INCOME DETERMINANTS AND FACTORS AFFECTING THE CHOICE OF SELF-EMPLOYED CANADIANS TO INVEST IN RRSPs AND HEALTH-RELATED BENEFITS: AN EMPIRICAL ANALYSIS AND POLICY REFLECTION

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Abstract

Self-employment in Canada has risen dramatically over the past three decades, accounting for a disproportionate share of jobs created in the early 1990s. The macroeconomic gains from self-employment have inspired much research, with numerous studies examining driving forces behind the engagement in entrepreneurship. A very few studies have examined entrepreneurs' socio-economic security. Using microdata files from the Survey of Self-Employment, 2000, this study employs a series of binomial logistic regressions to examine earnings determinants and factors influencing the likelihood of self-employed Canadians to own Registered Retirement Savings Plans (RRSPs) and health-related benefits coverage. Two policy-related issues surfaced: (1) the vulnerable segments include women, own-account entrepreneurs, involuntarily self-employed, low-tenure entrepreneurs, and self-employed with dependent children; (2) income, wealth, savings behaviour, and membership in associations are significant factors that resurface repeatedly in benefits models. Combined with previous research, these findings have inspired several policy options, discussed at the end of this report.

Keywords: self-employment in Canada; own-account entrepreneurship; earnings determinants; RRSP participation; health-related benefits coverage; government policy framework.

Executive Summary

The prosperity of Canadian entrepreneurs, Canadian communities and the Canadian economy are inextricably linked. When entrepreneurs prosper, Canada's tax base expands, employment grows, public dependence declines, and local communities thrive. At present, however, the socio-economic status of many Canadian entrepreneurs is close to the poverty line. Perplexed by the heterogeneous nature of the self-employed population, Canadian governments are currently stuck with an outdated policy framework — to encourage the growth of self-employment and to assist in the transition from unemployment into self-employment.

This policy framework is likely to require significant amendments soon, given the rapid growth of self-employment among women and other designated groups. As in the paid labour market, these vulnerable segments of the Canadian population are unlikely to be able to handle the challenges that come with "being one's own boss" successfully. Lack of a social safety net, for instance, presents a significant challenge even for well-off entrepreneurs. Therefore, the need for government intervention is likely to grow with the growth in self-employment.

The primary objective of this study is to shed some light on the income determinants and other factors affecting the likelihood of self-employed Canadians to own RRSPs and health-related benefits coverage. The study makes an attempt to isolate the vulnerable segments by estimating separate statistical models for self-employed men and self-employed women. A closer look is also given to low-tenure, involuntarily self-employed, and own-account entrepreneurs by incorporating these classifications into each model.

Using the theory of social and human capital as a conceptual framework, the income model used in this study was constructed to investigate the factors associated with self-employed earnings. The RRSP model was designed to explore the effects of wealth, risk orientation, and other attitudinal and personal factors on the likelihood of a self-employed individual to own an RRSP account. The benefits model examined the relative impact of income and substitution effects on a self-employed individual's likelihood to acquire health-related benefits coverage. A series of binary logistic regressions were run, controlling for a range of personal and job-related factors.

Key Findings

- **Gender Aspect:** The results indicate that self-employed men fare significantly better than self-employed women in almost every aspect analyzed in this paper.

- **Current Income and Past Financial Difficulties:** Earning an income below $40,000 makes one significantly less likely to own an RRSP account or to purchase disability insurance. Also, having experienced financial difficulties in the past significantly lowers one's likelihood of having an RRSP account. These findings are gender-neutral, and they hold true even when controlling for other related factors such as risk attitude.

- **Wealth and Savings Behaviour:** Having other forms of savings and investment, as well as having assets in a home or business, is positively related to RRSP participation. The same relationship surfaces in the health-related benefits coverage model.

- **Social Capital:** Membership in a professional or other association makes a positive difference with respect to most aspects of the self-employed's socio-economic well-being analyzed in this paper.

- **Legal Structure of Business:** The likelihood of earning an income of $40,000 or more, as well as owning an RRSP account and health-related benefits coverage, increases significantly if one has employees rather than being an own-account entrepreneur.

- **Self-Employment Choice:** Entering self-employment involuntarily, as opposed to voluntarily, significantly lowers one's chances of earning $40,000 or more per year and of owning an RRSP.

- **Tenure of Current Self-Employment:** The likelihood of making an annual income of $40,000 or more and the likelihood of having disability insurance are significantly lower for those who have been self-employed for 9 years or less, compared to those who have been self-employed for 20 years and more.

- **Dependent Children in Household:** Self-employed women with children below age 15 and self-employed men with children below age 6 are significantly less likely to have health-related benefits coverage.

Lessons Learned

The results of this study indicate that assisting in the transition into self-employment is insufficient to ensure the economic self-sufficiency of the self-employed and is particularly not enough to stimulate job creation in the self-employment sector. Incentives that encourage social networks and improve the savings habits of the self-employed appear promising given the fact that membership and wealth are positively related to all aspects analyzed in this paper. Also, government policy should target female and own-account entrepreneurs, the involuntarily self-employed, low-tenure entrepreneurs, and the self-employed who have children below age 15.

Policy Implications

Combining the above results with previous research, this paper proposes an alternative policy framework, deemed to better reflect the current circumstances and better meet the future challenges of self-employed Canadians. The two aspects highlighted in the previous paragraph were the guiding principles in selecting policy options. After assessing the selected options based on a fixed set of economic, equity, political, and administrative criteria, a bundle of viable policy options is recommended to be implemented in a sequential order.

The first two options from this bundle involve (1) improving access to resources through expanding business training and mentoring services for the existing vulnerable segments of the self-employed population, and (2) improving the financial literacy levels of self-employed individuals and removing information asymmetry from the self-employed sector. Because implementing them involves a minimum level of administrative complexity, these two options are recommended as short-term solutions.

The next recommended step involves removing existing barriers by (1) introducing savings incentives for low-income entrepreneurs, and (2) initiating further research that can inform the extension of the eligibility criteria for special benefits under EI to the self-employed. The first of these options is recommended for short-term consideration because similar frameworks are already in place and the policy already has a reputation as a viable tool for fighting poverty. Because extending EI involves a considerable fiscal burden and administrative complexity, only rigorous further research and policy development is recommended with respect to this option.

Dedication

Because my life is filled with so many good people, singling one out represents a challenge for me. My husband Zijad and our daughters Lejla and Emina and my mom Hanifa all deserve this honour for their unconditional support and for all the chocolates they supplied during this study.

However,

I dedicate this work to my father, Rifet Durakovic

In eternal gratitude

For effectively planting the desire for knowledge in me,

For giving me the compass, and

For strengthening my wings all the way under all circumstances.

"Hvala Babo"

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List of Acronyms and Abbreviations

HRSDC	Human Resources and Skills Development Canada
IC	Industry Canada
LFS	Labour Force Survey
RPPs	Registered Pension Plans
RRSPs	Registered Retirement Savings Plans
SEA	Self-Employment Assistance Program
SEI	Self-Employment Initiative Option
SSE	Survey of Self-Employment
TPSPs	Tax-Prepaid Savings Plans
UI / EI	Unemployment Insurance / Employment Insurance

1 Introduction

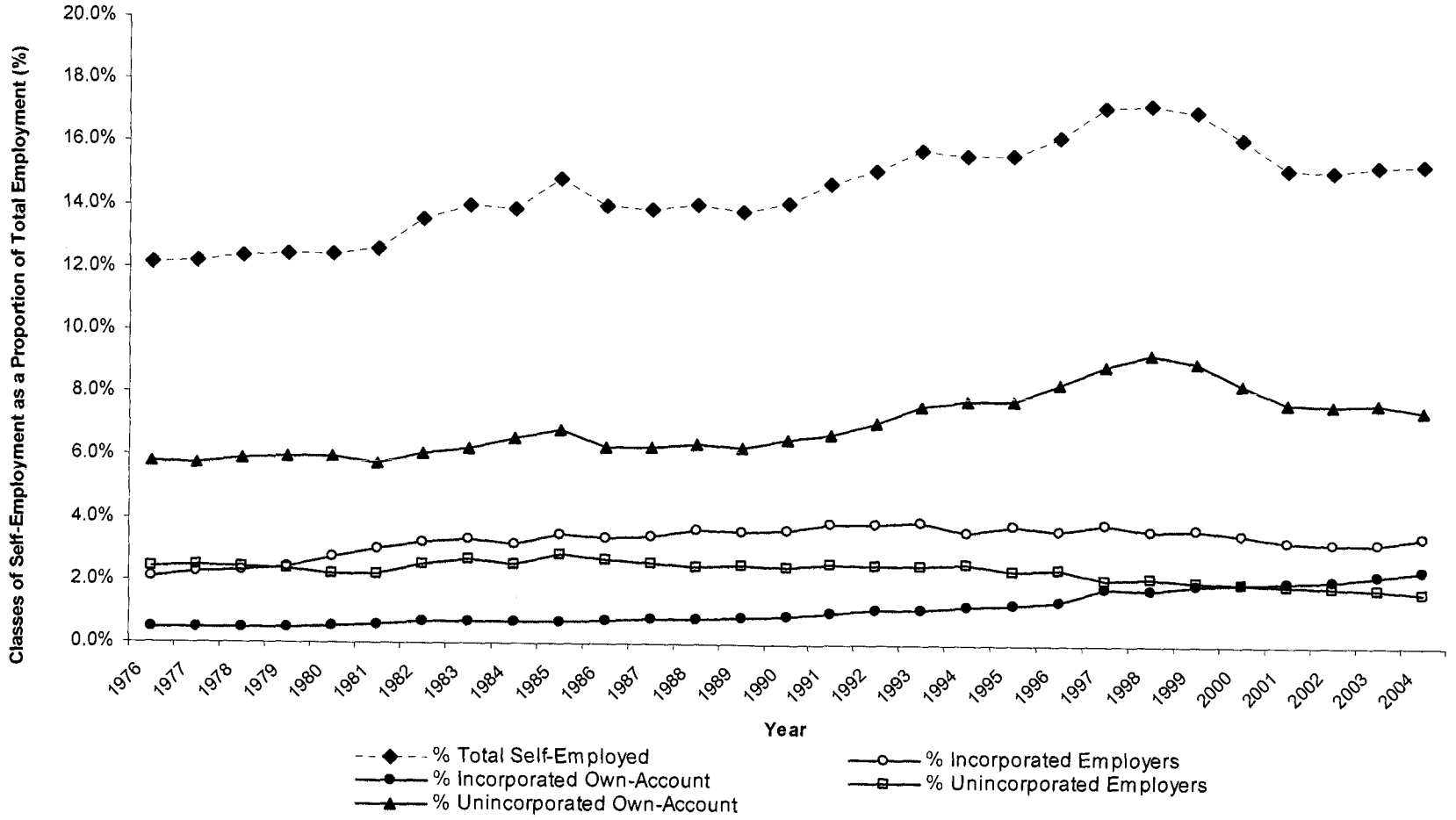
> *"The Government will also work with provinces to update labour market programming to better reflect the realities of work in the 21st century, such as the growth of self-employment and the need for continuous upgrading of skills"* (Speech from the Throne to open the Third Session of the Thirty-Seventh Parliament of Canada, February 2, 2004).

