario display lower likelihoods than their peers living in British Columbia. Alberta and Saskatchewan residents have particularly low likelihoods of receiving regular EI benefits – they are 54% less likely than British Columbia residents to have done so.

Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick and Quebec display higher likelihoods of regular EI benefit receipt, a finding that suggests that skill upgrading directed at these adults would yield the most rapid regular EI savings.

Figure 3.2e Impact of province of residence on the odds of regular Employment Insurance, adults aged 16 and over, Canada, 2003



Source: 2003 IALSS and 2005 to 2009 SLID.

Industry

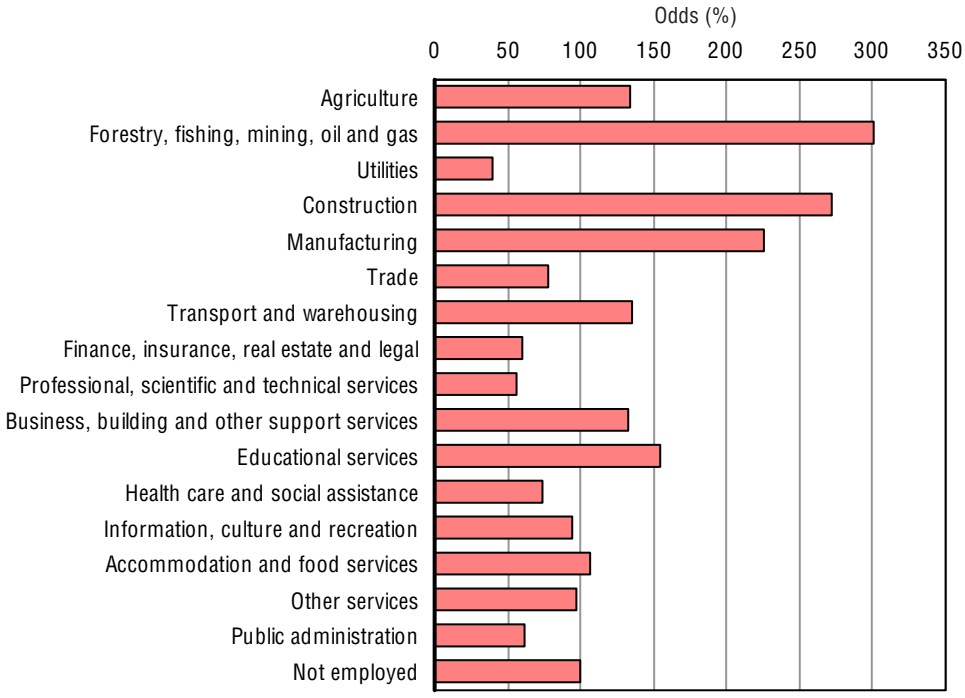
Three industries display relatively low likelihoods of having received regular EI benefits: Utilities (22%), Finance, Insurance Real estate and legal services (55%) and Professional, Scientific and Technical Services (54%).

Three industries display relatively high likelihoods of having received regular EI benefits: Primary industries (332%), Construction (285%) and Manufacturing (206%).

Investing in these industries would yield the most rapid EI savings.

Three industries display relatively high likelihoods of having received regular EI benefits: Primary industries (332%), Construction (285%) and Manufacturing (206%). Investing in these industries would yield the most rapid EI savings.

Figure 3.2f Impact of industry on the odds of regular Employment Insurance benefit receipt, adults aged 16 and over, Canada, 2003



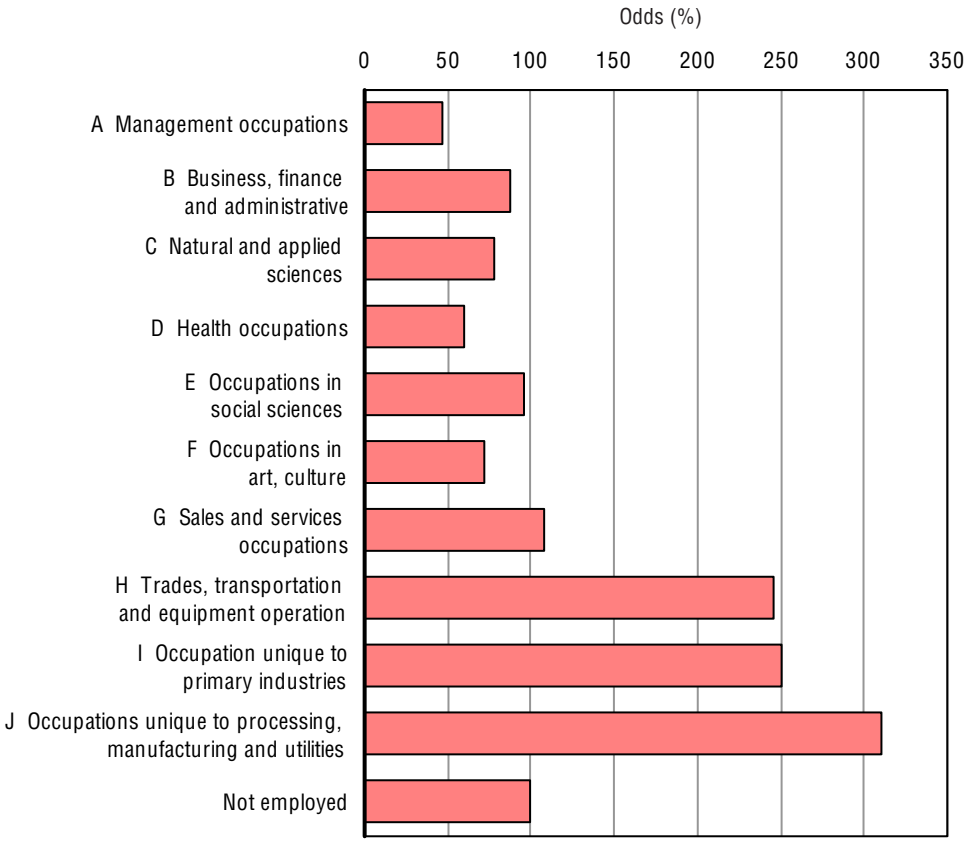
Source: 2003 IALSS and 2005 to 2009 SLID.

Occupation

Occupations unique to processing, manufacturing and Utilities (310%), Occupations unique to primary industries (251%) and Trades, transportation and equipment (246%) display higher likelihoods of regular EI benefit receipt after adjustmnet. Investing in these occupations would yield the most rapid EI savings

Three occupations display higher likelihoods of regular EI benefit receipt: Occupations unique to processing, manufacturing and Utilities (310%), Occupations unique to primary industries (251%) and Trades, transportation and equipment (246%). Investing in these occupations would yield the most rapid EI savings.

Figure 3.2g Impact of occupation on the odds of regular Employment Insurance benefit receipt, adults aged 16 and over, Canada, 2003



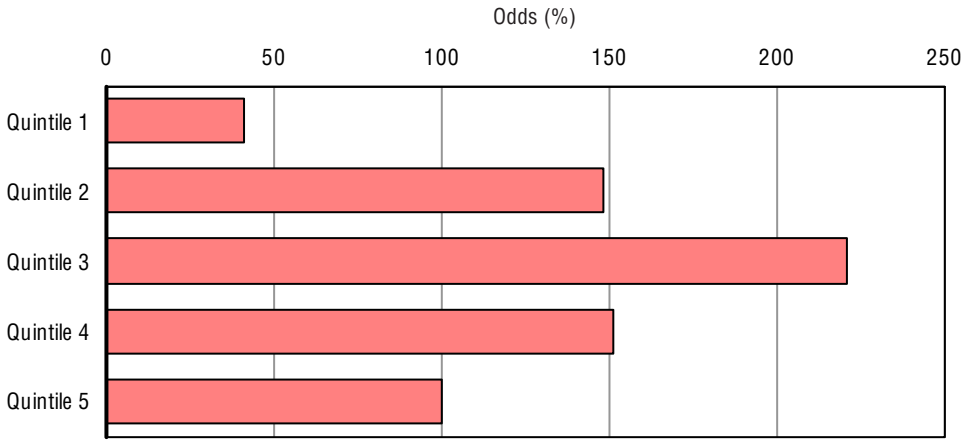
Source: 2003 IALSS and 2005 to 2009 SLID.

Income

Adults in the 3rd income quintile are 221% more likely to have received regular EI benefits after adjustment.

Adults in the 3rd income quintile are 221% more likely to have received regular EI benefits after adjustment.

Figure 3.2h Impact of income on the odds of regular Employment Insurance benefit receipt, adults aged 16 and over, Canada, 2003



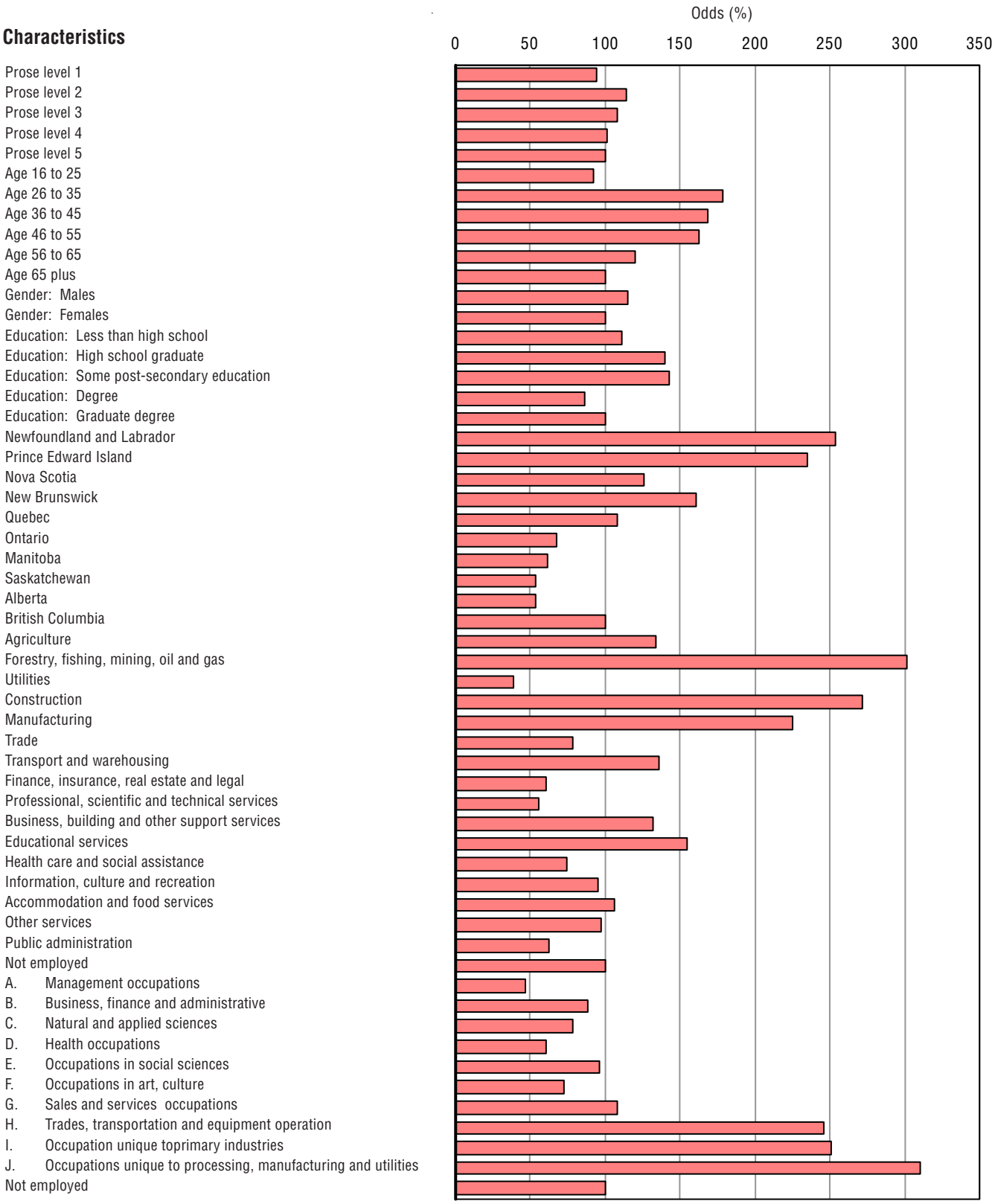
Note: Quintiles divide the population into groups, with each representing 20% of the population.
Source: 2003 IALSS and 2005 to 2009 SLID.

Figure 3.2i provides odds of having received regular EI benefits that have been adjusted to remove the effect of differences in the composition of each group.

The analysis reveals that significant differences in benefit receipt remain even after adjustment for differences in a large number of background characteristics. The following groups have over double the likelihoods of having received regular EI benefits:

- High school graduates 271%,
- Adults with some post-secondary 234%,
- Adults living in Manitoba 257%,
- Adults working in Trade 246%,
- Adults working in sales and services occupations 206%.

Figure 3.2i Adjusted likelihoods of regular Employment Benefit receipt, Adults aged 16 and over, Canada, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

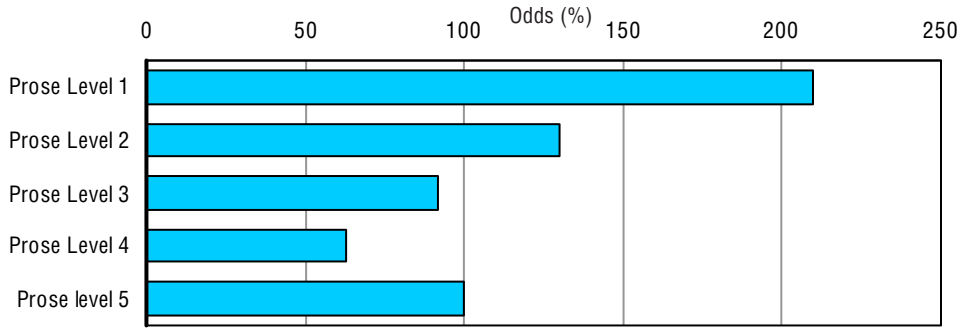
Social assistance

Adults at prose level 1 are twice as likely as the other literacy levels to receive Social Assistance benefits, a finding that suggests that skill upgrading directed at adults currently at prose level1 would yield the largest SA savings.

The second series of charts provide estimates of average likelihoods of different groups of adults having received Social Assistance benefits in the course of a year. The first chart in the series reveals an interesting pattern of results.

Adults at prose level 1 are twice as likely the other literacy levels to receive Social Assistance benefits. The figure suggests that skill upgrading directed at adults currently at prose level1 would yield the largest SA savings.

Figure 3.3a Impact of prose literacy level on the odds of being in receipt of Social Assistance benefits, adults aged 16 and over, 2003



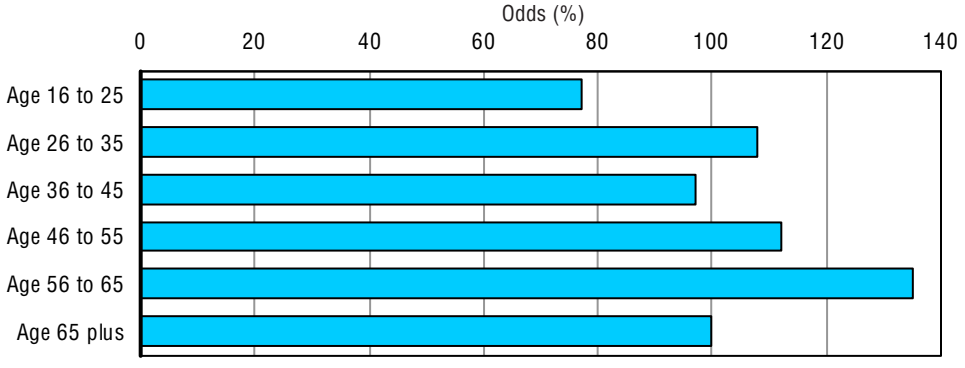
Source: 2003 IALSS and 2005 to 2009 SLID.

Age

Adults aged 56 to 64 have the lowest likelihood of receiving Social Assistance benefits after adjustment so skill upgrading directed at these adults would yield the most rapid SA savings.

Adults aged 56 to 64 have the lowest likelihood of receiving Social Assistance benefits after adjustment. Only youth aged 16 to 25 have low likelihoods of Social Assistance benefit receipt. The figure suggests that skill upgrading directed at adults aged 55 to 64 would yield the most rapid SA savings.

Figure 3.3b Impact of age on odds of Social Assistance benefit receipt, adults aged 16 and over, Canada, 2003



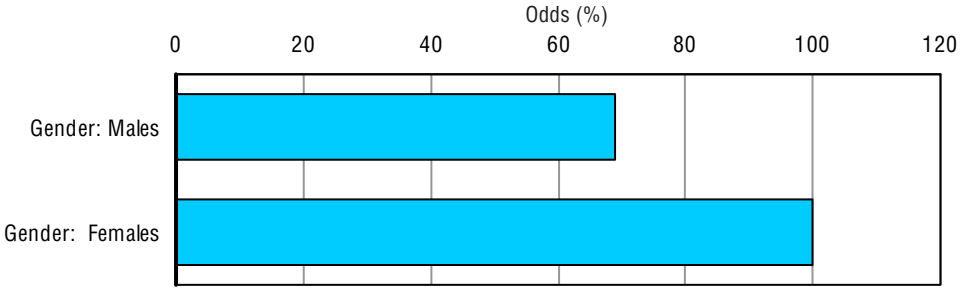
Source: 2003 IALSS and 2005 to 2009 SLID.

Gender

Men are 69% less likely than women to have received Social Assistance benefits, a finding that suggests that skill upgrading directed at women would yield the largest SA savings.

Men are 69% less likely than women to have received Social Assistance benefits, a finding that suggests that skill upgrading directed at women would yield the largest SA savings.

Figure 3.3c Impact of gender on odds of Social Assistance benefit receipt, adults aged 16 and over, Canada, 2003



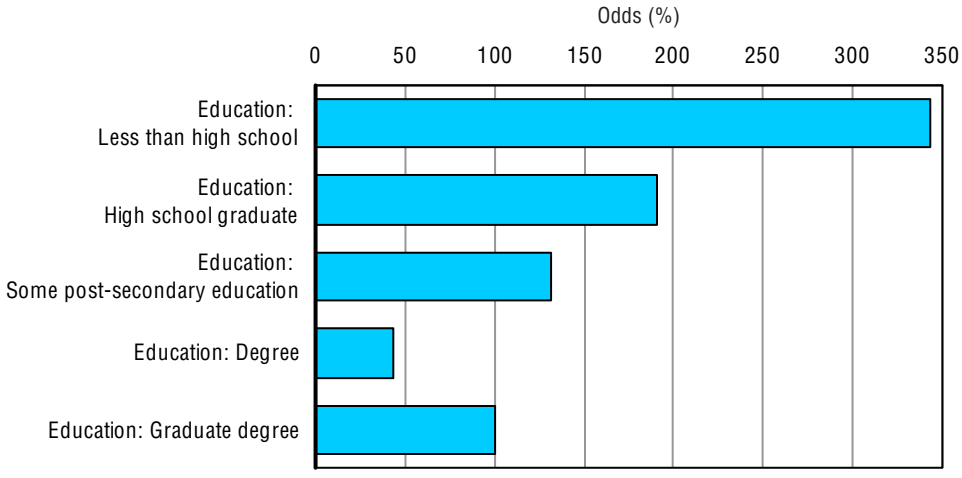
Source: 2003 IALSS and 2005 to 2009 SLID.