Like the aging of the population, the rapid expansion of self-employment has become a global phenomenon, attracting significant research attention, particularly in the member countries of the Organisation for Economic Co-operation and Development (OECD[1]). Using comparative time series and microdata evidence from some OECD countries, Blanchflower (1998) found that self-employment rates across countries differ significantly, yet tend to increase with age everywhere. Excluding the United Kingdom, Portugal, and New Zealand, the overall trend in self-employment at the economy level was down prior to the 1970s. While the downward trend continued for the agricultural sector in all countries, self-employment in non-agricultural sectors grew rapidly in most countries after 1970, with Canada and Germany leading the way.

Self-employment in Canada is an increasingly important component of the modern labour market. The upward trend was first noticed in the early 1970s, with the most dramatic expansion happening in the early 1990s — a jump from 12.2 percent of total employment in 1976 to 17.3 percent in 1998. As illustrated in *Figure 1*, self-employment went down by 1.9 percentage points from 1999 to 2002, leaving the 2002 rate only 0.2 percentage points above the 1992 rate. The trend, however, resumed its upward direction after 2002; in 2004, close to 2.5 million Canadian workers reported being self-employed. This constitutes over 15 percent of total employment in Canada. Most estimates predict a steady upward trend in self-employment for the coming decade (HRDC, 2000; Tal, 2004).

[1] The OECD is a group of 30 countries whose membership is limited to countries with a free market orientation and a democratic governance system. The membership has recently expanded from a core of original members in Europe and North America to include Japan, Australia, New Zealand, Finland, Mexico, the Czech Republic, Hungary, Poland, and South Korea (OECD, 2000).

Figure 1: Growth in Self-Employment as a Percentage of Total Employment: 1976 - 2004



Source: Statistics Canada, CANSIM Table 282-0012. Labour force survey estimates (LFS), employment by class of worker, North American Industry Classification System (NAICS) and sex, annual (Persons), 1976-2004. For further details refer to Labour Force Survey 3701.

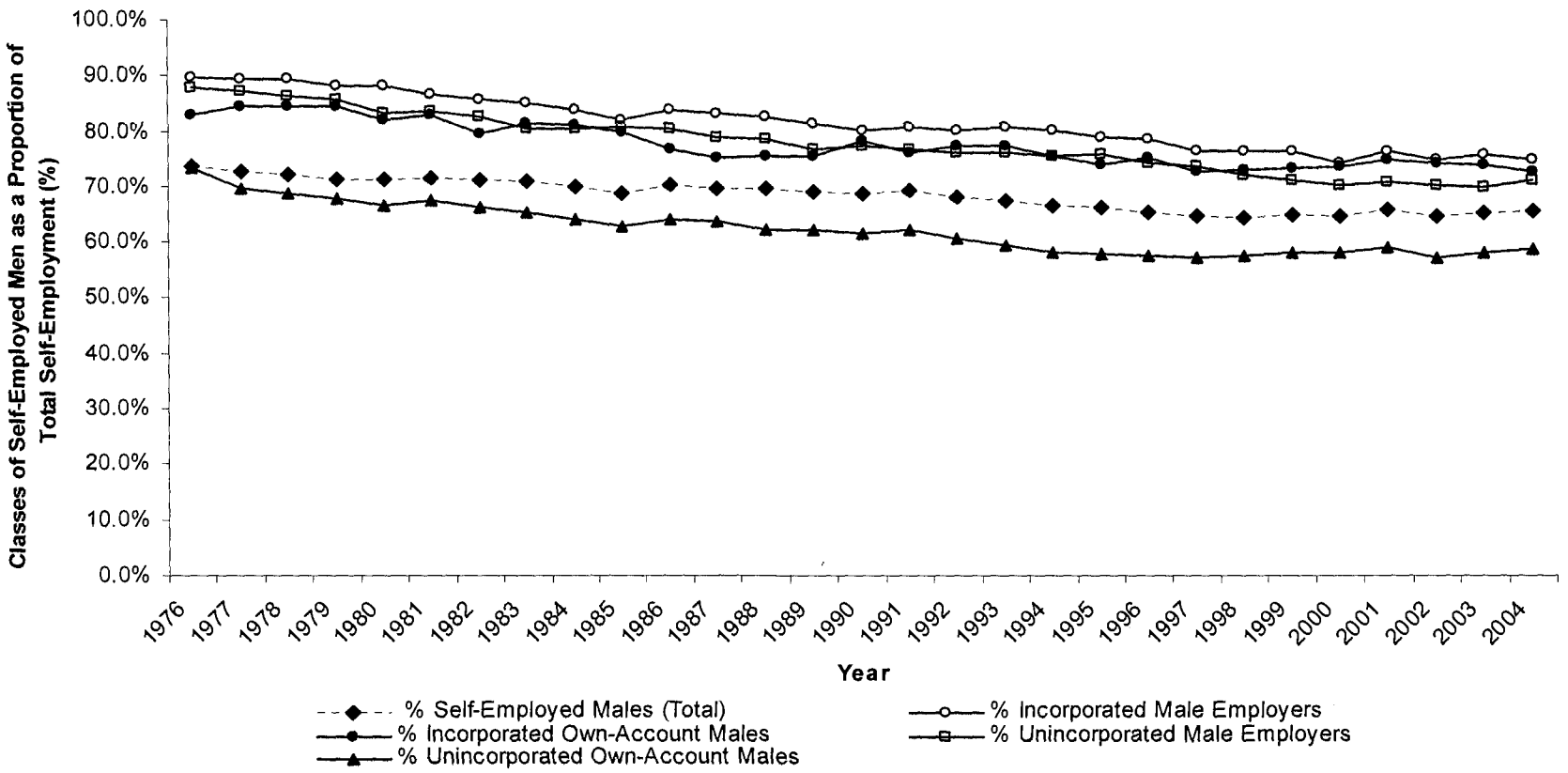
Aside from showing the overall growth rate, *Figure 1* also highlights the divergences in growth trends between different classes of self-employment. While the percentage of the work force who were self-employed employers grew steadily from the early 1980s, that percentage went down in the following decade, particularly for unincorporated self-employed employers[2]. After steady growth from the mid-1970s, own-account self-employment, on the other hand, showed a sharp upward turn in the 1990s. While unincorporated own-account self-employment dropped by 1.3 percentage points between 1999 and 2002, incorporated own-account self-employment continued its upward progress. Starting from 0.5 percent in 1976, incorporated own-account entrepreneurs now account for 2.4 percent of total employment in Canada.

Gender distribution in the self-employment sector has changed as well over the same time period. As plotted in *Figure 2*, self-employed men accounted for about 74 percent of the self-employed population in 1976. By 2004, the proportion of self-employed men decreased to about 66 percent. The highest concentration of self-employed men is still in the class of incorporated employers, about 75 percent. About 59 percent of unincorporated own-account entrepreneurs are men. This represents a decrease of about 15 percentage points from 1976 for each class. The greatest fluctuations were in the incorporated own-account male class.

Unlike self-employed men, self-employed women have experienced steady growth in all classes of self-employment during the past few decades. As shown in *Figure 3*, self-employed women represented about 26 percent of the self-employed population in 1976. By 2004, the proportion of the self-employed who were women had grown to over 34 percent. In 2004, self-employed women represented over 40 percent of the unincorporated own-account class. There has also been a notable increase in the proportion of self-employed employers who are women. Starting from about 10 percent in 1976, females now represent about 25 percent of incorporated self-employed employers. Similarly, females now account for about 29 percent of unincorporated employers, a significant increase from 12 percent in 1976.