Education level

The likelihood of having received Social Assistance falls steadily with rising education at the degree level. Adults with post-secondary degrees, diplomas and certificates have lower likelihoods of SA benefit receipt. The figure suggests that skill upgrading directed at adults with less than a high school education would yield the most rapid SA savings.

The likelihood of having received Social Assistance falls steadily with rising education at the degree level, a finding that suggests that skill upgrading directed at adults with less than a high school education would yield the most rapid SA savings.

Figure 3.3d Impact of education on the odds of Social Assistance benefit receipt, adults aged 16 and over, Canada, 2003



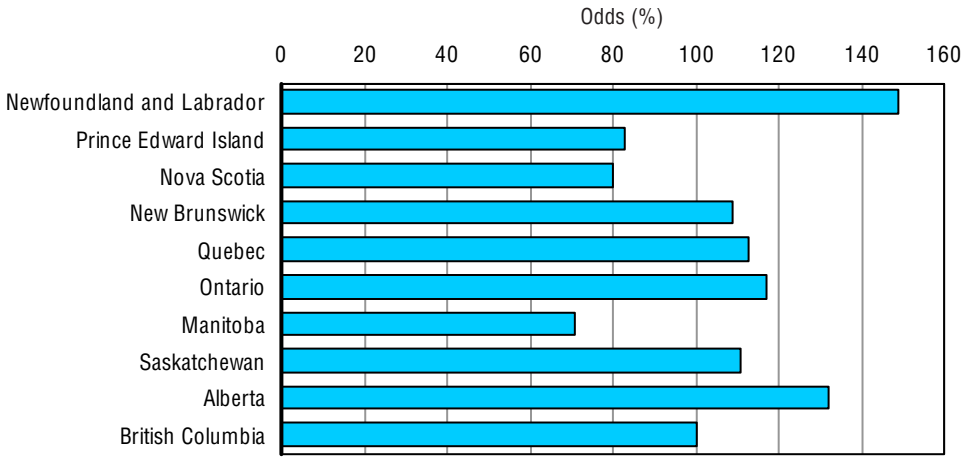
Source: 2003 IALSS and 2005 to 2009 SLID.

Province

Skill upgrading aimed at adults currently living in Newfoundland and Labrador and Alberta yield the most rapid SA savings.

Newfoundland and Labrador (149%) and Alberta (132%) display higher likelihoods of Social Assistance benefit receipt. Manitoba (71%), Prince Edward Island (83%) and Nova Scotia (80%) residents have particularly low likelihoods of receiving SA benefits. The figure suggests that skill upgrading should be directed at adults currently living in Newfoundland and Labrador and Alberta yield the most rapid SA savings.

Figure 3.3e Impact of province of residence on odds of Social Assistance Benefit receipt, adults aged 16 and over, Canada, 2003



Source: 2003 IALSS and 2005 to 2009 SLID.

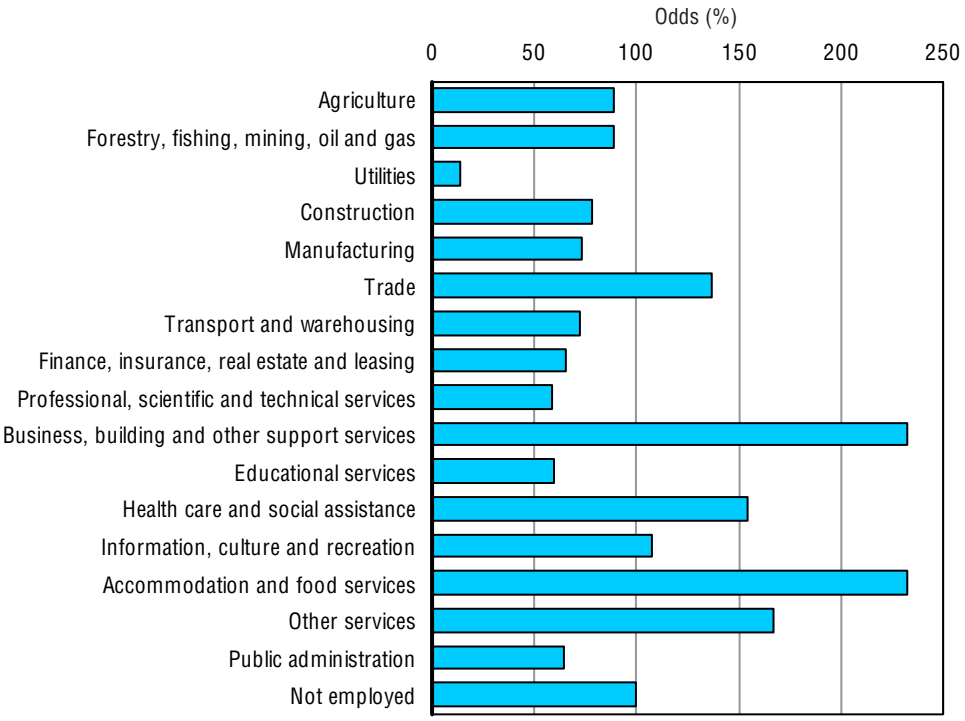
Industry

Skill upgrading in Business, building and other support (371%) and Accommodation and Food Services (396%) would yield the most SA savings.

Two industries display relatively low likelihoods of having received Social Assistance benefits: Utilities (0%) and Public administration (60%).

Two industries display relatively high likelihoods of having received Social Assistance benefits: Business, building and other support (371%) and Accommodation and Food Services (396%). Investing in these industries would yield the most SA savings.

Figure 3.3f Impact of industry on odds of Social Assistance benefit receipt, adults aged 16 and over, Canada, 2003



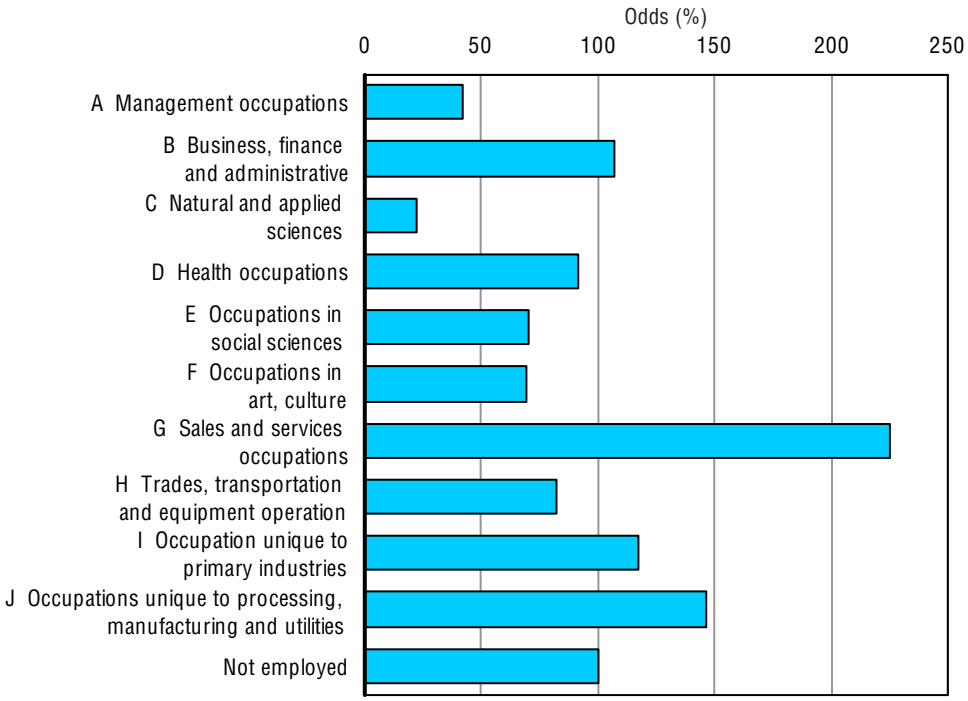
Source: 2003 IALSS and 2005 to 2009 SLID.

Occupation

One occupation displays higher likelihoods of Social Assistance benefit receipt: Sales and service occupations: (225%). Investing in these occupations would yield the most rapid SA savings.

Skill upgrading in Sales and service occupations: (225%) would yield the most rapid SA savings

Figure 3.3g Impact of occupation on the odds of Social Assistance benefit receipt, adults aged 16 and over, Canada, 2003



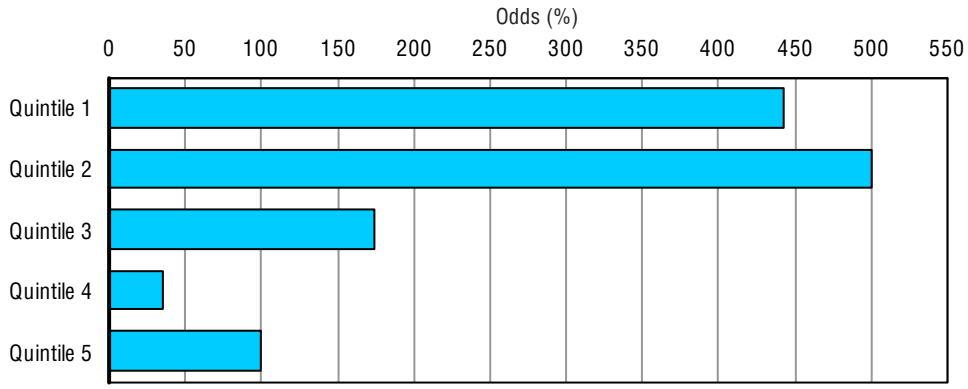
Source: 2003 IALSS and 2005 to 2009 SLID.

Income

Skill upgrading of the two lowest income quintiles would yield the largest savings.

Adults in the 1st and 2nd income quintiles are 442% and 500% more likely to have received Social Assistance benefits.

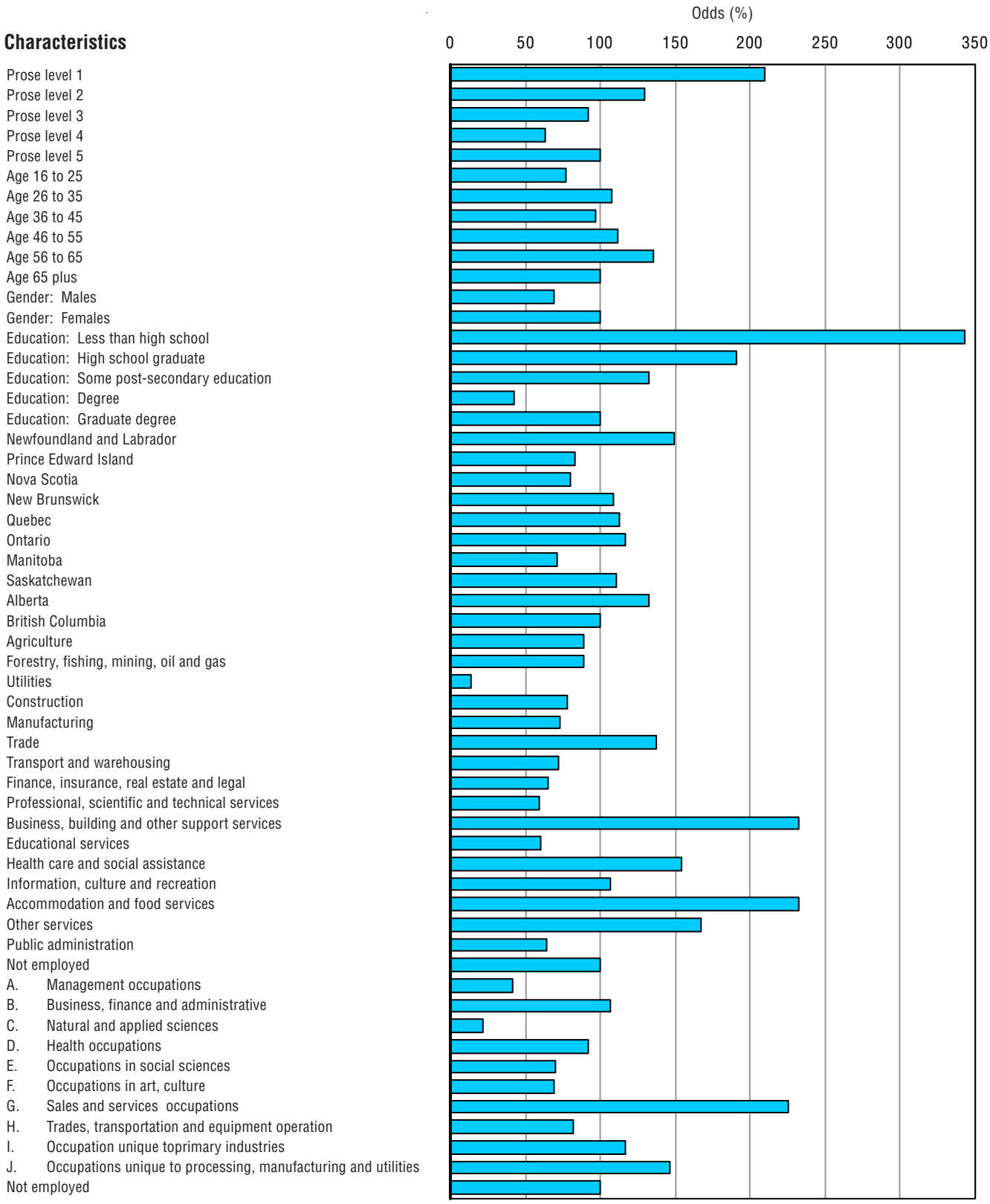
Figure 3.3h Impact of income on the odds of Social Assistance benefit receipt, adults aged 16 and over, Canada, 2003



Note: Quintiles divide the population into groups, with each representing 20% of the population.
Source: 2003 IALSS and 2005 to 2009 SLID.

Figure 3.3i provides odds of having received Social Assistance benefits that have been adjusted to remove the effect of differences in the composition of each group.

Figure 3.3i Adjusted likelihoods of Social Assistance benefit receipt, adults aged 16 and over, Canada, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

The following groups have over double the likelihoods of having received regular EI benefits after adjustment:

Adults aged 65 and over

Adults living in Manitoba

Adults working in the Manufacturing and Transport and Warehousing industries

Adults working in Health, Art and Culture and Sales and Service occupations

The analysis reveals that significant differences in benefit receipt even after adjustment for differences in a large number of background characteristics. The following groups have over double the likelihoods of having received regular EI benefits:

- Adults aged 65 and over,
- Adults living in Manitoba,
- Adults working in the Manufacturing and Transport and Warehousing industries,
- Adults working in Health, Art and Culture and Sales and Service occupations.

Workers Compensation

The third series of charts provide estimates of average likelihoods of different groups of adults having received Workers Compensation benefits in the course of a year. The first chart in the series reveals an interesting pattern of results.

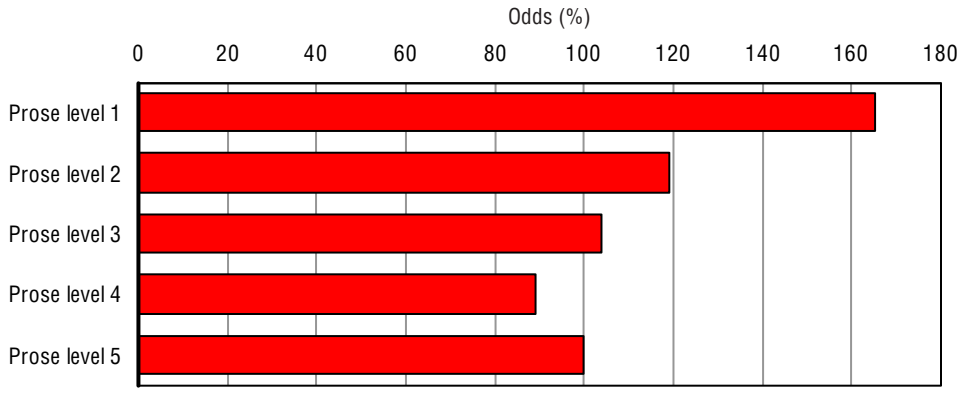
Prose literacy level

Adults at prose level 1 are 155% more likely, and Level 2 adults 135% more likely, than the other literacy levels to receive Workers Compensation benefits, a finding that suggests that skill upgrading directed at adults currently at prose levels1 and 2 would yield the largest Workers Compensations savings.

Adults at prose level 1 are 155% more likely, and Level 2 adults 135% more likely, than the other literacy levels to receive Workers Compensation benefits.

The figure suggests that skill upgrading directed at adults currently at prose levels1 and 2 would yield the largest Workers Compensations savings.

Figure 3.4a Impact of prose literacy level on the odds of being in receipt of workers compensation benefits, adults aged 16 and over, Canada, 2003



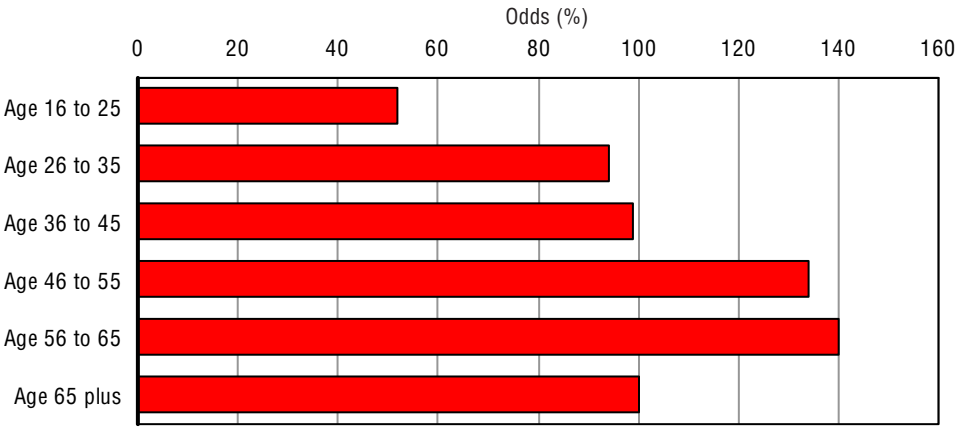
Source: 2003 IALSS and 2005 to 2009 SLID.

Age

Adults aged 16 to 25 have the lowest likelihood of receiving Workers Compensation benefits. Only adults aged 46 to 55 and 56 to 65 have elevated likelihoods of Workers Compensation benefit receipt.The figure suggests that skill upgrading directed at adults aged 46 to 64 would yield the most rapid Workers Compensation savings.

Skill upgrading directed at adults aged 46 to 64 would yield the most rapid Workers Compensation savings.

Figure 3.4b Impact of age on the odds of being in receipt of Workers Compensation benefits, adults aged 16 and over, Canada, 2003



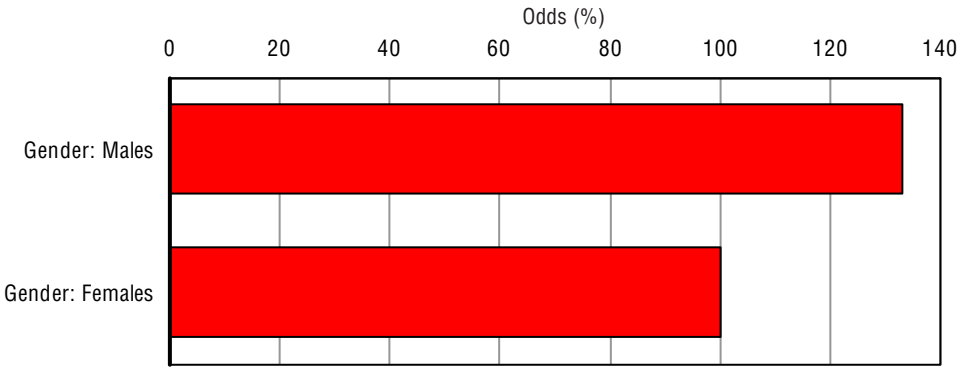
Source: 2003 IALSS and 2005 to 2009 SLID.

Gender

Men are 33% more likely than women to have received Workers Compensation benefits.

Skill upgrading directed at men would yield the largest Workers Compensation savings

Figure 3.4c Impact of gender on odds of being in receipt of Workers Compensation, adults age 16 and over, Canada, 2003



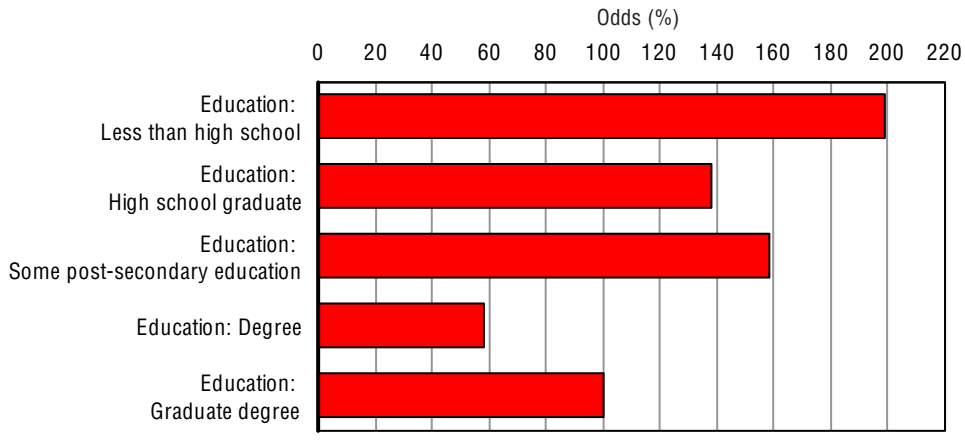
Source: 2003 IALSS and 2005 to 2009 SLID.

Education level

Skill upgrading directed at adults with some post-secondary education or less would yield the most rapid Workers Compensation savings.

The likelihood of having received Workers Compensation benefits rises with rising education below the degree level. The figure suggests that skill upgrading directed at adults with some post-secondary education or less would yield the most rapid Workers Compensation savings.

Figure 3.4d impact of education on odds of being in receipt of Workers Compensation, adults age 16 and over, Canada, 2003



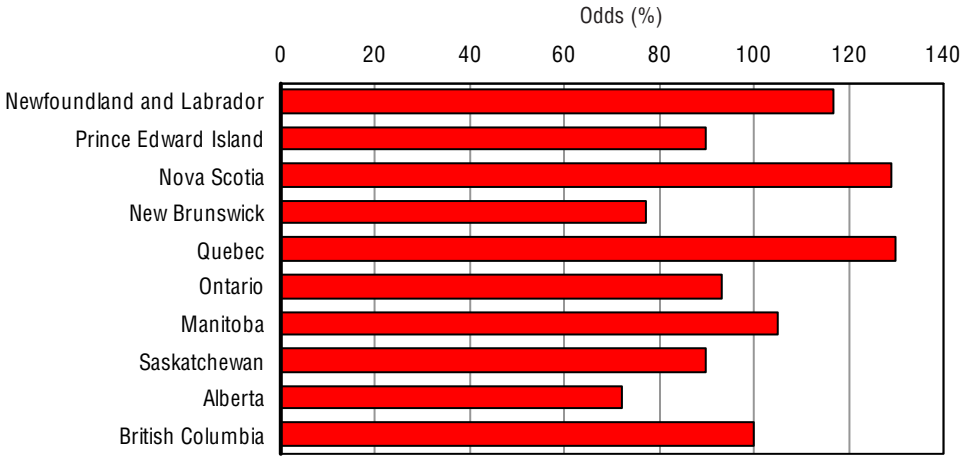
Source: 2003 IALSS and 2005 to 2009 SLID.

Province

Skill upgrading directed at adults currently living in Newfoundland and Labrador, Nova Scotia and Quebec would yield the most rapid Workers Compensation savings.

Newfoundland and Labrador (117%), Nova Scotia (129%) and Quebec (130%) display higher likelihoods of Workers Compensation benefit receipt. Alberta (72%) and New Brunswick (77%) residents have particularly low likelihoods of receiving Workers Compensation benefits. The figure suggests that skill upgrading should be directed at adults currently living in Newfoundland and Labrador, Nova Scotia and Quebec to yield the most rapid Workers Compensation savings.

Figure 3.4e Impact of province of residence on the odds of being in receipt of Workers Compensation, adults aged 16 and over, Canada, 2003



Source: 2003 IALSS and 2005 to 2009 SLID.

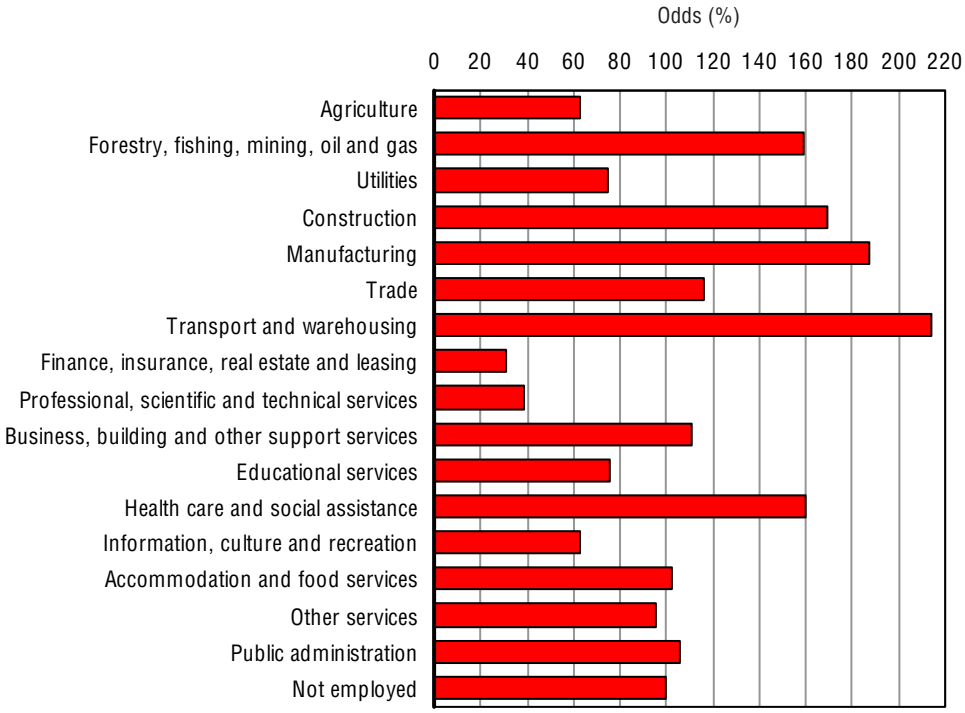
Industry

Three industries display relatively low likelihoods of having received Workers Compensation: Information, Culture and Recreation (41%), Professional, Scientific and Technical Services (46%) and Finance, Insurance, Real Estate and Legal Services (40%).

Two industries display relatively high likelihoods of having received Workers Compensation benefits: Transportation and Warehousing (194%) and Manufacturing (182%). Investing in these industries would yield the most Workers Compensation savings.

Skill upgrading in Transportation and Warehousing (194%) and Manufacturing (182%) industries would yield the most Workers Compensation savings.

Figure 3.4f **Impact of industry on the odds of being in receipt of Workers Compensation, adults aged 16 and over, Canada, 2003**



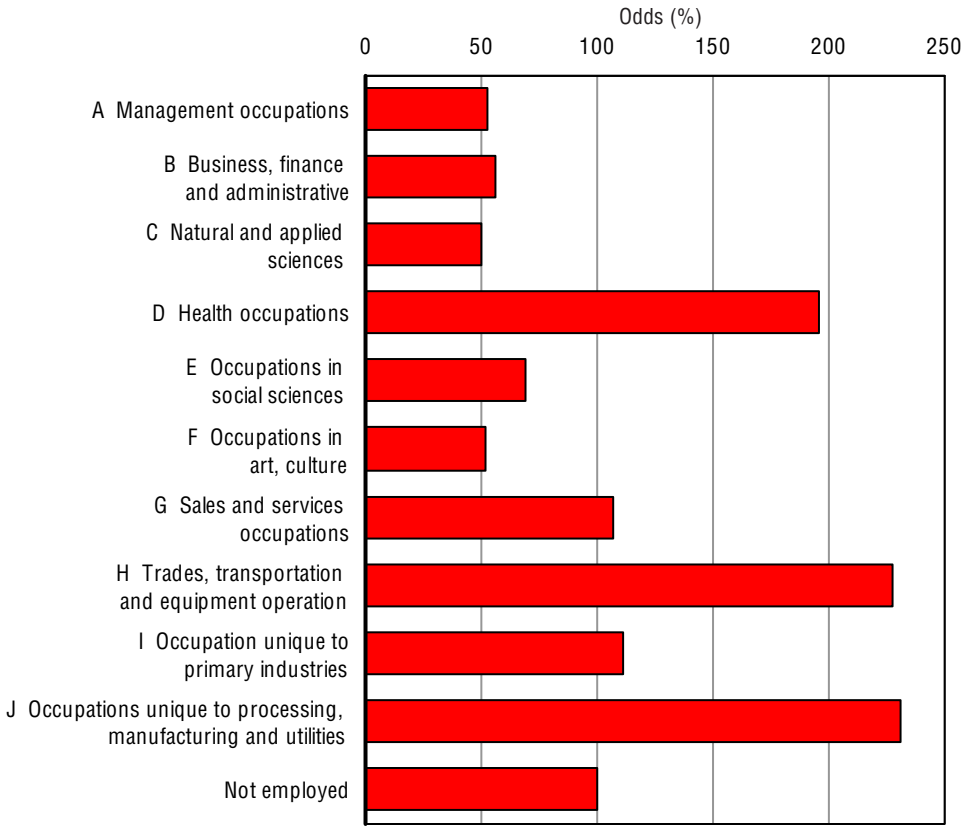
Source: 2003 IALSS and 2005 to 2009 SLID.

Occupation

Skill upgrading in Occupations unique to processing, Manufacturing and Utilities (231%), Trades, Transportation and Equipment (228%) and Health occupations (196%) would yield the most rapid Workers Compensation savings.

Three occupations display higher likelihoods of Workers Compensation benefit receipt: Occupations unique to processing, Manufacturing and Utilities (231%), Trades, Transportation and Equipment (228%) and Health occupations (196%). Investing in these occupations would yield the most rapid Workers Compensation savings.

Figure 3.4g Impact of occupation on odds of being in receipt of Workers Compensation, adults aged 16 and over, Canada, 2006

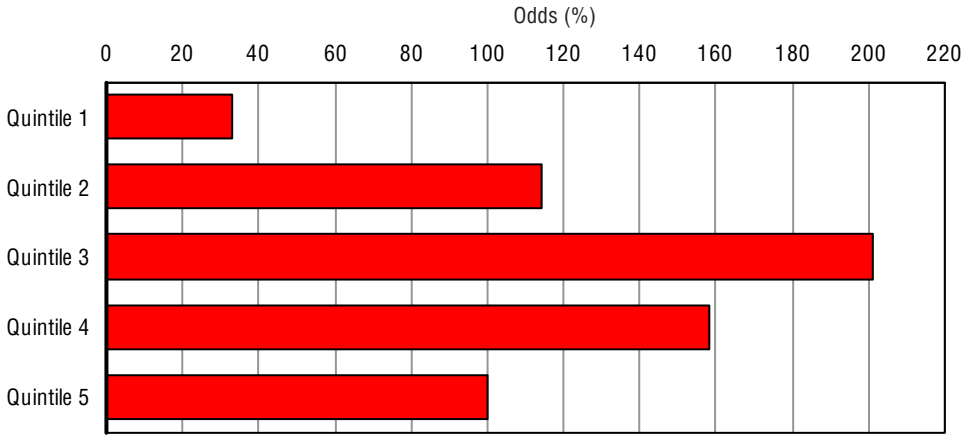


Source: 2003 IALSS and 2005 to 2009 SLID.

Income

Adults in the 3rd and 4th income quintiles are 201% and 158% more likely to have received Workers Compensation benefits.

Figure 3.4h Impact of income on odds of being in receipt of Workers Compensation, adults aged 16 and over, Canada, 2003



Note: Quintiles divide the population into groups, with each representing 20% of the population.
Source: 2003 IALSS and 2005 to 2009 SLID.

Figure 3.4i provides odds of having received Workers Compensation benefits that have been adjusted to remove the effect of differences in the composition of each group.

The following groups have over double the likelihoods of having received Workers Compensation benefits:

Adults in income quintile 3

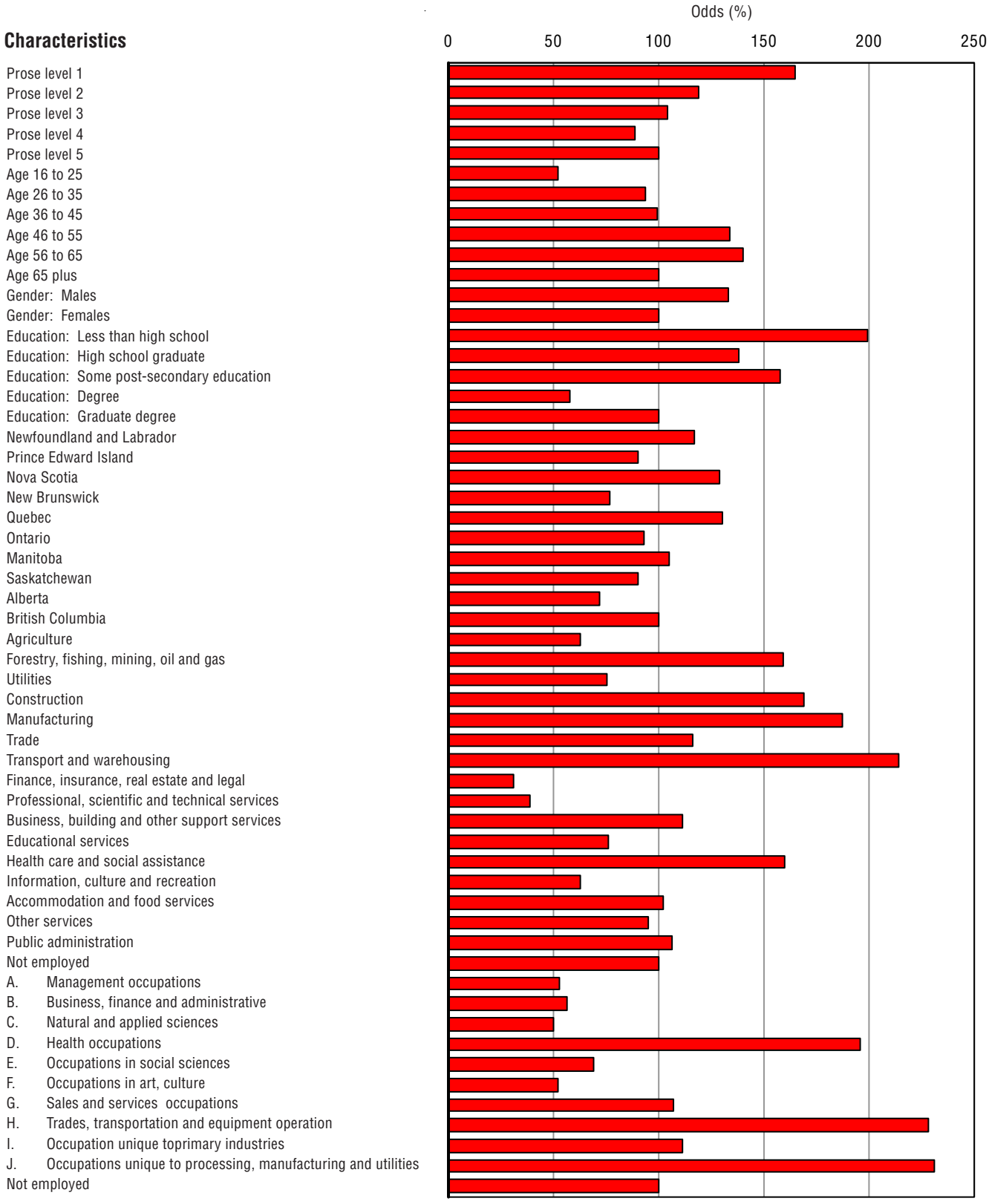
Adults with less than a high school education

The analysis reveals that significant differences in benefit receipt even after adjustment for differences in a large number of background characteristics.

The analysis presented in this chapter confirms two important facts, including that:

> A strong relationship between literacy skill and benefit receipt exists even after adjustment for differences in underlying characteristics of adults at each literacy level, a necessary condition to our hypothesis that an investment in literacy skill would precipitate large savings.
>
> The fact that differences in benefit receipt rates exist even after adjustment for differences in underlying characteristics of adults at each literacy level suggests that the loss of income support will have a larger impact on specific demographic groups.

Figure 3.4i Adjusted likelihoods of Workers Compensation benefit receipt, adults aged 16 and over, Canada, 2005 to 2009



Source: 2003 IALSS and 2005 to 2009 SLID.

Chapter 4 The Potential Costs and Income Support Benefits Associated with a Literacy Investment

Having established in Chapter 2 that expenditures on Employment Insurance, Social Assistance and Workers Compensation consume significant resources, and in Chapter 3 that literacy skill and benefit receipt are related, this chapter explores whether the data provide an economic rationale for a literacy investment.

Having established that expenditures on Employment Insurance, Social Assistance and Workers Compensation consume significant resources, and in that literacy skill and benefit receipt are related, this chapter explores whether the data provide an economic rationale for a literacy investment.

The methodology to derive the estimates of cost, benefit and savings of raising all adults with Level 1 and 2 prose literacy to Level 3, are detailed in the appendix and parallel that developed and applied in previous research (see Appendix C for details of the methodology).

The cost of raising adults to Level 3 through "best practice" instruction were derived by estimating the direct and indirect costs of instruction. These costs were then compared to estimated benefits resulting in estimated savings. There are several important caveats related to the estimation of costs, benefits and savings as outlined below. Of import to readers is that fact that the approach provides reliable estimates of average costs, benefits and implied rates of return on investment, overall and for key sub-populations

The cost of raising adults to Level 3 through "best practice" instruction were derived by estimating the direct and indirect costs of instruction. These costs were then compared to estimated benefits resulting in estimated savings.

Direct instructional costs

First, the direct costs of instruction were estimated by multiplying the estimated average number of hours needed to raise learners to the next level by the estimate of the number of learners in the respective group.