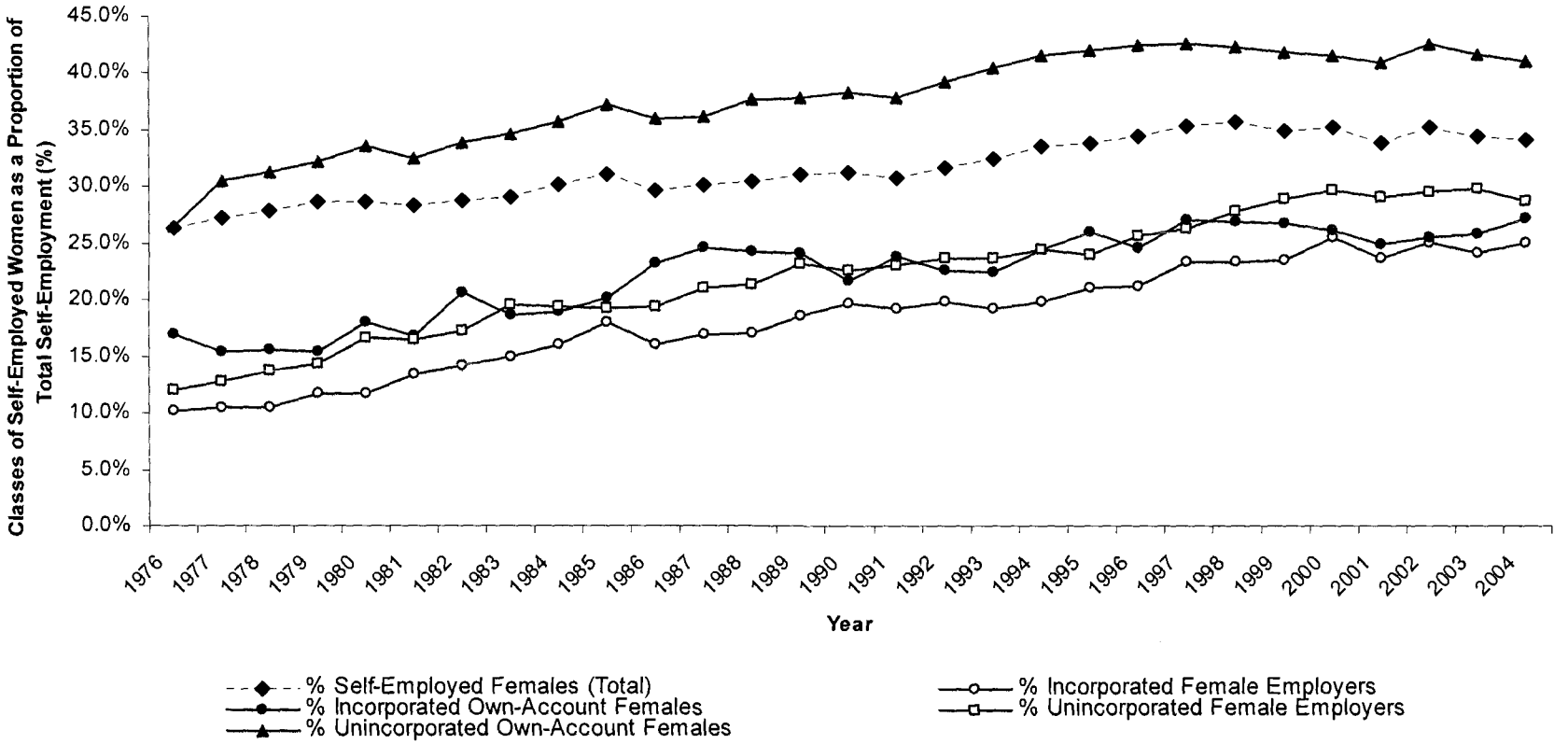
[2] Self-Employed Employers are "working owners of an incorporated or unincorporated business, farm, or professional practice who had employees." The Own-Account Self-Employed are "working owners of an incorporated or unincorporated business, farm, or professional practice who had no employees" (Statistics Canada, Labour Force Survey, 3701).

Figure 2: Trend in Self-Employment Among Canadian Men: 1976 - 2004



Source: Statistics Canada, CANSIM Table 282-0012. Labour force survey estimates (LFS), employment by class of worker, North American Industry Classification System (NAICS) and sex, annual (Persons), 1976-2004. For further details refer to Labour Force Survey 3701.

Figure 3: Trend in Self-Employment Among Canadian Women: 1976 - 2004



Source: Statistics Canada, CANSIM Table 282-0012. Labour force survey estimates (LFS), employment by class of worker, North American Industry Classification System (NAICS) and sex, annual (Persons), 1976-2004. For further details refer to Labour Force Survey 3701.

Driven by scientific curiosity, a number of scholars have attempted to determine the causes for the increase in self-employment and its tangible effects on the Canadian economy. The analytical focus has largely been on growth forces and the demographic makeup of the self-employed[3]. Using different data sets, several studies have examined whether workers are "pushed" into self-employment due to the lack of full-time paid work, or "pulled" in by perceived opportunities in the self-employment sector (Lin et al., 1999; Moore & Mueller, 2002). Some studies have also looked at the impact of self-employment decisions on earnings (Simpson & Sproule, 1998; Devlin, 2001) while the examination of factors contributing to retirement preparedness and health-related benefits coverage among the self-employed was largely ignored (Palameta, 2003; Akyeampong & Sussman, 2003).

Although understanding the growth trend and the tangible contributions of self-employment to the Canadian economy is certainly important, an equally meaningful although largely unexamined research question relates to the sustainable socio-economic well-being of self-employed Canadians. The primary purpose of this study is to explore income determinants and factors affecting the likelihood of self-employed Canadians to own RRSPs and health-related benefits coverage. Understanding these aspects of self-employment is important for policy makers given the increasing evidence suggesting that self-employment is becoming a preferred career choice for the older and socially marginalized segments of the Canadian population.

The report is structured in the following way; Section 2 elaborates more on the above statement and summarizes the evolving policy issues related to self-employment in Canada. Section 3 describes the role of governments and gives an overview of the current policy framework. Sections 4 and 5 explain the analytical framework for the current empirical analysis, including the data source, the econometric models and the estimation procedure. Section 6 presents the empirical results for each model. Section 7 provides discussion on the statistically significant factors common to all models and the policy implications arising from them. Section 8 provides

[3] For instance, using the Survey of Labour and Income Dynamics, Lin et al. (1999) examined the extent and cyclicality of self-employment entry and exit flows and the factors driving the transitions to and from self-employment. Similarly, using the Survey of Consumer Finances, Kuhn & Schuetze (2001) examined transition patterns and labour market conditions from 1982 to 1998. Moore & Mueller (2002) used data from the Canadian Labour Market Activity Survey to examine determinants of self-employment growth, focusing particularly on the "push" factors. A more general exploration of growth determinants was done by Papadaki & Chami (2002), while Manser & Picot (1999) compared the characteristics of self-employment growth between the U.S. and Canada.

policy analysis, including the analytical framework and suggested policy options. Section 9 concludes the study.

2 Evolving Self-Employment Policy Issues

2.1 Diversity and Job Satisfaction

Studies show that, in general, self-employed individuals tend to report higher levels of job satisfaction relative to paid workers (Blanchflower, 1998). This seems to hold true even when their earnings do not compare to those of paid workers in the same field. Hamilton (2000), for instance, found that most entrepreneurs are willing to sacrifice substantial earnings in exchange for the non-pecuniary benefits of being one's own boss.

Self-employment, however, is an ambiguous term covering a broad array of workers who do not fit into the standard employment model. The term is often used interchangeably with own-account entrepreneurship (Earle & Sakova, 1998; Hamilton, 2000) as well as with the small-to-medium enterprise or microenterprise sector (Papadaki & Chami, 2002). The range of self-employed workers includes working owners of incorporated businesses with and without employees working owners of unincorporated businesses with and without employees, as well as other self-employed individuals and unpaid family workers.

While many of the self-employed are highly skilled and highly educated professionals with a high earnings potential, a sizable component is made up of entrepreneurs with less than a high school education earning an income that is close to the poverty line (Townson, 2003; Fleury & Fortin, 2004; Chaykowski, 2005). This makes the above statement regarding the non-pecuniary benefits of self-employment rather vague; one would expect that the willingness to forgo a portion of earnings in exchange for a sense of self-satisfaction derived from business ownership would be highly correlated with one's earnings potential.

Indeed, Falter (2002) found that the extra satisfaction felt by the self-employed relative to people in the paid workforce is derived solely from job characteristics; when it comes to earnings, the self-employed report lower satisfaction than paid employees. Many of the self-employed have unrealistic expectations, which could be related to the high levels of self-reported job satisfaction.

Arabsheibani et al. (2000) found that the self-employed are much more liable to excess optimism relative to those in the paid workforce. Their forecasts about financial outcomes are unambiguously better than employed workers' forecasts, and their realizations are unambiguously worse than those of paid employees.

2.2 Desire vs. Necessity

Studies also show that the search for independence and self-actualization is often listed as the primary reason why individuals decide to enter into self-employment (Lin et al., 1999; Moore & Mueller, 2002; Blanchflower, 1998). This, however, has not been identified as the universal drive — a large proportion of the self-employed choose this route out of necessity, often as a way to escape poverty or systematic discrimination found in the paid labour market (Frenette, 2002; Hundley, 2000; Li, 1997; Hughes, 1999).