The model assumed a standard rate of pay for instructors of $35 per hour, the prevailing rate for the Foundations Program delivered by Douglas College. Readers should not take this as an endorsement of a college-based solution to Canada's literacy problems. The fact that this rate is considerably higher than many literacy instructors are currently

paid means that the cost estimates presented in the report are on the high side, with the result that the estimated rates of return to literacy investments are conservative. At a minimum the rates used are high enough to attract and retain instructors of the requisite quality.

Indirect instructional costs

Second, the indirect costs of supporting instruction are estimated. Separate estimates are derived for:

- Recruitment costs
- Diagnostic costs
- Retention costs
- Certification costs
- Facilities costs
- Participant supplies
- Other infrastructure costs

Recruitment costs are those costs associated with securing participation in programs. Recruitment costs include marketing, outreach and basic program intake operations.

Diagnostic costs are those costs incurred in undertaking formative assessment to establish learning goals, learner needs and to establish baseline skill levels.

Retention costs represent those costs that are incurred to provide sufficient learner support to ensure retention to completion. These include funding to support personal contact throughout the program and for incidental expenses such as daycare, transportation, etc.

Certification costs are costs incurred at program exit to establish, through comparison to initial skill level, learning gain.

Facilities costs include things such as classroom rentals.

Participant supplies include instructional resources such as paper, pens, workbooks, etc.

Other infrastructure costs include institutional overheads.

As for the direct costs of instruction, indirect costs are estimated as averages that are judged to be sufficient overall. Clearly, the average costs mask considerable variation in what it would cost to offer programs in specific communities.

Direct and indirect costs are then converted to a per point basis. Aggregate cost estimates were then derived for each type of learners by multiplying the average number of points to the desired proficiency level by the per point unit costs for each segment type of learners.

Caveats related to the cost analysis

As outlined below the cost estimates presented in this report exclude several elements of cost that one would ideally want to include but were beyond the remit of the current project to estimate. In the initial analyses upon which the current work builds no effort was made to estimate the cost of training the instructors that would be needed to deliver the programs. It was assumed that these costs could be absorbed in the current post-secondary education budgets. The current analysis also excludes these costs – an exclusion that causes rates of return to be systematically over-estimated. Similarly, no estimates have been provided for the cost of developing and administering a system of instructor certification, nor for providing the general system supports such as the development of more efficient and effective curricula and delivery systems. Implicitly this assumes that current federal and provincial budgets are judged to be sufficient for these purposes – again an exclusion that causes rates of return to be systematically over-estimated.

It should also be noted that these costs also exclude the cost of any related language training. The International Survey of Reading Skills (ISRS) study allows one to classify respondents into one of six groups based upon their assessed oral language proficiency. Average oral language proficiency scores for English segments C and D, and for French segments C, D and B1, fell in the highest two levels. Average scores for the other segments were considerably lower, suggesting a need for language training. The failure to include language training costs causes rates of return to be systematically over-estimated.

It would be important in future analyses to include these costs.

Estimating benefits

The second part of the analysis involved estimating the likely benefits that would accrue to a literacy investment that was large enough to move adults to prose literacy Level 3. Benefits estimates were derived in two stages as out lined below.

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Estimated increases in annual earnings

Research shows that each additional point of literacy skill is associated with an increase of $155 in additional earnings over the course of a year. Surprisingly, the available evidence suggests that this impact is constant over the entire wage distribution.

Analysis by the authors suggests that the gain of an additional point of literacy skill is associated with an increase of $155 in additional earnings over the course of a year. Surprisingly, the available evidence suggests that this impact is constant over the entire wage distribution. It would seem that everyone earns more as a result of having higher literacy skill but low skilled adults reap a much higher return in relative terms. This is an important finding as it suggests that literacy is a fundamental determinant of productivity rather than something that just happens to be correlated with some other, unobserved characteristic.

Caveats related to the wage analysis

The wage analysis provides estimates of annual increases in earnings that would be precipitated by an increase in literacy skill. For this to be true the economy would have to take up all of the newly created skill and put it to good use. This assumes that the level of aggregate labour demand is sufficient, a reasonable conclusion given that Canada is entering a period of prolonged labour shortage. It also assumes that employers will adjust their work practices and processes to take full advantage of the additional skill. This assumes that employers are aware of the impact that literacy skill shortages are having on their productivity, a less tenable assumption given that there is considerable evidence of failure in markets for Essential Skills upgrading and, more generally, in the Canadian training market. It also assumes that employers will pass along the same proportion of productivity benefits accruing to literacy as they have in the past. This assumption might not hold as intense pressure from foreign competitors induces employers choose to retain more earnings for their shareholders or to reinvest them in other inputs.

Estimated savings in benefit payments

The third step in the analysis involved the derivation of estimates of savings in EI, Social Assistance and Workers benefit payments that would accrue to a literacy investment of the proposed scale and focus. A regression analysis was conducted that revealed the reduction in benefit payments that was associated with an additional point of literacy for each program. These reductions were then multiplied by the estimates of the number of points needed to lift each adult to the lower threshold of prose literacy level 3 to yield an estimate of the aggregate program savings.

The third step in the analysis involved the derivation of estimates of savings in EI, Social Assistance and Workers benefit payments that would accrue to a literacy investment of the proposed scale and focus. A regression analysis was conducted that revealed the reduction in benefit payments that was associated with an additional point of literacy for each program. These reductions were then multiplied by the estimates of the number of points needed to lift each adult to the lower threshold of prose literacy level 3 to yield an estimate of the aggregate program savings.

Caveats related to the income support savings analysis

The sole caveat associated with the analysis of potential program savings is that it rests on the strong assumption that the increased literacy skill will be taken up and put to good use by the economy. More fundamentally, for this to be true the economic returns to skill – the impacts on the incidence of employment, weeks worked, wage rates, skill maintenance and income – remain stable over the coming 5 years. This seems a reasonable assumption in the absence of evidence to the contrary.

Table 4.1 summarizes estimated skill upgrading costs and wage and program benefits by age group, education, gender, industry and occupation. Table 4.1 (See Appendix B).

The table comparing costs, benefits and reveals the following interesting estimates:

Costs

- The total cost of literacy upgrading is $29 billion.
- $13 billion of the estimated instructional costs pertain to adults aged 65 and over.
- $17.4 billion of the $29 billion instructional cost would be directed to adults with less than a high school education.
- Women and men would require roughly the same size of instructional investment
- Manufacturing would require the largest instructional investment for employed workers: $500 million
- Sales and service occupations would require the largest instructional investment : $2.3 billion.

Benefits

- Annual earnings are estimated to increase by $83.7 billion.
- Regular Employment Insurance benefit payments could drop by $330 million per year.
- Social Assistance payments could drop by $2.1 billion per year.
- Workers compensation payments could drop by $487 million per year.
- Annual earnings increases and program savings could total $86.8 billion, an amount that does not take into account increases in tax revenues that could be assumed to flow from higher incomes.

The final step in the cost/benefit analysis involves the calculation of estimated rates of return on investment.

Estimated rates of return on investment

The final step in the cost/benefit analysis involves the calculation of estimated rates of return on investment.

Estimates of rates of return were derived in two ways.

A first set of estimates were derived by dividing the estimated cost of raising all adults to prose literacy Level 3 by the sum of earnings and program savings over a 5 year period. These estimates were based on several simplifying assumptions including that:

A first set of estimates were derived by dividing the estimated cost of raising all adults to prose literacy Level 3 by the sum of earnings and program savings over a 5 year period.

- The costs of skill upgrading are all made in one year
- The educational system is capable of supporting the required level of instruction
- The required assessment systems and curricula are available
- The cost of capital has been ignored
- The labour market is able to absorb and put to use the newly created skill immediately
- The estimated benefits were restricted to the projected increases in earnings expected as a result of improved productivity and the savings in income support payments. The benefits estimates do not, therefore, include the value of other benefits, such as reductions in health costs, improvements in social cohesion and engagement, etc.

A second set of ROI estimates were derived by dividing the estimated cost of raising all adults to prose literacy Level 3 by 33% of the sum of earnings plus total program savings over a 5 year period. These latter fiscal rates of return approximate the rate of return that would be earned were government to finance the skill investment from program savings and additional tax revenue.

The second set of ROI estimates were derived by dividing the estimated cost of raising all adults to prose literacy Level 3 by 33% of the sum of earnings plus total program savings over a 5 year period. These latter fiscal rates of return approximate the rate of return that would be earned were government to finance the skill investment from program savings and additional tax revenue.

Caveats related to the rates of return analysis

Several caveats apply to the rate of return analysis. First, the analysis assumes that the literacy skill upgrading of the requisite quality can be delivered in a single year. A more reasonable assumption would see this investment being made over several years, a option that would defer some of the benefits beyond the five year window. Second, the estimates ignore the costs of capital needed to make the investment. Because interest rates are so low this assumption causes rates of return to be very slightly over-estimated. The third key assumption is that benefits will accrue over a 5 year period. Analyses of this type would conventionally

accrue benefits over a 10 year period. Thus, the estimated benefits are very conservative, with the result that estimated rates of return are likely significantly under-estimated. A final pair of caveats:

- The estimated benefits exclude increased tax revenue that would accrue to provincial and federal governments as a result of higher incomes. These additional tax revenues could be used to offset the costs of providing the instruction.
- The estimated benefits exclude expected savings in health expenditures.

Including the expected additional tax revenues and reduced health care expenditures would drive up the estimated rates of return on investment.

Table 4.3 (see Appendix B) summarizes the estimated costs, benefits and associated rates of return on investment.

The table reveals the following:

- The proposed investments would yield an estimated staggering rate of return of 1,396%.

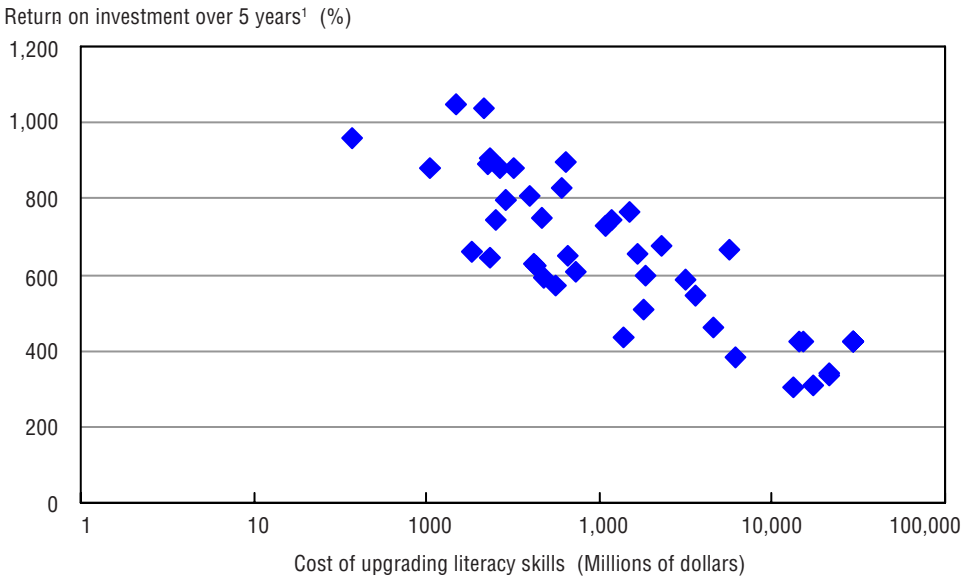
Rates of return would likely vary significantly across sub-groups of the population:

- The estimated rate of return would be highest for those aged 25 to 34: 2,275%.
- Investments in the Professional, Scientific and Technical Services industry would yield the highest returns: 3173%.
- Investments in social science and education occupations would yield the highest returns: 3,166%.

Fiscal rates of return vary slightly by province, from a low of 391% in New Brunswick to a high of 495% in Alberta.

The figure above (Figure 4.1), which plots the relationship between estimated fiscal rates of return and the cost of upgrading at the national level, reveals a strong negative correlation between the cost of upgrading and rates of return i.e. the larger the investment the smaller the fiscal rate of return. This finding is important as it suggests particular areas where government incentives to workers and employers might yield impressive results.

Figure 4.1 Return on investment for Canada by cost of upgrading literacy, selected groups



1 Return includes 33% of earnings.

Source: 2003 IALSS and 2005 to 2009 SLID.

The following table (4.2) identifies the population subgroups that would yield the highest yields at the national level.

Table 4.3, in Appendix B, summarizes the same cost/benefit/ROI information by province. The table reveals that fiscal rates of return vary slightly by province, from a low of 391% in New Brunswick to a high of 495% in Alberta.

A series of provincial summaries have been prepared that present estimates of costs, benefits and rates of return for selected groups by province.

Table 4.2 Costs and rates of return in the top two quartiles, selected groups of adults aged 16 and over, Canada, 2005 to 2009 sum of return on Investment over 5 years[1]

Cost order of magnitude	Cost		Return on investment	
			Quartile 1	Quartile 2
Millions of dollars	Millions of dollars	Lable	Percent	
10 to 99	40	Utilities	961	n/a
	100	Occupations in art, culture, recreation and sport	880	n/a
	150	Natural and applied science	1,047	n/a
	180	Forestry, fishing, mining, oil and gas	n/a	663
	210	Occupation in social science, education, government and related occupation	1,037	n/a
	230	Public administration	890	n/a
	230	Professional, science and technical services	904	n/a
	250	Information, culture and recreation	n/a	742
100 to 999	270	Educational services	881	n/a
	290	Finance, insurance, real estate and leasing	n/a	796
	320	Health occupation	883	n/a
	400	Management occupation	809	n/a
	470	Graduate degree	n/a	749
	610	Health care and social assistance	827	n/a
	640	Business, finance and administrative occupation	894	n/a
	660	Accommodation and food services	n/a	649
	1,080	Bachelors degree	n/a	726
	1,180	Trade	n/a	743
	1,520	25 to 34	n/a	764
1,000 to 9,999	1,670	16 to 24	n/a	653
	2,290	Sales and services occupation	n/a	676
	5,670	Some post-secondary education	n/a	667

1 Return includes 33% of earnings.

Source: 2003 IALSS and 2005 to 2009 SLID.

Chapter 5 Summary and Conclusions

This chapter summarizes the study's objectives, methods, findings and implications for policy.

Motivation for the current analysis

The EI, Workers Compensation and Social Assistance programs are key elements in Canada's social safety net for working-age adults. EI provides replacement income and, over the last decade, increasing expenditures on "active measures" that include the funding of training that is meant to improve the employability of EI recipients. Workers Compensation provides replacement income to workers who suffer workplace-related illness or accident. Social Assistance is meant to provide a base level of income for individuals or families who do not have enough employment to fund the minimally accepted standard of living.

The EI, Workers Compensation and Social Assistance programs are key elements in Canada's social safety net for working-age adults.

While both the EI and Workers Compensation systems serve the useful social goal of stabilizing income, both programs have been heavily criticized as being economically inefficient. Among other things, EI premiums have been cited as the reason some employers are reluctant to hire additional employees. Some analyses have suggested EI reduces workers incentives to find and keep a job and others have shown it might reduce the mobility of labour by reducing incentives to move to become re-employed more rapidly. Some have suggested that Workers Compensation reduces incentives for employers to improve health and safety in the workplace. Similarly, Social Assistance programs which are meant to ensure a minimum quality of life, have been criticized for reducing incentives to work and of treating the symptom of the "problem" - a lack of income - rather than its underlying causes, including a lack of marketable skills. This report did not aim to address any of these questions which remain open to debate and consideration about the merits of the programs and whether they are economically useful; instead this report aimed to identify whether savings in the EI,

This report identifies whether savings in the EI, WC and SA systems might be possible by increasing the employability of individuals through an increase in their literacy and essential skills skill-set.

WC and SA systems might be possible by increasing the employability of individuals through an increase in their literacy and essential skills skill-set.

The findings presented in this report are based on a statistical linkage of like respondents in Statistics Canada's Surveys of Labour and Income Dynamics (SLID) and the International Adult Literacy and Skills Survey. Although such linkages can not reproduce the full covariance structure between literacy skill and benefit receipt the approach does provide reliable estimates of average relationships, overall and for key population subgroups within each province.

Our analysis provides significant support for the basic hypothesis that motivates this report: that substantial economic benefits could be realized were investments made to increase the literacy skills of Canadian adults.

The analysis suggests that substantial economic benefits could be realized were investments made to increase the literacy skills of Canadian adults.

This report attempted answer the following series of linked research questions:

- How do rates of EI, WC and SA benefit receipt vary by literacy skill?
- How do weekly EI, WC and SA benefit rates vary by literacy skill level?
- How does the amount of EI, WC and benefits received vary by literacy skill?
- How do EI, WC and SA benefit receipt rates vary by skill level by province?
- To what extent can observed differences in EI, WC and SA benefit rates be explained by underlying differences in the characteristics of adults at each literacy skill level? Do policy-significant differences in benefit rates exist after these differences have been adjusted for?
- What types of instruction would be required to raise literacy skill levels enough to yield meaningful reductions in benefit rates? What would such a skill investment cost?
- What direct and indirect economic benefits might accrue were such a skill investment to be made? What are the implied rates of return on investment?

Key findings

Overall, our analysis revealed that efforts to increase literacy and essential skills could provide significant reductions in Canadian's reliance on income support from the EI, Workers Comp and SA systems. This would free up significant fiscal resources for governments.

Current expenditures

The federal and provincial governments spend an average of $4.16 Billion per annum on Employment Insurance maternity benefits, an average of $12.391 Billion per annum on Regular Employment Insurance benefits, an average of $9.508 Billion per annum on Social Assistance benefits and and an average of $5.892 billion per annum on Worker's Compensation benefits. Thus, even a weak causal relationship between literacy skill and the probability of benefit receipt would yield significant savings.

Costs – based on raising individuals at literacy levels 1 and 2 to the minimum standard of level 3

Raising all adults to prose literacy level 3 would require a one time investment of $29 billion, a significant amount by any standard.

$13 billion of the estimated instructional costs pertain to adults aged 65 and over.

$17.4 billion of the $29 billion instructional cost would be directed to adults with less than a high school education.

Women and men would require roughly the same size of instructional investment.

The Manufacturing industry would require the largest instructional investment at $500 million whereas the largest instructional investment for individuals in a particular occupation would be for people in sales and service occupations at a cost of $2.3 billion.

Benefits

Under reasonable assumptions it is expected that the proposed instructional investment would precipitate a rapid increase in labour productivity, enough to increase annual earnings by as much as $83.9 billion per annum potentially in each and every year following the skill upgrade until the point of retirement.

Regular Employment Insurance benefit payments could drop by as much as $330 million per year.

The federal and provincial governments spend an average of $4.16 Billion per annum on Employment Insurance maternity benefits, an average of $ 12.391 Billion per annum on Regular Employment Insurance benefits, an average of $9.508 Billion per annum on Social Assistance benefits and and an average of $5.892 billion per annum on Worker's Compensation benefits. Thus, even a weak causal relationship between literacy skill and the probability of benefit receipt would yield significant savings.

Social Assistance payments could drop by as much as $2.1 billion per year.

Workers compensation payments could drop by as much as $487 million per year.

Annual earnings increases and program savings total $86.8 billion (this does not include expected increases in tax revenue that would flow from higher incomes.)

Rates of return on investment

The proposed investment would yield a staggering rate of return of 1,496% even if the earnings benefits only last for 5 years.