Aboriginal entrepreneurs are the primary example of a segment of the Canadian population fleeing discrimination in the paid labour market, often with limited success (Li, 1997). New immigrants, particularly those with visible minority status, represent another instance where various forms of market failure and discrimination have left self-employment as the only viable option. Recent studies have revealed that poor prospects in the Canadian paid labour market have forced recent immigrants to look for alternatives. Frenette (2002), for instance, found that the 1990s cohort of immigrants was far more likely to turn to self-employment than were those who arrived in previous decades. Li (2001) added that immigrants' propensity to pursue self-employment increases with the length of residence in Canada, and that self-employment is often used as the only route to upward mobility by those immigrants possessing entrepreneurial capital.

The need to balance work and family has forced many women to choose some form of non-standard work, self-employment being increasingly the preferred option (Mincer & Polachek, 1974; Hundley, 2001). This motive is often mixed with other, related issues such as the flight from gender-based and other discriminatory measures present in the paid labour market (Bates, 2004). Similar forces have influenced disabled Canadians to choose self-employment as a preferred career option (Okahashi, 2001; Beatty, 2003; HRSDC, 2004).

Youth and older Canadian entrepreneurs are found on both sides of the motivational spectrum. The 55 and older cohorts who choose this route as a transition to retirement are often well suited for self-employment with respect to human capital capacity as well as economic security. A number of older workers, however, are self-employed out of a need to supplement pension income (Li, 2001). The necessity arises particularly for older women who have experienced employment disruptions due to layoffs or the need to attend to family obligations (Zissimopoulos & Karoly, 2003). Similarly, some youth with high entrepreneurial fortitude are pulled into self-employment by the perceived opportunities in niche markets. Others, however, use this option to gain work experience before entering the paid labour market (Devlin, 2001; Finnie, 2002).

2.3 Job Satisfaction Readdressed

Non-wage benefits such as extended health, dental, and pension plans are a basic element in employee compensation and security in the paid labour market. These employer-sponsored benefits are an important component of a "good job," contributing to workers' current and future well-being and supplementing the basic coverage provided through government programs. Recent estimates show that about 55 percent of Canadian employees in the standard labour market are entitled to an employer-sponsored pension plan or group Registered Retirement Savings Plan other than the Canada or Quebec Pension Plans. About 63 percent are entitled to an extended health plan, while 59 percent have a dental plan (Reesor & Lipsett, 1998).

Unlike paid workers, the self-employed must plan for their own retirement by making personal investments, almost exclusively through Registered Retirement Savings Plans (RRSPs). Alternatively, they have to rely heavily on their business equity and their personal savings or investment assets for post-retirement income (Palameta, 2003). Studies have shown that high thresholds for risk-tolerance and desires to grow their businesse have encouraged the self-employed to neglect planning and setting aside their retirement funds (Devaney & Chien, 2000).

The options facing self-employed individuals with respect to health-related benefits coverage are also largely limited to personal purchases and spousal entitlements. Personal purchases, according to recent data, are rare; the majority of the self-employed risk going uninsured if they cannot acquire coverage through a significant other (Akyeampong & Sussman, 2003).

While securing these benefits may not be as difficult for some Canadian entrepreneurs, it can represent a great challenge for those less well off financially (Saunders, 2006). Like paid work, self-employment has become increasingly polarized, with some entrepreneurs performing well and others performing poorly. This is especially true with respect to gender. As Hughes (1999) notes, the earnings gap between men and women is more pronounced in self-employment than in the paid labour market. Being a self-employed male, however, is not sufficient for financial success. In fact, there is ample evidence showing that the self-employed, regardless of gender, are frequently found on the low-income-earners list[4] (Townson, 2003; Fleury & Fortin, 2004).

2.4 The Policy Problem

The existence of the above challenges creates a clear rationale for government policy intervention. There is currently no social safety net for self-employed individuals. In fact, under current legislation, the self-employed are not even considered "employees" and as such are excluded from the protection and benefit of many government programs (Government of Canada, 2005a). Left on their own, too few of the self-employed are engaged in adequate retirement preparations, and too few have adequate health-related benefits coverage[5]. This implies that both the short and long-term economic security of the self-employed may be compromised unless policies are developed to ensure they are accommodated in public programs that protect their current and future economic self-sufficiency and promote their equality.

Government officials quote the immense diversity among the self-employed as the main reason for the failure to address this issue (HRDC, 2001; Government of Canada, 2005a). If the issue continues to be ignored, however, further growth in the number of self-employed people under the present circumstances will pose major challenges for public funds in the future. Efficiency is only one aspect of this issue — equity complaints are also likely to escalate in the absence of policy intervention. As pointed out earlier, self-employment is increasingly becoming the primary career choice for the most disadvantaged segments of Canada's population such as

[4] In examining working poor in 2001in Canada, Fleury and Fortin (2004) find that if a worker has had at least one period of self-employment during the year, the percentage of probability that s/he may have a low family income that year increases by 8.3 points compared to a worker who has never been self-employed. It is interesting to note that the predicted probability of low-income among recent immigrants or Aboriginal people living off reserve is only 4.7 points, almost half less than in the self-employed case.

[5] Inadequacy here refers to both the lack of benefits or pension preparation and lack of proper portfolio diversification, relative to paid workforce.

women, new immigrants, Aboriginal peoples, and visible minorities. The rapid inflow of aging baby boomers into self-employment only adds to the necessity to address this issue promptly[6].

[6] Recent evidence shows that people in the 45-to-65 age group are the most likely to become self-employed. This is expected to be the fastest growing age group among the self-employed over the next decade. Older women and older immigrants are already leading the way (Charron & Piche, 2005).

3 The Role of Government

3.1 Historical Overview

Canadian governments paid little attention to self-employment in the early 1980s. The situation changed at the outset of the following decade, and self-employment incentive programs received wide support at both the federal and provincial level (Wong et al., 1998). At present, small businesses are considered to be "engines of economic growth," playing a critical role particularly with respect to employment creation (Schuetze & Bruce, 2004). The early 1990s expansion, for instance, was credited for over three-quarters of all new jobs that the economy created during that decade[7] (Lin et al., 1999). The latest reports indicate that this sector accounts for about 43 percent of the GDP and continues to create most new jobs (Charron & Piche, 2005).

Inspired by the outcomes of the early 1990s, governments across Canada have put in place various measures to support the growth of self-employment. The trend was mainly seen as an opportunity to lower the dependence on public funds; hence, special efforts were made to assist the transition of the unemployed into self-employment. The unique circumstances of some of the designated groups were also recognized by the introduction of specialized programs for women, Aboriginal, and developmentally disabled entrepreneurs. In addition to financial support, the self-employment programs offer skill training, assistance in researching the viability of business ideas, as well as assistance in developing and implementing business plans (Wong et al., 1998).

3.1.1 The Self-Employment Incentive Option

Established in 1987, the Self-Employment Incentive (SEI) option was designed to promote "labour market self-sufficiency through self-employment." The option was funded fully through

[7] During the 1980s, the economy created over two million new jobs. The expansion in self-employment contributed very little to this net employment gain — the growth in the paid employment sector accounted for 82.7 percent of it. The situation reversed in the following decade. "In the first eight years of the 1990s, the labour market expanded by a total of 775 thousand jobs (5.9%). Of this total net job growth, over three-quarters (nearly 600 thousand or 77.2%) were created in the self-employed sector" (Lin et al., 1999:1).

the General Revenues of the federal government and delivered exclusively through Community Futures agencies. The option targeted welfare recipients and unemployed Canadians.

The SEI option provided income support and access to free business counselling to eligible participants for up to one year, during which time they would have to launch their business operation. The income component of this option involved a weekly taxable allowance or a grant of $180, which was raised to $230 in 1991. To be eligible, applicants had to be in receipt of or entitled to Unemployment Insurance (UI) or welfare benefits at the time of application, have an approved business plan, and have an equity stake of at least 25 percent of the benefit entitlement. The successful applicant also had to be a resident of a designated higher unemployment rural Community Futures area and agree to work full-time, at least 30 hours per week, in the business.

The original design of the SEI option targeted both UI and social assistance recipients. However, the UI regulations at that time did not allow clients to receive UI benefits if they intended to become self-employed. This was corrected by the passage of Bill C-31 in November 1990, which resulted in changes to the *Unemployment Insurance Act* and regulations, thereby allowing the unemployed to pursue self-employment under the Development Uses of UI funds. The purpose of this amendment was to realign the UI program away from passive income support towards active training and re-employment assistance for the unemployed (Graves & Gauthier, 1995).

3.1.2 The Self-Employment Assistance Program

Legislative changes resulted in the replacement of the SEI option by the Self-Employment Assistance (SEA) program in May 1992. This program extended the eligibility criteria to allow UI and welfare recipients access to funding in both Community Futures and non-Community Futures areas. The UI recipients were funded through the Development Uses of UI funds, while the social assistance recipients continued to be funded from the Consolidated Revenue Fund. The delivery of the program was carried out by Business Development Centres in the Community Futures areas and delivery agents in urban areas across Canada (Graves & Gauthier, 1995).

The program introduced major changes, in both the design and the delivery process. First, the SEA program introduced a shift from the previous flat rate payment system to a variable rate system, based on the prior earnings of the UI recipients. The program also included a mandatory

training component for those applying for self-employment assistance. Finally, the broadened scope of the program allowed for an active targeting of designated groups to participate in the program.