The estimated rate of return would be highest for those aged 25 to 34: 2,355%.

Investments in the health care and social assistance industry would yield the highest returns: 4,007%.

Investments in natural and applied science occupations would yield the highest returns: 4,804%.

A conservative estimate of rates of return that would include only 33% of the increased earnings in the computation of rates of return (as an approximation of the increased tax revenue that would be generated) suggest that the fiscal rate of return still averages an impressive 495%.

Implications and conclusions

The OECD believes that Level 3 is the minimum skill level needed for workers to compete in the global knowledge economy. While the costs to ensure all Canadians achieve this level as a minimum are high, the potential returns on investment are similarly high.

The OECD believes that Level 3 is the minimum skill level needed for workers to compete in the global knowledge economy. While the costs to ensure all Canadians achieve this level as a minimum are high, the potential returns on investment are similarly high. While we await the results of the 3rd international survey in 2013, IALSS indicates that 43% of Canadians fall below Level 3 and there is little evidence that that is expected to have changed significantly.

While the methods used to generate the results presented in this report cannot provide definitive proof that an investment in raising adult literacy skills to Level 3 would yield positive returns, the indicative results suggest that returns on investment would be staggeringly high even under a very conservative set of assumptions.

While the methods used to generate the results presented in this report cannot provide definitive proof that an investment in raising adult literacy skills to Level 3 would yield positive returns, the indicative results suggest that returns on investment would be staggeringly high even under a very conservative set of assumptions. Even if rates of return are half of those estimated governments would stand to reap impressive returns through higher taxes and lower income support payments.

In addition to the fiscal returns on investment, proposed investments in literacy and essential skills would also trigger significant reductions in the current level of social inequality over a range of valued outcomes:

employment, income, health and social engagement. While it is difficult to put an economic value on these benefits, they undoubtedly have value to both the individuals themselves and, to society as a whole.

Governments and education and training institutions should be putting into place systems that identify students at all ages who are failing to acquire literacy skills at the expected rate and have be able to respond to ensure those individuals are receiving both the content and skills education and training they need to succeed in the long-term.

This research makes the case for integrating literacy and essential skills training and assessment throughout all levels of initial education and at the end of tertiary schooling or training. Regular and on-going assessments of literacy and the essential skills would ensure that more Canadians will be able to take full advantage of their educational opportunities. It will mean Canadians will be more likely to complete their studies and/or training, be ready to enter the workforce and have the foundational skills that are necessary to meet the challenges of our rapidly changing labour markets through life-long learning.

The results also make the case for the assessment and instruction of large numbers of low skilled adult workers as a short term priority simply because the size of youth cohorts is too small to have a material impact on skill supply over the medium term.

The changes in the global economy set out in the introduction will amplify these effects. Falling employment rates, falling incomes and rapid increases in wage inequality – all undesirable outcomes – are serious risks if we do not find ways to address the low literacy of so many Canadians.

There are many public and private actors currently engaged in discussions on reducing Canada's skilled labour shortage; our analysis suggests that increasing the skill levels of those on EI, Workers Compensation and Social Assistance could help increase the pool of available skilled workers. Investing in research to confirm the literacy skill investments ROI that we have estimated through this analysis, would allow governments and businesses to examine real cost-benefits.

In his speech earlier this year to the World Economic Forum at Davos, Prime Minister Stephen Harper committed Canada to "...make the transformations necessary to sustain economic growth, job creation and prosperity now and for the next generation." The advanced skills of tomorrow have to be built today on a strong foundation of literacy and essential skills. Ironically, it would seem that investment in these skills offer the possibility of remarkable returns.

In addition to the fiscal returns on investment, proposed investments in literacy and essential skills would also trigger significant reductions in the current level of social inequality over a range of valued outcomes: employment, income, health and social engagement. While it is difficult to put an economic value on these benefits, they undoubtedly have value to both the individuals themselves and, to society as a whole.

This research makes the case for integrating literacy and essential skills training and assessment throughout all levels of education and at the end of tertiary schooling or training. Regular and on-going assessments of literacy and the essential skills would ensure that more Canadians will be able to take full advantage of their educational opportunities.

The results also make the case for the assessment and instruction of large numbers of low skilled adult workers as a short term priority simply because the size of youth cohorts is too small to have a material impact on skill supply over the medium term.

The changes in the global economy set out in the introduction will amplify these effects. Falling employment rates, falling incomes and rapid increases in wage inequality – all undesirable outcomes – are serious risks if we do not find ways to address the low literacy of so many Canadians.

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Annex B Statistical Tables

Table 2.1a Expenditure on Employment Insurance maternity benefits by jurisdiction, adults aged 16 and over, 2005 to 2009

	Employment insurance maternity payments
Province	Millions of dollars
Quebec	1,398
Ontario	1,344
Alberta	417
British Columbia	392
Manitoba	140
Saskatchewan	109
Nova Scotia	100
New Brunswick	92
Newfoundland and Labrador	70
Prince Edward Island	22
Total	**4,160**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.1b Expenditures on Employment Insurance regular benefits by jurisdiction, adults aged 16 and over, 2005 to 2009

	Employment insurance regular benefits
Province	Millions of dollars
Ontario	3,821
Quebec	3,625
British Columbia	1,218
Alberta	774
Newfoundland and Labrador	747
New Brunswick	621
Nova Scotia	563
Manitoba	245
Saskatchewan	213
Prince Edward Island	182
Total	**12,391**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.1c Expenditures on Social Assistance benefits by jurisdiction, adults aged 16 and over, 2005 to 2009

	Social assistance benefits
Province	Millions of dollars
Ontario	4,412
Quebec	2,321
British Columbia	878
Alberta	731
Saskatchewan	236
Manitoba	213
Newfoundland and Labrador	194
New Brunswick	178
Nova Scotia	151
Prince Edward Island	25
Total	**9,339**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.1d Expenditures on Workers Compensation benefits by jurisdiction, adults aged 16 and over, 2005 to 2009

	Workers' compensation benefits
Province	Millions of dollars
Ontario	2,419
Quebec	1,521
British Columbia	802
Alberta	450
Nova Scotia	177
Newfoundland and Labrador	116
Manitoba	112
Saskatchewan	96
New Brunswick	87
Prince Edward Island	19
Total	**5,892**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.2a Employment Insurance maternity benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009

	Employment insurance maternity benefits rate
Province	Percent
Quebec	3
Prince Edward Island	2
Newfoundland and Labrador	2
Saskatchewan	2
Manitoba	2
New Brunswick	2
Alberta	2
Nova Scotia	2
Ontario	2
British Columbia	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.2b Employment Insurance regular benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009

	Employment insurance regular benefit rate
Province	Percent
Newfoundland and Labrador	22
Prince Edward Island	21
New Brunswick	15
Nova Scotia	12
Quebec	11
Ontario	7
British Columbia	7
Manitoba	6
Alberta	6
Saskatchewan	6

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.2c Social Assistance benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009

	Social assistance benefit rate
Province	Percent
Newfoundland and Labrador	7
Alberta	6
Ontario	6
Quebec	5
Saskatchewan	5
New Brunswick	5
Prince Edward Island	4
Nova Scotia	4
Manitoba	3
British Columbia	3

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.2d Workers Compensation benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009

	Workers compensation benefit rate
Provinces	Percent
Quebec	4
Nova Scotia	4
Newfoundland and Labrador	3
British Columbia	3
Manitoba	3
Ontario	3
Saskatchewan	2
Prince Edward Island	2
New Brunswick	2
Alberta	2

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.3 Age distribution of benefit receipt, selected programs, Canada, 2005 to 2009

Age group	Employment insurance regular benefits	Employment insurance maternity benefits	Social assistance benefits	Workers' compensation benefits
	Benefit rate (%)			
16 to 24	12	11	13	8
25 to 34	23	66	18	15
35 to 44	24	22	18	17
45 to 54	24	2	21	24
55 to 64	14	0	19	19
65 and over	2	0	12	16
Total	**100**	**100**	**100**	**100**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.4a Employment Insurance regular benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009

Province	Females	Males
	Benefit rate (%)	
Newfoundland and Labrador	19	26
Prince Edward Island	19	24
Nova Scotia	10	15
New Brunswick	12	19
Quebec	9	13
Ontario	6	8
Manitoba	6	7
Saskatchewan	5	7
Alberta	5	6
British Columbia	7	7

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.4b Employment Insurance maternity benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009

Province	Females	Males
	Benefit rate (%)	
Newfoundland and Labrador	3	1
Prince Edward Island	3	1
Nova Scotia	2	1
New Brunswick	3	1
Quebec	3	2
Ontario	2	1
Manitoba	3	1
Saskatchewan	3	1
Alberta	3	1
British Columbia	2	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.4c Social Assistance benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009

	Females	Males
Province	Benefit rate (%)	
Newfoundland and Labrador	9	5
Prince Edward Island	5	3
Nova Scotia	5	3
New Brunswick	7	3
Quebec	7	4
Ontario	8	3
Manitoba	5	2
Saskatchewan	7	3
Alberta	10	3
British Columbia	4	3

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.4d Workers Compensation benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009

	Females	Males
Province	Benefit rate (%)	
Newfoundland and Labrador	2	4
Prince Edward Island	2	3
Nova Scotia	2	5
New Brunswick	1	3
Quebec	3	4
Ontario	2	3
Manitoba	2	4
Saskatchewan	2	3
Alberta	1	3
British Columbia	2	4

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.5a Employment Insurance maternity benefit rates by gender by jurisdiction, adults aged 16 and over, 2005 to 2009

	Educational attainment				
	Less than high school	High school graduate	Some post-secondary education	Bachelors degree	Graduate degree
Province	Benefit rate (%)				
Newfoundland and Labrador	0	1	3	2	1
Prince Edward Island	1	1	6	1	1
Nova Scotia	0	1	3	2	0
New Brunswick	0	1	4	2	0
Quebec	1	1	6	2	1
Ontario	0	1	4	2	1
Manitoba	1	1	4	2	0
Saskatchewan	0	1	5	2	0
Alberta	1	1	5	2	1
British Columbia	0	1	4	2	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.5b Employment Insurance regular benefit rates by education and jurisdiction, adults aged 16 and over, 2005 to 2009

	Educational attainment				
	Less than high school	High school graduate	Some post-secondary education	Bachelors degree	Graduate degree
Province	Benefit rate (%)				
Newfoundland and Labrador	24	26	23	11	3
Prince Edward Island	27	28	20	8	5
Nova Scotia	11	15	16	6	2
New Brunswick	16	18	17	6	3
Quebec	10	12	12	9	4
Ontario	6	9	8	5	4
Manitoba	5	7	8	6	4
Saskatchewan	4	6	7	3	2
Alberta	4	5	7	5	3
British Columbia	6	7	8	5	4

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.5c Social Assistance benefit rates by education and jurisdiction, adults aged 16 and over, 2005 to 2009

	Educational attainment				
	Less than high school	High school graduate	Some post-secondary education	Bachelors degree	Graduate degree
Province	Benefit rate (%)				
Newfoundland and Labrador	13	3	8	0	0
Prince Edward Island	7	3	5	0	0
Nova Scotia	7	3	6	0	0
New Brunswick	8	3	7	1	0
Quebec	11	3	7	0	0
Ontario	10	5	10	1	0
Manitoba	6	2	5	1	0
Saskatchewan	9	4	9	0	0
Alberta	15	6	11	1	0
British Columbia	5	4	9	0	0

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.5d Workers Compensation benefit rates by education and jurisdiction, adults aged 16 and over, 2005 to 2009

	Educational attainment				
	Less than high school	High school graduate	Some post-secondary education	Bachelors degree	Graduate degree
Province	Benefit rate (%)				
Newfoundland and Labrador	3	1	6	1	0
Prince Edward Island	3	2	5	0	0
Nova Scotia	5	2	8	1	0
New Brunswick	3	1	4	0	0
Quebec	4	2	7	1	0
Ontario	4	2	6	1	0
Manitoba	3	3	6	1	0
Saskatchewan	3	2	5	0	0
Alberta	3	2	6	1	0
British Columbia	5	3	10	1	0

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.6a Employment Insurance maternity benefit rates by industry, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Industry	Percent
Health care and social assistance	4
Industrial services	4
Finance, insurance, real estate and leasing	3
Other services	3
Public administration	2
Manufacturing	2
Professional, scientific and technical services	2
Trade	2
Information, culture and recreation	2
Transport and warehousing	2
Forestry, fishing, mining, oil and gas	2
Business, building and other support	2
Construction	1
Utilities	1
Agriculture	1
Accommodation and food services	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.6b Employment Insurance benefit rate by industry, 2005 to 2009

Industry	Benefit receipt rate Percent
Forestry, fishing, mining, oil and gas	23
Construction	21
Manufacturing	16
Industrial services	13
Agriculture	12
Business, building and other support services	11
Transport and warehousing	10
Information, culture and recreation	10
Accommodation and food services	9
Other services	9
Trade	7
Health care and social assistance	7
Public administration	6
Finance, insurance, real estate and leasing	5
Professional, scientific and technical services	5
Utilities	2

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.6c Social Assistance benefit rates by industry, adults aged 16 and over, 2005 to 2009

Industry	Benefit receipt rate Percent
Business, building and other support services	4
Accommodation and food services	4
Health care and social assistance	3
Other services	3
Information, culture and recreation	3
Forestry, fishing, mining, oil and gas	2
Trade	2
Agriculture	2
Finance, insurance, real estate and legal	2
Construction	1
Transport and warehousing	1
Manufacturing	1
Industrial services	1
Professional, scientific and technical services	1
Public administration	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.6d Workers Compensation benefit rates by industry, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Industry	Percent
Transport and warehousing	4
Manufacturing	4
Construction	3
Health care and social assistance	3
Public administration	3
Forestry, fishing, mining, oil and gas	3
Trade	3
Agriculture	3
Accommodation and food services	2
Other services	2
Business, building and other support	2
Industrial services	2
Utilities	1
Professional, scientific and technical services	1
Information, culture and recreation	1
Finance, insurance, real estate and legal	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.7a Employment Insurance maternity benefit rates by occupation, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Occupation	Percent
Health occupations	5
Occupations in social science	5
Business, finance and administrative	3
Natural and applied science	2
Occupation unique to processing	2
Occupation in art, culture	2
Trades, transport and equipment	2
Management occupations	2
Sales and service occupations	1
Occupation unique to primary industries	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.7b Employment Insurance regular benefit rates by occupation, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Occupation	Percent
Occupations unique to processing	23
Occupations unique to primary industries	20
Trades, transport and equipment	19
Sales and service occupations	10
Occupations in social science	9
Business, finance and administrative	8
Natural and applied science	7
Occupations in art, culture	7
Health occupations	6
Management occupations	4

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.7c Social Assistance benefit rates by occupation, adults aged 16 and over, 2005 to 2009

Occupation	Benefit receipt rate Percent
Sales and service occupations	4
Occupations unique to processing	2
Occupations unique to primary industries	2
Business, finance and administrative	2
Health occupations	2
Trades, transport and equipment	1
Occupations in social science	1
Occupations in art, culture	1
Management occupations	1
Natural and applied science	0

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.7d Workers Compensation benefit rates by occupation, adults aged 16 and over, 2005 to 2009

Occupation	Benefit receipt rate Percent
Occupations unique to processing	5
Trades, transport and equip	5
Health occupations	4
Occupations unique to primary industries	3
Sales and service occupations	2
Occupations in social science	2
Business, finance and administrative	1
Management occupations	1
Occupations in art, culture	1
Natural and applied science	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.8a Employment Insurance maternity benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009

Average weeks worked	Benefit receipt rate Percent
Zero	1
1 to 25	3
26 to 47	3
48 and over	2

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.8b Employment Insurance regular benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Average weeks worked	Percent
Zero	4
1 to 25	21
26 to 47	30
48 and over	6

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.8c Social Assistance benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Average weeks worked	Percent
Zero	16
1 to 25	7
26 to 47	4
48 and over	2

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.8d Workers Compensation benefit rates by weeks worked by jurisdiction, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Average weeks worked	Percent
Zero	4
1 to 25	2
26 to 47	3
48 and over	3

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.9a Employment Insurance maternity benefit rates by income quintile, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Income quintile	Percent
Quintile 1	1
Quintile 2	2
Quintile 3	3
Quintile 4	3
Quintile 5	1

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.9b Employment Insurance regular benefit rates by income quintile, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Income quintile	Percent
Quintile 1	3
Quintile 2	10
Quintile 3	15
Quintile 4	11
Quintile 5	4

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.9c Social Assistance benefit rates by income quintile, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Income quintile	Percent
Quintile 1	10
Quintile 2	11
Quintile 3	4
Quintile 4	1
Quintile 5	0

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 2.9d Workers Compensation benefit rates by income quintile, adults aged 16 and over, 2005 to 2009

	Benefit receipt rate
Income quintile	Percent
Quintile 1	1
Quintile 2	3
Quintile 3	5
Quintile 4	4
Quintile 5	2

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.1a Employment Insurance maternity benefit rates by prose literacy level, adults aged 16 and over, 2005 to 2009

	Rate of benefit receipt
Prose literacy proficiency level	Percent
Level 1	1
Level 2	2
Level 3	2
Level 4	3
Level 5	4

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.1b Employment Insurance regular benefit rates by prose literacy level, adults aged 16 and over, 2005 to 2009

	Rate of benefit receipt
Prose literacy proficiency level	Percent
Level 1	8
Level 2	9
Level 3	9
Level 4	8
Level 5	9

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.1c Social Assistance benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009

	Rate of benefit receipt
Prose literacy proficiency level	Percent
Level 1	8
Level 2	5
Level 3	4
Level 4	3
Level 5	5

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.1d Workers Compensation benefit rates by jurisdiction, adults aged 16 and over, 2005 to 2009

	Rate of benefit receipt
Prose literacy proficiency level	Percent
Level 1	4
Level 2	3
Level 3	3
Level 4	2
Level 5	2

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.2a Unadjusted odds of having received regular Employment Insurance benefits, adults aged 16 and over, Canada, 2005 to 2009

	Unadjusted odds prose level only
	Percent
Prose level 1	94
Prose level 2	114
Prose level 3	108
Prose level 4	101
Prose level 5	**100**
Age 16 to 25	92
Age 26 to 36	178
Age 36 to 45	169
Age 46 to 55	163
Age 56 to 65	120
Age 65 plus	**100**
Gender: Males	115
Gender: Females	**100**
Education: Less than high school	111
Education: High school graduate	140
Education: Some post-secondary education	143
Education: Degree	86
Education: Graduate degree	**100**
Newfoundland and Labrador	254
Prince Edward Island	235
Nova Scotia	126
New Brunswick	161
Quebec	108
Ontario	67
Manitoba	61
Saskatchewan	54
Alberta	54
British Columbia	**100**
Agriculture	134
Forestry, fishing, mining, oil and gas	301
Utilities	39
Construction	272
Manufacturing	225
Trade	78
Transport and warehousing	136
Finance, insurance, real estate and legal	60
Professional, scientific and technical services	56
Business, building and other support services	132
Educational services	155
Health care and social assistance	74
Information, culture and recreation	95
Accommodation and food services	106
Other services	97
Public administration	62
Not employed	**100**