The SEA program's participation criteria required applicants to be legally entitled to work in Canada and to have not participated previously in a self-employment activity through a similar program funded by HRDC. Participants also had to have attended an orientation session provided by the delivery agent, and to have completed a self-evaluation exercise to determine their suitability for self-employment. As with the SEI option, the level of duration of the income and entrepreneurial support was 52 weeks, with a provision that in exceptional circumstances the duration be extended to a total of 78 weeks for disabled participants (Graves & Gauthier, 1995).

The new *Employment Insurance Act* in 1996 permitted the transfer of control and management of Labour Market policies and programs to the provinces and territories. This gave the regions flexibility to design and manage modified self-employment programs and to deliver them through third party agencies. The regional programs still had to maintain the major benefits of the national program, but provincial and territorial administrators were permitted to amend the programs to provide better delivery and services based on the needs of their local clients[8].

3.1.3 Other Self-Employment Programs

In addition to the above, both the federal government and the provincial governments offer other support programs targeting youth, women, and Aboriginal peoples who are interested in pursuing self-employment as a career option. Aboriginal Business Canada, for instance, is a special agency within Industry Canada (IC) that supports Aboriginal business development. It provides financial assistance in the form of repayable or non-repayable contributions, as well as training in business planning, marketing, and start-up techniques, business expansion and modernization, and acquisition of a commercially viable business (Industry Canada, 2005).

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[8] Human Resources and Skills Development Canada (HRSDC) entered into agreements with most provinces and territories to define how the Benefits and Measures would be delivered in each region. As a result, in New Brunswick, Quebec, Manitoba, Saskatchewan, Alberta, the Northwest Territories, and Nunavut, programs similar to the Employment Benefits and Support Measures of the federal government are delivered by the provincial or territorial government pursuant to agreements under Section 63 of the *Employment Insurance Act*. Service Canada (SC) delivers the Employment Benefits and Support Measures in Newfoundland and Labrador, Nova Scotia, Prince Edward Island, Ontario, British Columbia, and the Yukon (HRSDC, 2005).

Similarly, the Federal Economic Development Initiative in Northern Ontario (FedNor) and three regional economic development agencies — Atlantic Canada Opportunities Agency, Canada Economic Development for Quebec Regions, and Western Economic Diversification Canada — have been set up to address regional needs. Each agency works with other federal departments, provincial and municipal governments, and the private sector to provide small and medium-sized business owners with access to capital, markets, information, and skills development.

Although these specialized programs are managed differently than the self-employment program that is funded by the Employment Insurance program of Canada, a number of them are designed for disadvantaged groups. Western Economic Diversification Canada, for instance, offers a special program of self-employment support for people with disabilities. A special loan fund is also set aside to meet the needs of women and youth entrepreneurs (Industry Canada, 2005).

3.2 Current Developments and Considerations

3.2.1 Retirement Savings and Corporate Tax Cuts

Changes to the *Income Tax Act* in 1990 allowed all Canadians, including the self-employed, to increase their contributions to Registered Retirement Savings Plans (RRSPs). The annual contribution limit, however, was capped at 18 percent of earnings up to a maximum of $13,500 (Palameta, 2003). In its 2005 Budget, the Government of Canada announced an increase of the annual limit to a maximum of $22,000, effective in 2010[9]. The budget also announced the elimination of the 30 percent foreign property limit on pension investments, effective immediately. Finally, the 2005 Budget proposed elimination of the corporate surtax and a decrease of the general corporate income tax rate from 21 to 19 percent (Government of Canada, 2005).

[9] The Registered Retirement Savings Plan (RRSP) program is a government-supported private savings plan, which was established in 1957 to provide workers who are not part of a company-sponsored Retirement Pension Plan (RPPs) a comparable vehicle for retirement saving. The maximum ceiling regulation is an attempt on the government side to integrate RRSPs with RPPs so that members of either plan are treated fairly relative to the other. While saving for retirement is the primary use of RRSPs, the funds can be withdrawn at any time, subject only to the provision that the deferred tax liability is paid on the withdrawn funds. In the case of the self-employed, the funds are often withdrawn for business purposes.

3.2.2 Employment Insurance Coverage Considerations

The growth of self-employment has sparked debate regarding the extension of Employment Insurance (EI) coverage to self-employed workers. Involved in this debate are policy analysts from the Canadian arts and cultural industries (Canadian Conference of the Arts, 2003) as well as those researching employment issues related to women in non-standard work arrangements (Townson, 2003; Hughes, 1999). In 2001, the House of Commons Committee on Human Resources recommended that the government develop a framework for extending EI coverage to self-employed workers in terms of both regular and special benefits such as sickness, maternity, and parental benefits[10]. The complexities involved, however, require further investigation before it can be seriously considered. The potential for moral hazard, the entry requirements, and the premium specifications are only some of the issues that need further clarification (HRDC, 2001).

[10] It should be pointed out here that not all self-employed people are denied access to EI. For instance, special provisions have been created to allow the earnings of self-employed fishers to be insurable for the purposes of collecting both regular and special EI benefits. Similarly, the owners, proprietors, or operators of barbershop and hairdressing businesses are considered to be employers for EI purposes for the individuals who perform services in connection with the businesses, even if the individuals are self-employed. Special provisions also cover self-employed manicurists, taxi drivers, and drivers of other passenger-carrying vehicles (Lin, 1998; HRDC, 2001).

4 Analytical Framework

4.1 Purpose of the Study

While previous research has enhanced our empirical knowledge of the role of self-employment in the Canadian economy, much remains to be learned about the socio-economic security of the self-employed and its possible impact on public funds. Using the latest data on self-employment, this study employs a series of binomial logistic regressions to examine earnings determinants and to explore factors influencing the likelihood of self-employed Canadians to own Registered Retirement Savings Plans (RRSPs) and health-related benefits coverage. The primary purpose of this examination is to identify significant factors affecting the earnings potential and savings behaviour of self-employed individuals and to document to what extent current government programs and policies address these factors. In combination with the previous research, the findings from this study will be instrumental in recommending a policy change.

4.2 Data Source and Sample Size

The data used in this analysis come from the public microdata files of the Survey of Self-Employment (SSE), conducted in April 2000 by Statistics Canada on behalf of Human Resources Development Canada (HRDC). This specialized survey was administered as a supplement to the Labour Force Survey (LFS), a monthly household survey whose sample is representative of the civilian population 15 years of age or older in Canada's ten provinces[11]. The SSE survey provided an extensive update of information on self-employment in Canada.

In addition to collecting data on the general socio-demographic characteristics of the self-employed, the SSE covered a range of specific issues that had not been addressed before. These

[11] Specifically excluded from the survey's coverage were residents of the Yukon, Nunavut, and the Northwest Territories, persons living on Indian Reserves, full-time members of the Canadian Armed Forces, and inmates of institutions. These groups together represent an exclusion of approximately 2% of the Canadian population aged 15 or over (Statistics Canada, 2002).

included inquiries about participants' motivation for the self-employment choice; the extent and sources of training related to business operation; health-related benefits coverage and retirement preparation; respondents' perceptions of their financial stability; and membership in professional, occupational, or trade associations.

To qualify for participation in the supplementary SSE survey, individuals had to be aged 15 to 69 and to be self-employed as their main job during the reference week in April 2000. In total, 6,623 individuals from the LFS were eligible to participate. Interviews were completed for 4,023, and 4,015 records qualified to be included in the survey file, providing a response rate of 60.62 percent. For the purpose of the present study, three separate samples were taken from the final dataset released for public use.

After eliminating 598 "not stated" responses and 474 'not applicable" responses from the question on the net revenue of unincorporated enterprises and the gross personal income of incorporated entities, before taxes and deductions, the remaining sample of 2,943 responses was used to analyze self-employed earnings[12]. Ten survey respondents "refused" to answer the RRSP participation question, seven respondents "did not know" if they owned an RRSP plan, and two responses were "not stated." After coding all of these as "system missing," the final sample for RRSP participation used in this analysis consisted of 3,996 responses. The full sample of 4,015 responses was used to investigate whether or not a respondent held any health-related benefits plans.

4.3 Definitions

4.3.1 Self-Employed Status

The definition of self-employment status in the SSE was adopted from the LFS and included two types of self-employed people: (1) working owners of incorporated businesses, farms, or professional practices and (2) working owners of unincorporated businesses, farms, or professional practices, as well as other self-employed people, including those who did not have a

[12] The SSE derived this variable from a range of questions, FN_Q1 to FN_Q4 and FN_Q_6 to FN_Q9, the records of which were not reported separately in the public data file (Statistics Canada, 2002a:84).

registered business. Unpaid family workers were not included in this definition. Self-employed workers working alone were termed "own-account" self-employed, while those who employed others were coded as "employer" self-employed (Statistics Canada, 2002).

4.3.2 Self-Employed Income

The self-reported income figures found in the SSE were defined separately for two categories of the self-employed. The first category, income from an unincorporated business, represented "net income before taxes and deductions." In the case of partnerships, only the respondent's share was reported. In the case of farmers, the income figure included farm program payments, Canadian Wheat Board payments, and crop insurance payments. Operating expenses, depreciation allowances, capital cost allowances, and the value of food and fuel produced and consumed on the farm were excluded from the income calculations. Similarly, in the case of non-farmers, operating expenses, depreciation allowances, and capital cost allowances were excluded from the income figures. The second category, income from an incorporated business or professional practice, included "gross personal income before taxes and deductions" (Statistics Canada, 2002).