Table 3.2a Unadjusted odds of having received regular Employment Insurance benefits, adults aged 16 and over, Canada, 2005 to 2009 (Concluded)

	Unadjusted odds prose level only
	Percent
A Management occupations	47
B Business, finance and administrative	88
C Natural and applied sciences	78
D Health occupations	60
E Occupations in social sciences	96
F Occupations in art, culture	72
G Sales and services occupations	108
H Trades, transportation and equipment operation	246
I Occupation unique to primary industries	251
J Occupations unique to processing, manufacturing and utilities	310
Not employed	**100**
Quintile 1	41
Quintile 2	148
Quintile 3	221
Quintile 4	151
Quintile 5	**100**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.3a Average unadjusted and adjusted odds of receiving regular Employment Insurance, adults aged 16 and over, Canada, 2005 to 2009

	Unadjusted odds	Adjusted odds
Characteristic	Percent	
Prose Level 1	95	93
Prose Level 2	120	101
Prose Level 3	114	106
Prose Level 4	100	98
Prose level 5	**100**	**100**
Age 16 to 25	92	95
Age 26 to 36	178	153
Age 36 to 45	169	163
Age 46 to 55	163	155
Age 56 to 65	120	129
Age 65 plus	**100**	**100**
Gender: Males	115	94
Gender: Females	100	
Education: Less than high school	111	127
Education: High school graduate	140	121
Education: Some post-secondary education	143	122
Education: Degree	86	91
Education: Graduate degree	**100**	**100**

Table 3.3a Average unadjusted and adjusted odds of receiving regular Employment Insurance, adults aged 16 and over, Canada, 2005 to 2009 (Concluded)

Characteristic	Unadjusted odds	Adjusted odds
	Percent	
Newfoundland and Labrador	254	271
Prince Edward Island	235	234
Nova Scotia	126	137
New Brunswick	161	160
Quebec	108	116
Ontario	67	66
Manitoba	61	65
Saskatchewan	54	50
Alberta	54	45
British Columbia	**100**	**100**
Agriculture	143	71
Forestry, fishing, mining, oil and gas	332	257
Utilities	22	36
Construction	285	211
Manufacturing	206	140
Trade	87	76
Transport and warehousing	122	87
Finance, insurance, real estate and leasing	55	62
Professional, scientific and technical services	54	82
Business, building and other support services	129	94
Educational services	161	246
Health care and social assistance	82	85
Information, culture and recreation	118	145
Accommodation and food services	109	100
Other services	107	76
Public administration	66	89
Not employed	**100**	**100**
A Management occupations	47	52
B Business, finance and administrative	88	80
C Natural and applied sciences	78	81
D Health occupations	60	74
E Occupations in social sciences	96	79
F Occupations in art, culture	72	**76**
G Sales and service occupations	108	119
H Trades, transportation and equipment operation	246	191
I Occupation unique to primary industries	251	220
J Occupations unique to processing, manufacturing and utilities	310	180
Not employed	**100**	**100**
Quintile 1	41	52
Quintile 2	148	181
Quintile 3	221	206
Quintile 4	151	118
Quintile 5	**100**	**100**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.3b Average Unadjusted and adjusted odds of receiving Social Assistance benefits, adults aged, Canada, 2005 to 2009

	Unadjusted odds	Adjusted odds
Characteristic	Percent	
Prose Level 1	210	109
Prose Level 2	130	111
Prose Level 3	92	104
Prose Level 4	63	94
Prose level 5	**100**	**100**
Age 16 to 25	77	87
Age 26 to 36	108	217
Age 36 to 45	97	187
Age 46 to 55	112	186
Age 56 to 65	135	89
Age 65 plus	**100**	**100**
Gender: Males	69	87
Gender: Females	**100**	**100**
Education: Less than high school	343	254
Education: High school graduate	191	147
Education: Some post-secondary education	132	118
Education: Degree	43	53
Education: Graduate degree	**100**	**100**
Newfoundland and Labrador	149	112
Prince Edward Island	83	86
Nova Scotia	80	75
New Brunswick	109	97
Quebec	113	100
Ontario	117	117
Manitoba	71	73
Saskatchewan	111	131
Alberta	132	194
British Columbia	**100**	**100**
Agriculture	89	49
Forestry, fishing, mining, oil and gas	89	119
Utilities	14	50
Construction	78	80
Manufacturing	73	54
Trade	137	89
Transport and warehousing	72	69
Finance, insurance, real estate and leasing	65	79
Professional, scientific and technical services	59	120
Business, building and other support services	232	143
Educational services	60	96
Health care and social assistance	154	170
Information, culture and recreation	107	111
Accommodation and food services	232	110
Other services	167	105
Public administration	64	155
Not employed	**100**	**100**

Table 3.3c Average Unadjusted and adjusted odds of receiving Social Assistance benefits, adults aged, Canada, 2005 to 2009

Characteristic	Unadjusted odds	Adjusted odds
	Percent	
A Management occupations	42	61
B Business, finance and administrative	107	106
C Natural and applied sciences	22	44
D Health occupations	92	75
E Occupations in social sciences	70	76
F Occupations in art, culture	69	67
G Sales and service occupations	225	136
H Trades, transportation and equipment operation	82	106
I Occupation unique to primary industries	117	105
J Occupations unique to processing, manufacturing and utilities	146	192
Not employed	**100**	**100**
Quintile 1	442	213
Quintile 2	500	402
Quintile 3	174	178
Quintile 4	35	48
Quintile 5	**100**	**100**

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 3.3d Average unadjusted and adjusted odds of receiving workers compensation benefits, adults aged 16 and over, Canada, 2005 to 2009

Characteristic	Unadjusted odds	Adjusted odds
	Percent	
Prose level 1	165	108
Prose level 2	119	100
Prose level 3	104	105
Prose level 4	89	111
Prose level 5	**100**	**100**
Age 16 to 25	52	89
Age 26 to 36	94	115
Age 36 to 45	99	119
Age 46 to 55	134	154
Age 56 to 65	140	118
Age 65 plus	**100**	**100**
Gender: Males	133	128
Gender: Females	**100**	**100**
Education: Less than high school	199	205
Education: High school graduate	138	124
Education: Some post-secondary education	158	153
Education: Degree	58	64
Education: Graduate degree	**100**	**100**

Table 3.3d **Average unadjusted and adjusted odds of receiving workers compensation benefits, adults aged 16 and over, Canada, 2005 to 2009** (Concluded)

Characteristic	Unadjusted odds	Adjusted odds
	Percent	
Newfoundland and Labrador	117	105
Prince Edward Island	90	83
Nova Scotia	129	131
New Brunswick	77	73
Quebec	130	127
Ontario	93	100
Manitoba	105	106
Saskatchewan	90	92
Alberta	72	78
British Columbia	**100**	**100**
Agriculture	63	53
Forestry, fishing, mining, oil and gas	159	117
Utilities	75	72
Construction	169	92
Manufacturing	187	105
Trade	116	122
Transport and warehousing	214	128
Finance, insurance, real estate and leasing	31	42
Professional, scientific and technical services	39	71
Business, building and other support services	111	107
Educational services	76	127
Health care and social assistance	160	152
Information, culture and recreation	63	85
Accommodation and food services	102	137
Other services	95	80
Public administration	106	135
Not employed	**100**	**100**
A Management occupations	53	50
B Business, finance and administrative	56	60
C Natural and applied sciences	50	55
D Health occupations	196	165
E Occupations in social sciences	69	88
F Occupations in art, culture	52	78
G Sales and service occupations	107	114
H Trades, transportation and equipment operation	228	153
I Occupation unique to primary industries	111	118
J Occupations unique to processing, manufacturing and utilities	231	162
Not employed	**100**	**100**
Quintile 1	33	24
Quintile 2	114	103
Quintile 3	201	204
Quintile 4	158	172
Quintile 5	**100**	**100**

Table 4.1a Relationship between literacy, costs and benefits based on prose literacy imputed onto SLID, Canada, 2005 to 2009

	Earnings increase	Reduction in employment insurance regular benefits	Reduction in social assistance benefits	Reduction in workers compensation benefits
	Dollars/point			
Canada	**155**	**0.61**	**3.85**	**0.90**

Note: Estimates are based on national relationships because province of employment are/or benefit receipt may differ from province of current residence.
Source: 2003 IALSS and 2005 to 2009 SLID.

Table 4.1b Cost benefit based on prose literacy imputed onto SLID

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Age group								
Total	**29,010**	**540**	**83,700**	**330**	**2,080**	**490**	**1,396**	**427**
16 to 24	1,640	40	6,200	30	170	40	2,077	667
25 to 34	1,580	50	7,750	30	180	40	2,275	737
35 to 44	3,100	80	12,400	50	290	70	1,874	596
45 to 54	3,620	80	12,400	50	320	70	1,717	540
55 to 64	6,060	100	15,500	60	400	90	1,278	386
65 plus	13,000	190	29,450	110	720	170	1,055	307
Education level								
Total	**29,010**	**540**	**83,700**	**330**	**2,080**	**490**	**1,396**	**427**
Education: Less than high school	17,400	250	38,750	150	970	230	1,063	310
Education: Secondary graduate	4,450	90	13,950	50	350	80	1,522	472
Education: Some post-secondary education	5,670	150	23,250	90	590	140	2,077	667
Education: Bachelors degree	1,010	30	4,650	20	120	30	2,301	746
Education: Graduate degree	470	10	1,550	10	50	10	2,342	761
Gender								
Total	**29,010**	**540**	**83,700**	**330**	**2,080**	**490**	**1,396**	**427**
Female	14,200	260	40,300	160	1,020	240	1,394	427
Male	14,810	280	43,400	170	1,060	250	1,397	428
Industry								
Total	**7,190**	**130**	**20,150**	**80**	**520**	**120**	**1,394**	**426**
Agriculture	70	-	-	-	10	-	1,839	580
Forestry, fishing, mining, oil and gas	50	-	-	-	-	-	1,948	627
Utilities	10	-	-	-	-	-	2,900	925
Construction	160	-	-	-	20	-	2,170	701
Manufacturing	520	10	1,550	10	40	10	1,551	482
Trade	270	10	1,550	10	30	10	2,404	782
Transport and warehousing	140	-	-	-	10	-	1,899	604
Finance, insurance, real estate and leasing	60	-	-	-	10	-	2,620	856
Professional, scientific and technical services	50	-	-	-	10	-	3,173	1,054
Business, building and other support services	140	-	-	-	10	-	1,638	512
Educational services	60	-	-	-	10	-	2,893	951
Health care and social assistance	150	-	-	-	20	-	2,550	833
Information, culture and recreation	60	-	-	-	10	-	2,253	730
Accommodation and food services	160	-	-	-	20	-	2,113	680
Other services	110	-	-	-	10	-	1,735	547
Public administration	50	-	-	-	10	-	2,761	906
Not applicable	5,140	80	12,400	50	300	70	1,131	334

Table 4.1b Cost benefit based on prose literacy imputed onto SLID (Concluded)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Occupation								
Total	**29,010**	**540**	**83,700**	**330**	**2,080**	**490**	**1,396**	**427**
A Management occupations	340	10	1,550	10	50	10	2,799	922
B Business, finance and administrative	650	20	3,100	10	90	20	2,711	890
C Natural and applied sciences	140	10	1,550	-	20	10	3,116	1,034
D Health occupations	290	10	1,550	10	40	10	2,797	921
E Occupation in social sciences, education	200	10	1,550	10	30	10	3,166	1,050
F Occupations in art, culture, recreation	100	-	-	-	10	-	2,890	951
G Sales and services occupations	2,310	60	9,300	40	240	60	2,105	677
H Trades, transportation and equipment operation	1,840	50	7,750	30	180	40	1,903	606
I Occupation unique to primary industries	430	10	1,550	10	40	10	1,913	610
J Occupations unique to processing, manufacturing and utilities	1,440	30	4,650	20	100	20	1,373	419
Not employed	**21,250**	**330**	**51,150**	**200**	**1,270**	**300**	**1,148**	**340**

- Amount too small to be expressed.

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 4.2 Costs and rates of return in the top two quartiles, selected groups of adults aged 16 and over, Canada, 2005 to 2009 sum of return on Investment over 5 years[1]

Cost order of magnitude	Cost		Return on investment	
			Quartile 1	Quartile 2
Millions of dollars	Millions of dollars	Lable	Percent	
10 to 99	40	Utilities	961	n/a
	100	Occupations in art, culture, recreation and sport	880	n/a
	150	Natural and applied science	1,047	n/a
	180	Forestry, fishing, mining, oil and gas	n/a	663
	210	Occupation in social science, education, goverment and related occupation	1,037	n/a
	230	Public administration	890	n/a
	230	Professional, science and technical services	904	n/a
	250	Information, culture and recreation	n/a	742
100 to 999	270	Educational services	881	n/a
	290	Finance, insurance, real estate and leasing	n/a	796
	320	Health occupation	883	n/a
	400	Management occupation	809	n/a
	470	Graduate degree	n/a	749
	610	Health care and social assistance	827	n/a
	640	Business, finance and adminstrative occupation	894	n/a
	660	Accommodation and food services	n/a	649
	1,080	Bachelors degree	n/a	726
	1,180	Trade	n/a	743
	1,520	25 to 34	n/a	764
1,000 to 9,999	1,670	16 to 24	n/a	653
	2,290	Sales and services occupation	n/a	676
	5,670	Some post-secondary education	n/a	667

1 Return includes 33% of earnings.

Source: 2003 IALSS and 2005 to 2009 SLID.

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Provinces								
Newfoundland and Labrador	459	8,800	1,364	5	34	8	1,439	442
Prince Edward Island	97	1,990	308	1	8	2	1,540	478
Nova Scotia	960	18	2,790	11	68	16	1,384	423
New Brunswick	1,018	18	2,790	11	68	16	1,292	391
Quebec	8,150	140	21,700	90	560	130	1,321	401
Ontario	12,450	230	35,650	140	890	210	1,386	424
Manitoba	652	13,530	2	8	52	12	1,564	486
Saskatchewan	796	15,290	2	9	59	14	1,440	443
Alberta	1,630	30	4,650	20	130	30	1,589	495
British Columbia	2,800	60	9,300	30	220	50	1,522	472
Canada	**29,010**	**540**	**83,700**	**330**	**2,080**	**490**	**1,396**	**427**
Newfoundland and Labrador								
Age group								
Total	**458,500**	**8,800**	**1,364,000**	**5,400**	**33,900**	**7,900**	**1,439**	**442**
16 to	11,900	500	77,500	300	2,000	500	3,376	1,125
25 to	19,700	600	93,000	400	2,500	600	2,545	832
35 to	44,200	1,200	186,000	700	4,600	1,100	2,064	663
45 to	63,400	1,400	217,000	900	5,500	1,300	1,717	540
55 to	103,200	1,900	294,500	1,200	7,300	1,700	1,380	422
65 plus	216,100	3,100	480,500	1,900	11,900	2,800	1,050	305
Education level								
Total	**458,500**	**8,800**	**1,364,000**	**5,400**	**33,900**	**7,900**	**1,439**	**442**
Less than high school	359,800	5,300	821,500	3,200	20,400	4,800	1,079	315
Secondary graduate	42,900	1,100	170,500	700	4,400	1,000	2,039	654
Some post-secondary education	48,600	2,100	325,500	1,300	7,900	1,800	3,288	1,094
Bachelors degree	5,300	200	31,000	100	900	200	3,375	1,125
Graduate degree	1,900	100	15,500	100	300	100	3,376	1,125
Gender								
Total	**458,500**	**8,800**	**1,364,000**	**5,400**	**33,900**	**7,900**	**1,439**	**442**
Female	233,200	4,400	682,000	2,700	17,000	4,000	1,417	435
Male	225,300	4,400	682,000	2,700	16,900	4,000	1,462	450
Industry								
Total	**112,400**	**2,200**	**341,000**	**1,300**	**8,500**	**2,000**	**1472**	**454**
Agriculture	500	-	-	-	-	-	1738	548
Forestry, fishing, mining, oil and gas	4,800	100	15,500	100	400	100	1,840	584
Utilities	300	-	-	-	-	-	2,906	961
Construction	2,400	100	15,500	10	300	100	2,794	920
Manufacturing	5,200	100	15,500	100	500	100	1,749	551
Trade	3,100	100	15,500	100	400	100	2,858	942
Transport and warehousing	1,000	-	-	-	100	-	2,643	866
Finance, insurance, real estate and leasing	700	-	-	-	100	-	1,699	534
Professional, scientific and technical services	300	-	-	-	-	-	3,376	1,125
Business, building and other support services	900	-	-	-	100	-	2,464	804
Educational services	400	-	-	-	100	-	3,376	1,125
Health care and social assistance	2,100	100	15,500	-	300	100	2,664	874
Information, culture and recreation	1,100	-	-	-	100	-	2,123	683
Accommodation and food services	1,400	100	15,500	-	200	100	3,376	1,125
Other services	1,100	-	-	-	100	-	2,518	823
Public administration	800	-	-	-	100	-	3,376	1,125
Not applicable	**86,400**	**1,400**	**217,000**	**900**	**5,400**	**1,300**	**1,204**	**360**

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Newfoundland and Labrador								
Occupation								
Total	**458,500**	**8,800**	**1,364,000**	**5,400**	**33,900**	**7,900**	**1,439**	**442**
A Management occupations	2,200	100	15,500	100	400	100	3,375	1,125
B Business, finance and administrative	3,400	100	15,500	100	600	100	3,375	1,125
C Natural and applied sciences	800	-	-	-	100	-	3,375	1,125
D Health occupations	3,000	100	15,500	100	500	100	3,345	1,114
E Occupation in social sciences, education	1,200	100	15,500	-	200	-	3,375	1,125
F Occupations in art, culture, recreation	800	-	-	-	100	-	3,376	1,125
G Sales and services. occupations	25,700	900	139,500	600	3,600	800	2,796	921
H Trades, transportation and equipment operation	26,300	800	124,000	500	3,100	700	2,363	768
I Occupation unique to primary industries	18,600	400	62,000	200	1,600	400	1,649	516
J Occupations unique to processing, manufacturing and utilities	16,100	300	46,500	200	1,300	300	1,556	484
Not employed	**$360,400**	**5,800**	**$899,000**	**3,600**	**22,500**	**5,200**	**1,198**	**357**
Prince Edward Island								
Age group								
Total	**97,330**	**1,990**	**308,450**	**1,210**	**7,670**	**1,790**	**1,540**	**478**
16 to 24	2,810	120	18,600	70	470	110	3,375	1,125
25 to 34	3,940	160	24,800	100	600	140	3,070	1,017
35 to 44	7,550	230	35,650	140	890	210	2,357	766
45 to 54	11,080	300	46,500	180	1,140	270	2,041	655
55 to 64	21,680	430	66,650	260	1,640	380	1,474	455
65 plus	50,270	760	117,800	460	2,930	690	1,114	328
Education level								
Total	**97,330**	**1,990**	**308,450**	**1,210**	**7,670**	**1,790**	**1,540**	**478**
Less than high school	73,090	1,100	170,500	670	4,230	990	1,104	324
Secondary graduate	8,770	260	40,300	160	1,010	240	2,294	744
Some post-secondary education	13,610	550	85,250	340	2,120	500	3,148	1,045
Bachelors degree	1,540	70	10,850	40	260	60	3,375	1,125
Graduate degree	320	10	1,550	10	50	10	3,375	1,124
Gender								
Total	**97,330**	**1,990**	**308,450**	**1,210**	**7,670**	**1,790**	**1,540**	**478**
Female	44,190	910	141,050	560	3,510	820	1556	484
Male	53,130	1,080	167,400	660	4,150	970	1,528	474