4.3.3 Training Related to Self-Employment

Similarly, the SSE survey collected data on work-related training, making a distinction between formal and informal training. Formal training was defined as training that had a structured content and involved some type of evaluation or certification, payment of instruction fees, and a classroom setting. Alternatives such as correspondence and Internet courses were also counted in the formal training category, provided the respondent was officially enrolled. Informal work-related training refers to situations where there was "only an intention to learn, without formal enrolment" in a course of study and no fee was paid. The given examples of informal training activities were self-directed study and reading, electronic tutorials, observations, and discussions with colleagues. Learning that resulted from the respondents' practice was not counted as a part of informal training (Statistics Canada, 2002: 13).

4.3.4 Self-Employment as a Choice

Using two specific questions, the SSE survey provided a derived variable that distinguished between different categories of self-employed workers. The first question asked was: *Now, I would like you to think back to your decision to become self-employed. Did you become self-employed because you could not find suitable paid employment?* The second question was asked in an equally explicit manner: *If instead of self-employment, you could get a paid job, at the going wage or salary rate for someone with your experience and education, would you accept it, yes or no?*

Combining the appropriate responses produced the following four categories: (1) "self-employed by choice," which defines a person who became self-employed for reason(s) other than the lack of a suitable job and who, given the opportunity, would not accept a paid job. (2) Those who became self-employed due to the absence of a suitable paid job and who would, given the opportunity, accept paid employment were classified as "involuntary self-employed." (3) Those who voluntarily became self-employed, but would now rather be paid workers were labeled "discouraged self-employed." (4) Those who originally did not choose self-employment, but would not like to leave self-employment now were classified as "adjusted to self-employment."

4.4 Sample Profile

4.4.1 Working Weight Calculation

Because deriving statistical estimates without the weight variable produces biased results that prevent one from making generalizations to the full population, the SSE required the use of the final weight variable, finwt, provided in the microdata file. Building on the LFS, the SSE employed a sophisticated procedure involving clustered and stratified sampling of respondents that not only adjusted for the sampling method but also resulted in large population estimates. Applying this weight variable is likely to create problems in performing traditional inferential statistical tests because large counts would generate significant test results by the very nature of inferential statistics (Watkins, 2000).

To ensure that adjustments for SSE sampling methods were retained, and also that N is maintained at the sample size rather than the population estimate, a new weight variable, "workwt," was created for each sample in the present study. This variable adjusted the weights so that their sum equals the sample size instead of the population size. Using this weight variable retained the relative importance of each observation with regards to the survey design while avoiding the problem of sample size sensitivity in statistical tests.

The exact procedure used in creating this variable involved: (1) using descriptive statistics in the SPSS to find out the mean of the SSE's final weight variable provided in the microdata file, and (2) using the "compute variable" function in SPSS to calculate the new weight variable "workwt." The exact numeric expression was: workwt = finwt/μ, where "finwt" stands for the final weight provided in the SSE microdata file and "μ" is the mean weight for the subset of the survey respondents. This new weight variable was applied to estimate the following frequencies as well as all other statistical reports found in this paper.

4.4.2 Demographic Profile of the Self-Employed

As summarized in *Table 1*, men represent over two-thirds of self-employed Canadians; self-employed women account for about 32 percent of the total sample. Mature and older workers, including those working past age 60, make up a higher proportion of the self-employed, compared with younger workers. Young entrepreneurs, those below age 30, make up only about 7 percent of the self-employed, while entrepreneurs above age 50 represent over 40 percent of the self-employed. A clear majority, 74.5 percent, were born in Canada; immigrants account for about 17 percent.

The largest group of the self-employed are located in Ontario, about 37 percent of the sample, while Quebec and the Prairies account for about 22 and 20 percent, respectively. British Columbia accounts for about 15 percent, while the Atlantic region holds only about 5 percent of the self-employed. Close to 80 percent of self-employed workers are either married or living common law. Eleven percent of self-employed workers are single, while about 9 percent are widowed, separated, or divorced.

Table 1: Demographic Profile of Self-Employed Canadians

Personal Characteristics of the Self-Employed		Frequencies	
		Count	(Percentage)
Gender			
	Male	2,727	(67.9)
	Female	1,288	(32.1)
Age			
	15 to 29	294	(7.3)
	30 to 34	487	(12.1)
	35 to 39	590	(14.7)
	40 to 44	707	(17.6)
	45 to 49	627	(15.6)
	50 to 54	579	(14.4)
	55 to 59	396	(9.9)
	60 +	336	(8.4)
Origin			
	Born in Canada	2,993	(74.5)
	Immigrant	688	(17.1)
Region			
	Ontario	1,490	(37.1)
	Quebec	889	(22.2)
	Atlantic	225	(5.6)
	Prairies	806	(20.1)
	British Columbia	605	(15.1)
Marital Status			
	Single, Never Married	443	(11.0)
	Widowed, Separated, or Divorced	365	(9.1)
	Married or Living Common Law	3207	(79.9)
Spouse / Partner Work Status			
	Public Sector Employee	426	(10.6)
	Private Sector Employee	1,194	(29.8)
	Self-Employed	1,001	(24.9)
Children Age			
	<6	710	(17.7)
	6 — 15	956	(23.8)
	16 — 24	461	(11.5)
Educational Attainment			
	University Education	936	(23.2)
	Postsecondary Certificate / Diploma	1,269	(31.6)

Personal Characteristics of the Self-Employed	Frequencies	
	Count	(Percentage)
Some Postsecondary	330	(8.2)
Grade 11 to 13, Graduated	778	(19.4)
Some Secondary School or Less	706	(17.6)
Job-Specific Training		
Took Both Formal & Informal Training	1,046	(26.0)
Took Formal Training Only	36	(0.9)
Took Informal Training Only	2,109	(52.5)
Took No Job-Specific Training	824	(20.5)

Note: Working weight in effect

Almost a quarter of the self-employed have spouses or partners who work in the same employment sector. However, close to 30 percent of the self-employed have spouses or partners employed in the private sector, while 10.6 percent have spouses or partners working in the public sector. Over 40 percent of the self-employed have dependent children; only about 11 percent have children in the 16-to-24 age group.

About 23 percent of the self-employed are university-educated. Over 30 percent hold a college diploma, while about 8 percent have some postsecondary education. Close to one-fifth of the respondents have completed at least grade 11 or have a high school diploma. However, about 18 percent have less than a high school diploma. While 26 percent of self-employed workers have taken both formal and informal training related to their business, 52.5 percent have taken only informal training. Less than one percent have taken only formal training, while over 20 percent have taken no training at all.

4.4.3 Business Profile of the Self-Employed

As shown in *Table 2*, over 36 percent of the self-employed work in professional, scientific, and technical services. Close to 16 percent work in the arts, entertainment, accommodation, food, and culture sector. The wholesale and retail trade sector accounts for close to 14 percent, while manufacturing, transportation, and warehousing accounts for about 10 percent. The construction and primary sectors account for about 13 and 11 percent, respectively.

The highest occupational concentration is found in management, over 20 percent. Trades, transport, and equipment operation occupations account for 19 percent, while about 12 percent of the self-employed work in sales and service. Occupations relating to business, finance, and administration account for about 10 percent, while 11.5 percent of the self-employed are found in occupations unique to primary industry. Other occupations such as natural and applied science, health, childcare and home support, and art, culture, recreation, and sports account for about 6 percent each or less. The lowest concentration is found in social science and education, about 4 percent, and processing and manufacturing, about 2 percent.

Table 2: Business Profile of Self-Employed Canadians

Business Characteristics of Self-Employed		**Frequencies**	
		Count	(Percentage)
Industry			
	Primary Sector	431	(10.7)
	Construction	513	(12.8)
	Manufacturing, Transportation, & Warehousing	416	(10.4)
	Wholesale & Retail Trade	560	(13.9)
	Arts, Entertainment, Accommodation, Food, & Culture	630	(15.7)
	Professional, Scientific, & Technical Services	1,466	(36.5)
Occupation			
	Processing & Manufacturing	92	(2.3)
	Occupations Unique to Primary Industry	464	(11.5)
	Trades, Transport, & Equipment Operation	761	(19.0)
	Childcare and Home Support	200	(5.0)
	Sales & Services	490	(12.2)
	Art, Culture, Recreation, & Sports	225	(5.6)
	Social Science & Education	147	(3.7)
	Health	163	(4.1)
	Natural & Applied Science	253	(6.3)
	Business, Finance, & Administration	391	(9.7)
	Management	828	(20.6)
Membership in Associations			
	Member	1,728	(43.0)
	Non-Member	2,287	(57.0)
Work Arrangement			
	Works from Home	944	(23.5)
	Works outside of Home	3,071	(76.5)

Business Characteristics of Self-Employed	Frequencies	
	Count	(Percentage)
Number of Jobs		
Multiple-Job Holder	219	(5.5)
Single-Job Holder	3,791	(94.4)
Hours Worked per Week at Main Job		
<15	43	(1.1)
15 — 29	461	(11.5)
30 — 34	308	(7.7)
35 — 39	259	(6.5)
40	963	(24.0)
41— 49	353	(8.8)
50 Hours or More	1,622	(40.4)
Past Work Experience		
No Past Work Experience at all	124	(3.1)
Employee Only	2,461	(61.3)
Self-Employed Only	191	(4.8)
Both Employee & Self-Employed Experience	1,239	(30.9)
Tenure of Current Self-Employment		
<2 Years	738	(18.4)
2 — 4 Years	818	(20.4)
5 — 9 Years	844	(21.0)
10 — 19 Years	925	(23.0)
20 or More Years	664	(16.5)
Self-Employment as a Choice		
Involuntary Self-Employed	455	(11.3)
Discouraged Self-Employed	715	(17.8)
Adjusted Self-Employed	395	(9.8)
Voluntary Self-Employed	2,306	(57.4)
Class of Self-Employment		
Incorporated with Employees	991	(24.7)
Incorporated without Employees	541	(13.5)
Unincorporated with Employees	525	(13.1)
Unincorporated without Employees	1,958	(48.8)

Note: Working weight in effect

With respect to gender, there is almost an equal proportion of men and women in management occupations, 20.7 and 20.4 percent, respectfully[13]. The split gender files show that, besides management, women are concentrated in sales and service, business and finance, and childcare and home support. Men, on the other hand, are concentrated in trades, transport and equipment operation and in occupations unique to primary industry. Natural and applied science is another area where gender representation is significantly different; less than 2 percent of self-employed women are in this occupation category, compared to over 8 percent of self-employed men.