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Prince Edward Island								
Industry								
Total	**$24,110**	**490**	**75,950**	**300**	**1,900**	**440**	**1,544**	**479**
Agriculture	810	20	3,100	10	80	20	1,887	600
Forestry, fishing, mining, oil and gas	610	20	3,100	10	70	20	2,139	689
Utilities	40	-	-	-	10	-	3,366	1,114
Construction	660	20	3,100	10	80	20	2,539	830
Manufacturing	1,300	30	4,650	20	120	30	1,894	603
Trade	740	30	4,650	20	100	20	2,613	856
Transport and warehousing	270	10	1,550	-	30	10	2,249	728
Finance, insurance, real estate and leasing	80	-	-	-	10	-	3,372	1,122
Professional, scientific and technical services	40	-	-	-	10	-	3,381	1,134
Business, building and other support services	380	10	1,550	10	40	10	1,870	594
Educational services	180	10	1,550	-	30	10	2,883	951
Health care and social assistance	610	20	3,100	10	70	20	2,374	772
Information, culture and recreation	200	10	1,550	-	30	10	2,765	908
Accommodation and food services	580	20	3,100	20	100	20	3,374	1,124
Other services	150	10	1,550	-	30	10	3,378	1,126
Public administration	530	20	3,100	10	60	10	2,183	705
Not applicable	**16,930**	**270**	**41,850**	**170**	**1,060**	**250**	**1,200**	**358**
Occupation								
Total	**97,330**	**1,990**	**308,450**	**1,210**	**7,670**	**1,790**	**1540**	**478**
A Management occupations	800	30	4,650	20	100	20	2,559	837
B Business, finance and administrative	1,370	60	9,300	30	210	50	3,174	1,054
C Natural and applied sciences	190	10	1,550	10	30	10	3,375	1,124
D Health occupations	1,630	50	7,750	30	180	40	2,238	724
E Occupation in social sciences, education	470	20	3,100	10	80	20	3,376	1,125
F Occupations in art, culture, recreation	100	-	-	-	20	-	3,380	1,128
G Sales and services occupations	6,340	230	35,650	140	890	210	2,830	932
H Trades, transportation and equipment operation	5,510	180	27,900	110	680	160	2,455	800
I Occupation unique to primary industries	7,750	180	27,900	110	710	170	1,799	569
J Occupations unique to processing, manufacturing and utilities	3,300	80	12,400	50	330	80	1,962	627
Not employed	**69,870**	**1,150**	**178,250**	**700**	**4,440**	**1,040**	**1,223**	**366**
Nova Scotia								
Age group								
Total	**960**	**18**	**2,790**	**11**	**68**	**16**	**1384**	**423**
16 to 24	69	2	310	1	6	2	1,828	580
25 to 34	46	1	155	1	6	1	2,467	806
35 to 44	77	2	310	1	8	2	2,061	661
45 to 54	112	3	465	2	11	2	1,869	595
55 to 64	202	4	620	2	14	3	1,294	392
65 plus	453	6	930	4	24	6	1,014	293

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Nova Scotia								
Education level								
Total	**960**	**18**	**2,790**	**11**	**68**	**16**	**1.384**	**423**
Less than high school	577	8	1,240	5	32	7	1,051	305
Secondary graduate	115	3	465	2	10	2	1,661	522
Some post-secondary education	204	5	775	3	20	5	1,960	626
Bachelors degree	42	1	155	1	5	1	2,152	699
Graduate degree	21	1	155	-	2	-	1,889	588
Gender								
Total	**960**	**18**	**2,790**	**11**	**68**	**16**	**1,384**	**423**
Female	458	9	1,395	5	33	8	1,398	428
Male	502	9	1,395	6	35	8	1,372	419
Industry								
Total	**231**	**4**	**620**	**3**	**16**	**4**	**1,385**	**423**
Agriculture	1	-	-	-	-	-	2,468	747
Forestry, fishing, mining, oil and gas	4	-	-	-	-	-	1,582	455
Utilities	-	-	-	-	-	-	2,641	804
Construction	7	-	-	-	1	-	1,485	469
Manufacturing	5	-	-	-	1	-	2,128	697
Trade	11	-	-	-	1	-	2,237	701
Transport and warehousing	4	-	-	-	-	-	1,996	592
Finance, insurance, real estate and leasing	3	-	-	-	-	-	1,841	541
Professional, scientific and technical services	1	-	-	-	-	-	3,485	1,083
Business, build and other support	4	-	-	-	-	-	1,576	453
Educational services	2	-	-	-	-	-	3,202	990
Health care and social assistance	6	-	-	-	1	-	2,327	759
Information, culture and recreation	2	-	-	-	-	-	2,321	699
Accommodation and food services	5	-	-	-	1	-	2,248	743
Other services	1	-	-	-	-	-	3,214	994
Public administration	4	-	-	-	-	-	2,404	726
Not applicable	**170**	**3**	**465**	**2**	**10**	**2**	**1,112**	**327**
Occupation								
Total	**960**	**18**	**2,790**	**11**	**68**	**16**	**1,384**	**423**
A Management occupations	16	1	155	-	2	-	2,374	758
B Business, finance and administrative	25	1	155	1	3	1	2,611	862
C Natural and applied sciences	6	-	-	-	1	-	3,021	988
D Health occupations	12	-	-	-	2	-	2,622	856
E Occupation in social sciences, education	7	-	-	-	1	-	3,279	1,060
F Occupations in art, culture, recreation	4	-	-	-	1	-	3,200	1,078
G Sales and services occupations	79	2	310	1	9	2	2,158	696
H Trades, transportation and equipment operation	59	1	155	1	6	1	1,868	595
I Occupation unique to primary industries	16	-	-	-	1	-	1,759	535
J Occupations unique to processing, manufacturing and utilities	16	-	-	-	2	-	2,019	642
Not employed	720	11	1,705	7	42	10	1,110	327

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
New Brunswick								
Age group								
Total	**1,018**	**18**	**2,790**	**11**	**68**	**16**	**1292**	**391**
16 to 24	68	2	310	1	6	1	1,772	557
25 to 34	58	2	310	1	6	1	2,054	657
35 to 44	127	3	465	2	10	2	1,562	485
45 to 54	130	3	465	2	11	2	1,588	496
55 to 64	240	4	620	2	14	3	1,149	339
65 plus	395	5	775	3	21	5	998	287
Education level								
Total	**1,018**	**18**	**2,790**	**11**	**68**	**16**	**1292**	**391**
Less than high school	588	8	1,240	5	31	7	1,010	291
Secondary graduate	165	3	465	2	12	3	1,383	424
Some post-secondary education	219	5	775	3	20	5	1,820	576
Bachelors degree	33	1	155	1	3	1	2,067	666
Graduate degree	13	-	-	-	1	-	2,037	631
Gender								
Total	**1,018**	**18**	**2,790**	**11**	**68**	**16**	**1292**	**391**
Female	522	9	1,395	5	34	8	1,244	374
Male	495	9	1,395	5	34	8	1,341	407
Industry								
Total	**253**	**4**	**620**	**3**	**17**	**4**	**1,299**	**394**
Agriculture	3	-	-	-	-	-	1,199	329
Forestry, fishing, mining, oil and gas	6	-	-	-	-	-	1,364	383
Utilities	-	-	-	-	-	-	2,094	624
Construction	11	-	-	-	1	-	1,412	430
Manufacturing	14	-	-	-	1	-	1,364	408
Trade	11	-	-	-	1	-	1,897	589
Transport and warehousing	4	-	-	-	-	-	1,483	422
Finance, insurance, real estate and leasing	3	-	-	-	-	-	1,865	548
Professional, scientific and technical services	2	-	-	-	-	-	2,149	642
Inform, culture and recreation	7	-	-	-	1	-	1,699	544
Educational services	4	-	-	-	-	-	2,324	700
Health care and social assistance	10	-	-	-	1	-	1,902	594
Information, culture and recreation	3	-	-	-	-	-	2,111	630
Accommodation and food services	7	-	-	-	1	-	1,751	557
Other services	2	-	-	-	-	-	3,125	964
Public administration	4	-	-	-	-	-	1,888	556
Not applicable	**162**	**2**	**310**	**1**	**9**	**2**	**1,056**	**306**

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
New Brunswick								
Occupation								
Total	**1,018**	**18**	**2,790**	**11**	**68**	**16**	**292**	**391**
A Management occupations	11	-	-	-	1	-	2,795	887
B Business, finance and administrative	28	1	155	1	3	1	2,424	793
C Natural and applied sciences	5	-	-	-	1	-	3,313	1,092
D Health occupations	17	1	155	-	2	-	2,244	712
E Occupation in social sciences, education	9	-	-	-	1	-	3,067	982
F Occupations in art, culture, recreation	2	-	-	-	-	-	2,312	696
G Sales and services. occupations	109	2	310	1	9	2	1,709	534
H Trades, transportation and equipment operation	93	2	310	1	7	2	1,405	433
I Occupation unique to primary industries	36	1	155	-	2	1	1,298	389
J Occupations unique to processing, manufacturing and utilities	30	1	155	-	2	-	1,243	366
Not employed	**677**	**10**	**1,550**	**6**	**38**	**9**	**1,070**	**312**
Quebec								
Age group								
Total	**8,150**	**140**	**21,700**	**90**	**560**	**130**	**1,321**	**401**
16 to 24	330	10	1,550	10	40	10	2,206	713
25 to 34	450	10	1,550	10	50	10	2,073	666
35 to 44	860	20	3,100	10	80	20	1,733	546
45 to 54	1,040	20	3,100	10	80	20	1,592	496
55 to 64	1,770	30	4,650	20	120	30	1,273	384
65 plus	3,700	50	7,750	30	200	50	1,002	288
Education level								
Total	**8,150**	**140**	**21,700**	**90**	**560**	**130**	**1,321**	**401**
Less than high school	5,480	80	12,400	50	300	70	1,033	299
Secondary graduate	1,000	20	3,100	10	80	20	1,487	459
Some post-secondary education	1,350	40	6,200	20	150	30	2,148	692
Bachelors degree	200	10	1,550	-	20	10	2,203	712
Graduate degree	110	-	-	-	10	-	2,381	775
Gender								
Total	**8,150**	**140**	**21,700**	**90**	**560**	**130**	**1321**	**401**
Female	3,880	70	10,850	40	270	60	1,352	412
Male	4,270	70	10,850	50	290	70	1,293	391

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Quebec								
Industry								
Total	**1,990**	**40**	**6,200**	**20**	**140**	**30**	**1,331**	**404**
Agriculture	10	-	-	-	-	-	1,886	578
Forestry, fishing, mining, oil and gas	10	-	-	-	-	-	1,513	457
Utilities	-	-	-	-	-	-	2,172	650
Construction	30	-	-	-	-	-	2,382	779
Manufacturing	150	-	-	-	10	-	1,478	458
Trade	60	-	-	-	10	-	2,630	860
Transport and warehousing	30	-	-	-	-	-	1,740	552
Finance, insurance, real estate and leasing	10	-	-	-	-	-	2,977	970
Professional, scientific and technical services	10	-	-	-	-	-	3,023	994
Business, building and other support services	40	-	-	-	-	-	1,696	530
Educational services	10	-	-	-	-	-	2,871	930
Health care and social assistance	40	-	-	-	10	-	2,705	887
Information, culture and recreation	10	-	-	-	-	-	3,040	980
Accommodation and food services	30	-	-	-	-	-	2,241	736
Other services	50	-	-	-	-	-	1,426	439
Public administration	10	-	-	-	-	-	303	985
Not applicable	**1,480**	**20**	**3,100**	**10**	**80**	**20**	**1,091**	**320**
Occupation								
Total	**8,150**	**140**	**21,700**	**90**	**560**	**130**	**1321**	**401**
A Management occupations	80	-	-	-	10	-	2,970	985
B Business, finance and administrative	130	-	-	-	20	-	2,858	941
C Natural and applied sciences	30	-	-	-	-	-	3,347	1,113
D Health occupations	80	-	-	-	10	-	2,836	939
E Occupation in social sciences, education	50	-	-	-	10	-	3,166	1,048
F Occupations in art, culture, recreation	20	-	-	-	-	-	3,209	1,073
G Sales and services occupations	560	20	3,100	10	60	10	2,167	699
H Trades, transportation and equipment operation	490	10	1,550	10	50	10	1,892	602
I Occupation unique to primary industries	100	-	-	-	10	-	1,843	582
J Occupations unique to processing, manufacturing and utilities	490	10	1,550	-	30	10	1,213	362
Not employed	**6,120**	**90**	**13,950**	**60**	**350**	**80**	**1,095**	**321**
Ontario								
Age group								
Total	**12,450**	**230**	**35,650**	**140**	**890**	**210**	**1386**	**424**
16 to 24	850	20	3,100	10	80	20	1,873	595
25 to 34	710	20	3,100	10	80	20	2,273	736
35 to 44	1,500	40	6,200	20	140	30	1,796	568
45 to 54	1,680	40	6,200	20	140	30	1,636	512
55 to 64	2,730	40	6,200	30	170	40	1,161	344
65 plus	4,990	70	10,850	50	290	70	1,093	321
Education level								
Total	**12,450**	**230**	**35,650**	**140**	**890**	**210**	**1,386**	**424**
Less than high school	6,860	100	15,500	60	380	90	1,051	306
Secondary graduate	2,200	40	6,200	30	160	40	1,404	430
Some post secondary education	2,680	70	10,850	40	270	60	1,970	629
Bachelors degree	490	10	1,550	10	60	10	2,343	760
Graduate degree	230	10	1,550	-	30	10	2,347	762

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Ontario								
Gender								
Total	**12,450**	**230**	**35,650**	**140**	**890**	**210**	**1,386**	**424**
Female	6,170	110	17,050	70	440	100	1,379	421
Male	6,280	120	18,600	70	450	110	1,393	426
Industry								
Total	**3,100**	**60**	**9,300**	**40**	**220**	**50**	**1,390**	**425**
Agriculture	20	-	-	-	-	-	1,581	483
Forestry, fishing, mining, oil and gas	10	-	-	-	-	-	2,358	754
Utilities	-	-	-	-	-	-	3,342	1,121
Construction	70	-	-	-	10	-	1,987	634
Manufacturing	280	10	1,550	-	20	10	1,497	462
Trade	130	-	-	-	10	-	2,169	697
Transport and warehousing	70	-	-	-	10	-	1,841	584
Finance, insurance, real estate and leasing	30	-	-	-	-	-	2,808	937
Professional, scientific and technical services	20	-	-	-	-	-	3,270	1,102
Business, building and other support services	50	-	-	-	-	-	1,696	537
Educational services	30	-	-	-	-	-	2,891	965
Health care and social assistance	60	-	-	-	10	-	2,652	867
Information, culture and recreation	30	-	-	-	-	-	2,074	676
Accommodation and food services	80	-	-	-	10	-	1,942	618
Other Services	40	-	-	-	-	-	1,791	572
Public administration	30	-	-	-	-	-	2,611	860
Not applicable	**2,140**	**30**	**4,650**	**20**	**130**	**30**	**1,131**	**334**
Occupation								
Total	**12,450**	**230**	**35,650**	**140**	**890**	**210**	**1,386**	**424**
A Management occupations	150	10	1,550	-	20	-	2,695	884
B Business, finance and administrative	330	10	1,550	10	40	10	2,640	865
C Natural and applied sciences	80	-	-	-	10	-	2,957	980
D Health occupations	130	-	-	-	20	-	2,761	910
E Occupation in social sciences, education	100	-	-	-	20	-	3,134	1041
F Occupations in art, culture, recreation	50	-	-	-	10	-	2,704	887
G Sales and services occupations	1,020	30	4,650	20	100	20	1,990	636
H Trades, transportation and equipment operation	840	20	3,100	10	80	20	1,775	561
I Occupation unique to primary industries	150	-	-	-	10	-	1,733	545
J Occupations unique to processing, manufacturing and utilities	750	10	1,550	10	50	10	1,381	421
Not Employed	**8,850**	**140**	**21,700**	**80**	**530**	**120**	**1,142**	**338**
Manitoba								
Age group								
Total	**652,270**	**13,530**	**2,097,150**	**8,260**	**52,110**	**12,180**	**1,564**	**486**
16 to 24	30,710	1,170	181,350	720	4,520	1,060	2,967	981
25 to 34	21,710	920	142,600	560	3,530	820	3,282	1,092
35 to 44	55,260	1,700	263,500	1,040	6,540	1,530	2,367	769
45 to 54	55,300	1,720	266,600	1,050	6,630	1,550	2,399	781
55 to 64	123,360	2,490	385,950	1,520	9,600	2,240	1,521	471
65 plus	365,930	5,530	857,150	3,370	21,280	4,970	1,111	327

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Manitoba								
Education level								
Total	**652,270**	**13,530**	**2,097,150**	**8,260**	**52,110**	**12,180**	**1,564**	**486**
Less than high school.	430,120	7,080	1,097,400	4,320	27,240	6,370	1,219	365
Secondary graduate	95,660	2,460	381,300	1,500	9,490	2,220	1,966	628
Some post secondary education	101,490	3,220	499,100	1,970	12,410	2,900	2,446	797
Bachelors degree	17,260	530	82,150	320	2,040	480	2,355	765
Graduate degree	7,730	240	37,200	150	930	220	2,406	783
Gender								
Total	**652,270**	**13,530**	**2,097,150**	**8,260**	**52,110**	**12,180**	**1564**	**486**
Female	335,300	6,610	1,024,550	4,030	25,440	5,950	1,480	457
Male	316,970	6,930	1,074,150	4,220	26,660	6,230	1,652	517
Industry								
Total	**169,030**	**3,380**	**523,900**	**2,060**	**13,020**	**3,040**	**1504**	**465**
Agriculture	3,840	130	20,150	80	480	110	2,513	821
Forestry, fishing, mining, oil and gas	600	10	1,550	10	50	10	1,662	521
Utilities	250	10	1,550	10	40	10	3,376	1,125
Construction	2,530	100	15,500	60	380	90	3,011	996
Manufacturing	10,840	280	43,400	170	1,060	250	1,942	620
Trade	5,110	200	31,000	120	790	180	3,117	1,034
Transport and warehousing	1,920	50	7,750	30	200	50	2,050	658
Finance, insurance, real estate and leasing	760	30	4,650	20	130	30	3,375	1,125
Professional, scientific and technical services	580	10	1,550	10	50	10	1,806	571
Business, building and other support services	1,260	40	6,200	30	160	40	2,614	857
Educational services	710	30	4,650	20	120	30	3,376	1,125
Health care and social assistance	2,120	90	13,950	60	350	80	3,376	1,125
Information, culture and recreation	640	30	4,650	20	110	20	3,375	1,125
Accommodation and food services	3,920	110	17,050	60	400	90	2,052	658
Other services	1,060	30	4,650	20	110	30	2,125	684
Public administration	1,320	50	7,750	30	200	50	3,011	996
Not applicable	**131,590**	**2,180**	**337,900**	**1,330**	**8,380**	**1,960**	**1,226**	**367**
Occupation								
Total	**652,270**	**13,530**	**2,097,150**	**8,260**	**52,110**	**12,180**	**1,564**	**486**
A Management occupation	6,380	240	37,200	150	930	220	2,940	971
B Business, finance and administrative	8,820	370	57,350	230	1,430	330	3,281	1,092
C Natural and applied sciences	2,190	90	13,950	60	370	90	3,375	1,125
D Health occupation	6,450	250	38,750	150	970	230	3,047	1,009
E Occupation in social sciences, education	3,450	140	21,700	80	530	120	3,104	1,029
F Occupations in art, culture, recreation	730	30	4,650	20	120	30	3,376	1,125
G Sales and services occupations	44,490	1,600	248,000	970	6,150	1,440	2,778	914
H Trades, transportation and equipment operation	31,970	1,140	176,700	700	4,390	1,030	2,761	908
I Occupation unique to primary industries	12,710	460	71,300	280	1,790	420	2,826	931
J Occupations unique to processing, manufacturing and utilities	28,770	640	99,200	390	2,460	570	1,680	527
Not employed	**506,300**	**8,560**	**1,326,800**	**5,220**	**32,970**	**7,710**	**1,256**	**378**

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Saskatchewan								
Age group								
Total	**796,000**	**15,290**	**2,369,950**	**9,330**	**58,870**	**13,760**	**1,440**	**443**
16 to 24	57,060	1,680	260,400	1,030	6,470	1,510	2,261	732
25 to 34	52,090	1,430	221,650	870	5,490	1,280	2,095	673
35 to 44	59,560	1,750	271,250	1,070	6,750	1,580	2,259	731
45 to 54	85,610	2,220	344,100	1,350	8,540	2,000	1,977	632
55 to 64	118,800	2,360	365,800	1,440	9,090	2,120	1,493	461
65 plus	422,860	5,850	906,750	3,570	22,540	5,270	1,010	291
Education level								
Total	**796,000**	**15,290**	**2,369,950**	**9,330**	**58,870**	**13,760**	**1,440**	**443**
Less than high school.	482,080	7,210	1,117,550	4,400	27,750	6,490	1,099	322
Secondary graduate	116,790	2,670	413,850	1,630	10,280	2,400	1,733	546
Some post secondary education	164,460	4,450	689,750	2,710	17,130	4,000	2,069	664
Bachelors degree	25,220	720	111,600	440	2,770	650	2,185	705
Graduate degree	7,450	250	38,750	150	950	220	2,554	835
Gender								
Total	**796,000**	**15,290**	**2,369,950**	**9,330**	**58,870**	**13,760**	**1,440**	**443**
Female	409,630	7,440	1,153,200	4,540	28,650	6,700	1,357	413
Male	386,370	7,850	1,216,750	4,790	30,220	7,070	1,529	474
Industry								
Total	**189,410**	**3,680**	**570,400**	**2,240**	**14,160**	**3,310**	**1,456**	**448**
Agriculture	4,940	140	21,700	80	520	120	2,108	678
Forestry, fishing, mining, oil and gas	1,890	60	9,300	30	220	50	2,318	752
Utilities	220	10	1,550	10	40	10	3,375	1,124
Construction	6,110	150	23,250	90	560	130	1,805	571
Manufacturing	8,300	190	29,450	120	730	170	1,734	546
Trade	8,090	280	43,400	170	1,090	250	2,693	884
Transport and Warehousing	6,770	130	20,150	80	500	120	1,447	445
Finance, insurance, real estate and leasing	2,080	70	10,850	40	260	60	2,463	803
Professional, scientific and technical services	1,240	50	7,750	30	210	50	3,375	1,125
Business, building and other support services	2,070	50	7,750	30	200	50	1,867	593
Educational services	2,250	70	10,850	40	280	70	2,493	814
Health care and social assistance	4,320	140	21,700	90	550	130	2,549	833
Information, culture and recreation	1,650	70	10,850	40	250	60	3,061	1,014
Accommodation and food services	4,790	140	21,700	90	550	130	2,269	735
Other services	2,670	80	12,400	50	310	70	2,332	757
Public administration	1,220	50	7,750	30	200	50	3,325	1,107
Not applicable	**130,820**	**2,000**	**310,000**	**1,220**	**7,700**	**1,800**	**1,126**	**332**

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Saskatchewan								
Occupation								
Total	**796,000**	**15,290**	**2,369,950**	**9,330**	**58,870**	**13,760**	**1440**	**443**
A Management occupations	10,050	360	55,800	220	1,400	330	2,794	920
B Business, finance and administrative	22,540	770	119,350	470	2,950	690	2,623	860
C Natural and applied sciences	3,610	150	23,250	90	590	140	3,275	1,089
D Health occupations	8,750	340	52,700	210	1,300	300	2,985	987
E Occupation in social sciences, education	6,050	250	38,750	160	980	230	3,277	1,090
F Occupations in art, culture, recreation	2,070	90	13,950	50	350	80	3,376	1,125
G Sales and services occupations	75,120	2,240	347,200	1,370	8,620	2,020	2,290	742
H Trades, transportation and equipment operation	56,320	1,400	217,000	850	5,390	1,260	1,895	603
I Occupation unique to primary industries	20,100	660	102,300	400	2,550	600	2,541	831
J Occupations unique to processing, manufacturing and utilities	14,110	300	46,500	180	1,150	270	1,599	499
Not employed	**577,290**	**8,730**	**1,353,150**	**5,320**	**33,610**	**7,860**	**1,112**	**327**
Alberta								
Group								
Total	**1,630**	**30**	**4,650**	**20**	**130**	**30**	**1589**	**495**
16 to 24	80	-	-	-	10	-	3,088	1,027
25 to 34	100	-	-	-	10	-	2,439	794
35 to 44	150	-	-	-	20	-	2,447	797
45 to 54	160	-	-	-	20	-	2,253	730
55 to 64	290	10	1,550	-	20	10	1,597	499
65 plus	860	10	1,550	10	50	10	1,087	318
Education level								
Total	**1,630**	**30**	**4,650**	**20**	**130**	**30**	**1,589**	**495**
Less than high school	1,030	20	3,100	10	60	20	1,210	362
Secondary graduate	230	10	1,550	-	20	10	1,891	601
Some post secondary education	280	10	1,550	10	30	10	2,454	800
Bachelors degree	60	-	-	-	-	-	2,463	802
Graduate degree	20	-	-	-	-	-	2,506	814
Gender								
Total	**1,630**	**30**	**4,650**	**20**	**130**	**30**	**1,589**	**495**
Female	870	20	3,100	10	60	20	1,447	445
Male	760	20	3,100	10	70	10	1,751	553

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Continued)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
Alberta								
Industry								
Total	**420**	**10**	**1,550**	**10**	**30**	**10**	**1,553**	**483**
Agriculture	-	-	-	-	-	-	3,227	1,072
Forestry, fishing, mining, oil and gas	10	-	-	-	-	-	2,733	896
Utilities	-	-	-	-	-	-	2,581	785
Construction	10	-	-	-	-	-	3,195	1,025
Manufacturing	20	-	-	-	-	-	1,954	614
Trade	20	-	-	-	-	-	2,480	802
Transport and warehousing	10	-	-	-	-	-	2,749	887
Finance, insurance, real estate and leasing	10	-	-	-	-	-	1,644	519
Professional, scientific and technical services	-	-	-	-	-	-	3,314	1,027
Business, building and other support services	10	-	-	-	-	-	1,546	481
Educational services	-	-	-	-	-	-	3,431	1,173
Health care and social assistance	10	-	-	-	-	-	1,943	604
Information, culture and recreation	-	-	-	-	-	-	1,970	583
Accommodation and food services	10	-	-	-	-	-	2,261	713
Other services	-	-	-	-	-	-	2,494	828
Public administration	-	-	-	-	-	-	3,244	1,004
Not applicable	**300**	**-**	**-**	**-**	**20**	**-**	**1,222**	**365**
Occupation								
Total	**1,630**	**30**	**4,650**	**20**	**130**	**30**	**1589**	**495**
A Management occupation	20	-	-	-	-	-	3,244	1,090
B Business, finance and administrative	40	-	-	-	10	-	2,590	848
C Natural and applied sciences	10	-	-	-	-	-	3,364	1,102
D Health occupation	20	-	-	-	-	-	3,138	1,038
E Occupation in social sciences, education	10	-	-	-	-	-	3,342	1,083
F Occupation in art, culture, recreation	-	-	-	-	-	-	2,236	671
G Sales and services. occupation	160	-	-	-	20	-	2,134	688
H Trades, transportation and equipment operation	100	-	-	-	10	-	2,406	783
I Occupation unique to primary industries	30	-	-	-	-	-	3,083	1,025
J Occupations unique to processing, manufacturing and utilities	40	-	-	-	-	-	1,891	605
Not employed	**1,190**	**20**	**3,100**	**10**	**80**	**20**	**1,273**	**384**
British Columbia								
Age group								
Total	**2,800**	**60**	**9,300**	**30**	**220**	**50**	**1,522**	**472**
16 to 24	140	-	-	-	20	-	2,311	750
25 to 34	120	-	-	-	20	-	2,760	908
35 to 44	230	10	1,550	-	30	10	2,383	774
45 to 54	290	10	1,550	-	30	10	2,118	681
55 to 64	470	10	1,550	10	40	10	1,690	530
65 plus	1,550	20	3,100	10	90	20	1,064	310
Education level								
Total	**2,800**	**60**	**9,300**	**30**	**220**	**50**	**1,522**	**472**
Less than high school	1,530	20	3,100	10	90	20	1,093	321
Secondary graduate	480	10	1,550	10	40	10	1,776	561
Some post secondary education	600	20	3,100	10	70	20	2,170	700
Bachelors degree	130	-	-	-	20	-	2,293	743
Graduate degree	60	-	-	-	10	-	2,302	747

Table 4.3 Costs benefits and rates of return, by province, adults aged 16 and over, Canada, 2005 to 2009 (Concluded)

	Cost of skill upgrading	Total point spread to level 3	Earnings	Employment insurance regular benefits	Social assistance	Workers compensation	Return on investment over 5 years using 100% of earnings	Return on investment over 5 years using 33% of earnings
	Millions of dollars	(000's)	Millions of dollars				Percent	
British Columbia								
Gender								
Total	**2,800**	**60**	**9,300**	**30**	**220**	**50**	**1,522**	**472**
Female	1,280	30	4,650	20	100	20	1,597	498
Male	1,520	30	4,650	20	110	30	1,459	449
Industry								
Total	**700**	**10**	**1,550**	**10**	**50**	**10**	**1,469**	**453**
Agriculture	10	-	-	-	-	-	1,391	429
Forestry, fishing, mining, oil and gas	-	-	-	-	-	-	3,390	1,052
Utilities	-	-	-	-	-	-	3,237	1,001
Construction	20	-	-	-	-	-	2,733	879
Manufacturing	20	-	-	-	-	-	2,066	663
Trade	20	-	-	-	-	-	3,109	1,026
Transport and warehousing	10	-	-	-	-	-	2,291	717
Finance, insurance, real estate and leasing	10	-	-	-	-	-	3,133	1,016
Professional, scientific and technical services	-	-	-	-	-	-	3,372	1,114
Business, building and other support services	20	-	-	-	-	-	1,345	404
Educational services	10	-	-	-	-	-	2,985	970
Health care and social assistance	10	-	-	-	-	-	2,589	839
Information, culture and recreation	10	-	-	-	-	-	2,094	662
Accommodation and food services	20	-	-	-	-	-	2,518	808
Other services	10	-	-	-	-	-	1,853	574
Public administration	-	-	-	-	-	-	3,348	1,038
Not applicable	**530**	**10**	**1,550**	**10**	**30**	**10**	**1,184**	**353**
Occupations								
Total	**2,800**	**60**	**9,300**	**30**	**220**	**50**	**1,522**	**472**
A Management occupation	40	-	-	-	10	-	2,723	890
B Business, finance and administrative	60	-	-	-	10	-	2,941	969
C Natural and applied sciences	10	-	-	-	-	-	3,334	1,077
D Health occupation	20	-	-	-	-	-	2,963	986
E Occupation in social sciences, education	20	-	-	-	-	-	3,225	1,072
F Occupation in art, culture, recreation	10	-	-	-	-	-	3,254	1,069
G Sales and services occupation	220	10	1,550	-	30	10	2,337	758
H Trades, transportation and equipment operation	140	-	-	-	20	-	2,409	784
I Occupation unique to primary industries	40	-	-	-	-	-	1,966	629
J Occupations unique to processing, manufacturing and utilities	50	-	-	-	10	-	1,915	610
Not employed	**2,190**	**40**	**6,200**	**20**	**140**	**30**	**1,263**	**380**

- Amount too small to be expressed.

Source: 2003 IALSS and 2005 to 2009 SLID.

Annex C Methods Employed to Link the SLID and IALSS Datasets

Exploring the relationships between literacy and benefit receipt required the imputation of literacy scores and literacy market segments onto the SLID files.

This Annex provides an overview of the methods that were used to impute literacy scores and literacy market segments on to the SLID files, how literacy demand levels were derived, and how remedial costs and estimated benefits of eliminating literacy skill shortages were estimated and how rates of return were estimated.

The overall goal of the analysis was to impute a literacy score for each individual on the SLID files for 2005 to 2009 for respondents aged 16 and over. The imputations were based on a selection of personal characteristics that are associated with literacy scores such as age, gender, education, city size, immigration status, province, type of employment and occupation.

Using the relationships revealed in the IALSS analysis determined the best estimate of an individual's literacy score and the chances that they would be at prose literacy levels 1, 2, 3, 4 or 5.

The analysis relied on individual records from six databases:

- The International Adult Literacy and Skills Survey (IALSS) for 2003.
- The 2005-2009 SLID individual micro data files for Canada.

Analysis of the IALSS data

The IALSS data were used to perform a regression of prose literacy level on predictor variables. The regression was done for those individuals who had valid responses for all the variables of interest.

The dependent variable was the average of the 5 estimates of prose literacy provided by the IALSS file. The results of these regressions gave regression coefficients that were subsequently used to predict the likely literacy scores of individuals on SLID.

Independent variables were selected that previous analysis had shown to be important predictors of literacy skill (Desjardins, 2004). Additionally independent variables had to be available on both the IALSS and SLID and had to be codeable in a consistent fashion.

The coding of variables in IALSS was changed from previous runs so that it could be consistent with SLID coding.

On SLID immigration status was only available for residents of a Census Metropolitan Area (CMA), so a variable was created with combined CMA and immigrant status.

The regression coefficients are presented in the attached table. There were 16,286 observations in the regression and the resultant R^2 was 40%.

Regression analysis of average prose literacy: Cofficient for each variable compared to reference

Group	
Intercept	224
Female	5
Male	Reference group
Less than high school	-51
Secondary graduate	-23
Some post secondary education	-13
Bachelors degree	-3
Graduate degree	Reference group
16 to 24	47
25 to 34	32
35 to 44	23
45 to 54	25
55 to 64	16
65 and over	Reference group
Newfoundland and Labrador	-20
Prince Edward Island	-18
Nova Scotia	-11
New Brunswick	-23
Quebec	-20
Ontario	-11
Manitoba	-9
Saskatchewan	-7
Alberta	-8
British Columbia	Reference group
Non – CMA	39
CMA – Non-Immigrant	38
CMA – Immigrant	Reference group
Employed full-year	4
Non-Employed	-1
A Management occupations	25
B Business, finance and administration	22
C Natural and applied science	34
D Health occupations	11
E Occupations in social science	25
F Occupations in art, culture	24
G Sales and service occupations	13
H Trades, transport and equipuipment	11
I Occupations unique to primary industries	7
J Occupations unique to processing	Reference group

These regression coefficients are used for imputing literacy scores on the 500 point IALSS prose literacy scale on to micro data records from the 2005 to 2009 SLID files.

Imputation of prose literacy scores

Using SLID microdata files the best estimate of prose literacy score was determined for each individual based on their individual characteristics; age, gender, education, city size, immigration status, province, type of employment and occupation.

After generating this best estimate and the adjustment was made for the local literacy level as described above.

Once the best estimate is determined, individual values are generated by simulating possible values using a normal distribution with mean equal to the best estimate and using a variance based on the Mean Squared Error of prediction. As well, a set of 10 possible literacy values were generated for each individual so one could determine the probability that they were at level 1, 2, 3, 4 or 5.

After imputation the imputed distributions of prose literacy and the proportions of the population at various literacy levels was compared to the IALSS results. The following chart and associated table reveals that the distribution of average literacy scores by occupation from the two sources are in close agreement.

The imputation procedure generated:

- An imputed Literacy Level which is one of 1-5.
- A Literacy Score roughly between 100 and 500 which is consistent with the level.
- An estimate of the confidence level associated with these imputed values.

Two forms of regression are used to generate the imputed values:

- Logistic regression where the dependent variable is the Literacy Level (1-5).
- Ordinary Least Squares regression where the dependent variable is the Literacy Score.

To assist in the imputation, the IALSS data were used to compare the percentiles of actual scores to percentiles of predicted Literacy Values.

- Using the IALSS survey the actual Literacy Scores are compared to predicted values (based on the OLS Regression).

- This is done within each Literacy Level so one can compare the percentiles of the actual scores associated with the percentiles of the predicted values.

The imputation procedures for each individual on the SLID microdatafiles are as follows:

- A Literacy Level (1-5) is imputed based on the Logistic Regression Coefficients. The imputed value is random using not only the coefficients but also the variance/covariance matrix.
- A preliminary Literacy Score is imputed based on the OLS Regression. This score may not be in the appropriate range for the imputed Literacy Level.

This preliminary Literacy Score is converted into a final score as follows:

- The preliminary Literacy Score is converted into a percentile of predicted scores (based on the IALSS analysis) within the imputed Literacy Level.
- This percentile level is used to pick an actual score from the IALSS at this percentile level, within the Literacy Level.
- This actual score is the imputed Literacy Score.
- This imputation is repeated 10 times so that a variance in the various Literacy Scores and levels can be estimated.

Imputation was based on Regressions with the following Covariates:

Gender

Educ_Level : 5 Categories

Age Group

Province

Employed Full-Year (Yes / No)

Occupation ; 10 Categories

CMA and Immigrant Status: Non-CMA, CMA - Non-Immigrant, CMA – Immigrant such as age, gender, education, mother tongue, city size, immigration status, province, type of employment and occupation.

Estimating benefits

A series of logisitic regression analyses were performed to reveal the relationship between annual earnings, benefit receipt and literacy. Results were quantified in dollarincrease or decrease per literacy point gained. These relationships were multiplied by the number of points needed to eliminate literacy skill shortage to yield estimates of the earnings gain and program savings.

Estimating rates of return

Two simple rates of return on investment were derived. The first was derived by dividing the sum of estimated earnings gains and program savings for a 5 year period by the estimated costs of eliminating literacy skill shortages.

The second rate of return estimate was derived by adding one third of the estimated earnings gain to the estimated program savings and then dividing by the estimated costs of eliminating literacy skill shortages.

Canadian Literacy and Learning Network is the national hub for research, information and knowledge exchange, increasing literacies and essential skills across Canada. CLLN, a non-profit charitable organization, represents literacy coalitions, organizations and individuals in every province and territory in Canada.

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