Table 2 also shows that 43 percent of the self-employed hold a membership in a professional or other association; however, the majority, 57 percent, do not have such a membership. Disaggregating the sample by gender reveals that only 38 percent of self-employed women are members, while 62 percent are non-members. Among self-employed men, 45.6 are members and 54.4 percent are non-members. While about a quarter of the self-employed work from home, over three quarters have their workplace outside of the home. Again, disaggregating by gender shows that only 14.3 percent of men are home-based while 40 percent of women work from home. Similarly, only about 5 percent of the self-employed are multiple-job holders; the clear majority, about 95 percent, work at only one job. Multiple-job holders account for 9 percent of women, while among men 5.1 percent are multiple-job holders.

As illustrated in *Table 2*, a large proportion, over 40 percent, of the self-employed work 50 hours per week or more. Close to a fifth work 40 hours per week, while about 9 percent work 41 to 49 hours per week. Over 14 percent of the self-employed work 30 to 39 hours per week, and about 11 percent work 15 to 29 hours per week. Only a few self-employed individuals work less than 15 hours per week, just over one percent of the total sample.

The split gender samples show that more men than women work longer hours; 45.5 percent of men, compared to 29.5 percent of women, work 50 hours or more. Conversely, a greater proportion of women work shorter hours per week. While fewer than seven percent of men work 15 to 29 hours per week, over 21 percent of women are in this category.

[13] Frequencies were also calculated for the split gender files. The tables presented in this paper, however, show only the full sample.

With respect to prior work experience, only about three percent of the self-employed reported having no experience prior to becoming self-employed. Over 60 percent have had paid work experience, about 5 percent have had self-employment experience, and over 30 percent have had both paid work and self-employment experience. About 16 percent of the self-employed have been in business for over 20 years. Twenty-three percent have been self-employed 10 to 19 years, and 21 percent 5 to 9 years. Close to 40 percent are new entrants to the self-employment field, having been there for less than 4 years.

The majority, about 57 percent, of the self-employed reported entering self-employment voluntarily, compared to 11 percent who were involuntarily self-employed. Close to 18 percent of the self-employed are "discouraged self-employed," as defined above, while the "adjusted to self-employment" account for about 10 percent of the sample. The largest proportion of the self-employed, about 49 percent, are unincorporated own-account entrepreneurs. Similar proportions, about 13 percent, are incorporated own-account entrepreneurs and unincorporated employers. Incorporated employers represent a quarter of the self-employed.

The distributions of men and women with respect to self-employment choice are almost identical. With respect to legal structure, however, the proportion of incorporated male employers is about 10 percentage points higher than the proportion of incorporated female employers. The proportion of unincorporated own-account women is about 18 percentage points higher than that of unincorporated own-account men. There is also a significant difference in business tenure between the genders; the proportion of men self-employed for 20 years or more is about 15 percentage points higher than the proportion of women with such tenure. On the other hand, the proportion of women who have been operating their businesses for less than two years is about ten percentage points higher than the proportion of men doing so.

4.4.4 A Socio-Economic Profile of the Self-Employed

Finally, *Table 3* portrays the socio-economic profile of self-employed Canadians. As demonstrated below, close to a quarter of the self-employed earn an annual income of less than $25,000, with about two percent reporting a net loss. About 25 percent of the self-employed fall into the $25,000 to less than $45,000 income range, while 10 percent earn an annual income of

$45,000 to less than $75,000. The $75,000 and more income category accounts for about 12 percent of the total sample.

Table 3: Socio-Economic Profile of Self-Employed Canadians

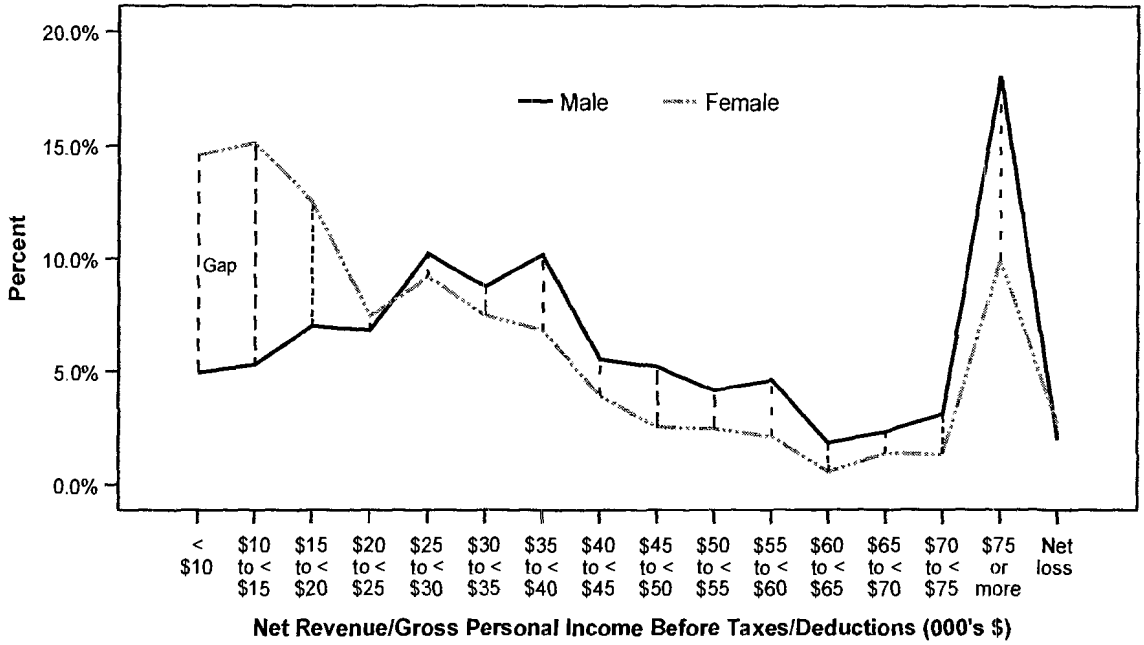
Socio-Economic Indicators of the Self-Employed		Frequencies	
		Count	(Percentage)
Annual Income			
	<$10,000	240	(6.0)
	$10,000 to < $15,000	253	(6.3)
	$15,000 to < $20,000	264	(6.6)
	$20,000 to < $25,000	213	(5.3)
	$25,000 to < $30,000	300	(7.5)
	$30,000 to < $35,000	254	(6.3)
	$35,000 to < $40,000	278	(6.9)
	$40,000 to < $45,000	152	(3.8)
	$45,000 to < $50,000	133	(3.3)
	$50,000 to < $55,000	110	(2.7)
	$55,000 to < $60,000	117	(2.9)
	$60,000 to < $65,000	44	(1.1)
	$65,000 to < $70,000	62	(1.5)
	$70,000 to < $75,000	78	(1.9)
	$75,000 or More	472	(11.8)
	Net Loss	67	(1.7)
Has RRSPs			
	Yes	1,239	(30.9)
	No	2,761	(68.8)
Has Other Forms of Savings / Investment			
	Yes	1,772	(44.1)
	No	2,224	(55.4)
Has Other Assets such as Home, Cottage, Business			
	Yes	3,132	(78.0)
	No	865	(21.5)
Has Assets such as Land and Rental Property			
	Yes	1,074	(26.8)
	No	2,923	(72.8)
Has a Registered Pension Plan from a Paid Job			
	Yes	596	(14.8)
	No	3,405	(84.8)

Socio-Economic Indicators of the Self-Employed		Frequencies	
		Count	(Percentage)
Has Health-Related Benefits Coverage			
	Has at least One Coverage	2,385	(59.4)
	Has No Coverage at all	1,630	(40.6)
Is Covered by a Dental Plan			
	Yes	1,395	(34.8)
	No	2,620	(65.2)
Is Covered by a Health Plan Other than Provincial Medicare			
	Yes	1,702	(42.4)
	No	2,313	(57.6)
Has Purchased Disability Insurance			
	Yes	1,520	(37.9)
	No	2,495	(62.1)

Note: Working weight in effect

The split gender files reveal a significant gap in earnings between self-employed men and self-employed women. As illustrated in *Figure 4*, the most drastic divergence is in the lowest three income categories. While about 15 percent of self-employed women make less than $10,000 in annual income, only about 5 percent of self-employed men fall into this income category. The gender earnings gap amounts to about 10 percentage points for the next income range, $10,000 to less than $15,000, and about 5 percentage points for the following income range, $15,000 to less than $20,000 per year. The gap shrinks to an average of two percentage points for the middle-income categories, rising again to 10 percentage points in the $75,000 or more income range.

Figure 4: Distribution of Self-Employed Earnings, by Gender



Note: Working weight in effect

Table 3 also reveals that almost 70 percent of the self-employed do not have their own RRSP account and over 55 percent have no other form of savings and investments such as mutual funds, stocks, and bonds. The majority, 78 percent, hold their wealth in assets such as a home or business, while 27 percent have land and rental property. Close to 15 percent of the self-employed have their own pension plan from a paid job; the majority, however, almost 85 percent, do not have their own pension plan. Not much variation is found in the split gender files.

Finally, *Table 3* shows that about 60 percent of the self-employed have at least one health-related benefits coverage. Close to 35 percent have dental plans, and about 42 percent have extended health coverage. Similarly, close to 38 percent have disability insurance that would provide them with income in the case of a long-term health problem. However, about 62 percent of the self-employed have not purchased disability insurance, about 58 percent have no extended health coverage, and over 65 percent have no dental plan. Looking at the aggregate, over 40 percent of the self-employed have no health-related benefits coverage at all. Similar proportions of men and women are found with respect to health-related benefits coverage. The only exception is disability insurance, where coverage for men and women is 43 and 28 percent, respectively.

4.5 Data Limitations

4.5.1 Disadvantaged Groups

While the SSE survey allows for analysis of some designated groups such as women and immigrants, it fails to provide comprehensive coverage of racial profiles. For instance, in addition to excluding persons living on Indian Reserves completely, the survey does not even allow for analysis of the off-reserve Aboriginal population that is self-employed. This is perhaps the greatest limitation given the fact that this segment of the self-employed Canadian population, particularly those Aboriginals located on-reserve, experiences multiple barriers. Similarly, there is no minority profile that would allow for a direct comparison. Race has been found to play a significant role in recent retirement savings studies (DeVaney & Chiremba, 2005).

4.5.2 Face Validity

Although care was taken to prevent confusion between provincial medicare and privately purchased health plans, some confusion remains with respect to the wording of the questions about employer-sponsored plans in SSE. For instance, the questions inquiring about dental and medical plans asked whether the respondents are "covered" not whether they have "purchased" the insurance plans. Since this study is concerned primarily with how well off the self-employed are, this measurement may not be appropriate because those that obtained the coverage through a significant other may still be at the lower end in terms of economic well-being. Perhaps, phrasing all three of the questions in the same way would have ensured a greater confidence in the accuracy of the present analysis[14].

4.5.3 Other Limitations

Due to modifications made for confidentiality reasons, the public use files differ from the survey "master" files held by Statistics Canada in a number of important ways. For instance, while the master files include explicit geographic identifiers for provinces and the three largest Census

[14] Only the third question related to benefits coverage was flawless in terms of measuring the "ability" to acquire it: *Have you purchased disability insurance that would provide you with income in the case of a long term health problem?* (Statistics Canada, 2002a: 21).

Metropolitan Areas, the public use file contains only regional identifiers. Also, several LFS variables have been further grouped to prevent identification of respondents. For example, marital status has only three instead of six categories. The answers "Married" and "Living common law," as well as "Widowed," "Separated," and "Divorced," have been combined into two categories. The list of variables affected by the modifications also includes suppressed files on franchising, immigration year, and bankruptcy declaration. Finally, the reported income was capped at $75,000.

These modifications hinder the present analysis significantly, particularly with respect to the RRSP and health benefits coverage examinations. Controlling for all other variables, Palameta (2003) found that individuals in a legal marriage are more likely to contribute to RRSPs than are those in a common-law relationship. Palameta also found that the likelihood of contributing to an RRSP is related to the level of spousal income; this information was not collected in the SSE. Finally, the information gathered on the respondents' dwelling class and whether the dwelling was owned, with or without a mortgage, or rented, was suppressed on the public use microdata file. This information could have been used to test if debt such as a mortgage influences the decision of self-employed people regarding whether to participate in RRSPs (DeVaney & Chiremba, 2005).

Benefits coverage analysis was also hindered in two respects: provincial data would have allowed for better insight into whether or not health-related benefits coverage is related to provincial differences regarding the extent of medicare coverage. The second shortcoming relates to single parents, who are a particularly vulnerable segment of the Canadian population. Studies indicate that married workers with children are more likely to have extended health-related coverage than those without children. The results for single people, however, show a reverse of this; those without children are about 50 percent more likely to have extended health-related coverage than are single parents (Reesor & Lipsett, 1998).

5 Methodology

5.1 Research Questions

The study was initially launched primarily to explore factors that might explain why some self-employed Canadians do better than others — the initial question was framed to explore the determinants of the self-employed earnings equation. The richness of the SSE data, however, inspired a deeper look into the issue of the socio-economic security of the self-employed. The responses collected on the savings and investments behaviour of the self-employed were the most intriguing, begging two particular questions: Why is it that some self-employed individuals utilize the opportunity to invest in RRSPs and some do not? Why do some self-employed individuals have health-related benefits plans and some do not? It was reasonable to assume that accounting for all three issues would reveal a more realistic picture and hence a more direct measure of economic well-being than would a simple earnings equation. As indicated before, there are some limitations with respect to examining the benefits coverage issue. Nevertheless, an empirical analysis has been done for each of these three sets of questions:

1. What factors explain the low-income status amongst the self-employed Canadians?
2. What determines participation in retirement savings plans for the low-income self-employed Canadians?
3. What determines participation in health-related benefits plans over and above provincial medicare programs for the low-income self-employed Canadians?

The policy-related questions are derived directly from the above research questions: What should be the role of government with respect to entrepreneurs' socio-economic well-being? What can governments do about uninsured self-employed Canadians? What policy options are available to improve the socio-economic security of self-employed Canadians?

5.2 Analytical Method

For econometric analysis, the study employs three sets of binomial logistic regressions to model separately the likelihood of a self-employed individual to own an RRSP account, to hold at least one health-related benefits plan, and to make an annual income that equals or exceeds $40,000. Each model assumes different groups of explanatory or exploratory variables. The inclusion of explanatory variables is motivated by their demonstrated importance in prior theoretical and empirical research. Combined with some exploratory variables, these are applied to test whether or not, and to what extent, each independent variable contributes to the likelihood of an individual being in one group or the other of the dependent variable. The generic form of the multiple logistic regression equation used to predict the group membership in each model is:

$$\log_e\left\{\frac{\pi}{1-\pi}\right\} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_n x_n$$

where:

π = the probability of the dependent variable being equal to one

β_0 = the estimated constant

β_1 through β_n = the estimated logit coefficients

χ_1 through χ_n = the vectors of the independent variables

The expression within the brackets represents an *odds* value; that is, the ratio of the probability of a positive response to the probability of a negative response. These odds are then transformed into a "logit" by taking the natural log. Thus, in this equation, the dependent variable is the log of the odds of being in category 1 compared to category 0. In other words, the equation measures the likelihood of a positive response occurring, dependent on the vector x.

5.3 The Income Model

5.3.1 Dependent Variable

The first set of binary logistic regressions models the likelihood of a self-employed individual to make at least $40,000 in personal income per annum[15]. The "income" comes from the survey question that gathered self-reported "net revenue of unincorporated" and "gross personal income of incorporated" entities before taxes and deductions. The dichotomous dependent variable is constructed by collapsing the reported 16 categories of income, ranging from less than $10,000 to over $75,000, into a binary response and coded as 1 = over $40,000 and 0 = less than $40,000. The last category also includes the reported negative profits.

The model attempts to determine the relative importance of human and social capital on one hand and individuals' socio-demographic characteristics and business conditions in industries and regions on the other hand, in contributing to explain why some self-employed individuals earn more than others. To account for the differences in gender behaviour, the model was first applied to the self-employed as a group, and then separate regressions were estimated for men and women. *Table 4* summarizes the three sets of explanatory variables and the coding procedure used in this model.

[15] Using the same data source, Devlin (2001) approximated an average self-employed income to be $38,350 for self-employed men and $22,955 for self-employed women. Rooney at al. (2003) used $30,000 as the cut-off point to classify low-income self-employed women. The $40,000 threshold used in this study is a proxy for "reasonable" financial success for a self-employed individual.

Table 4: The Income Model Specifications

	Variable	Coding Specification
	Income	1 = $40,000 or more: 0 = below $40,000
Human Capital	Education	1 = university: 2 = PSE diploma: 3 = some PSE: 4 = HS: 5 = less than HS
	Bus_Training	1 = formal & informal: 2 = formal only: 3 = informal only: 4 = no training
	Work_Exp	1 = no experience: 2 = employee: 3 = self-employed: 4 = both experience
	Tenure	1 = less than 2 years: 2 = 2 to 4: 3 = 5 to 9: 4 = 10 to 19: 5 = 20+ years
Social Capital	Assoc_Memb	1 = holds membership in a professional association: 0 = otherwise
	Work_Arrang	1 = home-based: 2 = based outside home
	SE_Class	1 = inc_empl: 2 = inc_own-acc: 3 = uninc_empl: 4 = uninc_own-acc
Personal & Business Factors	Gender	1 = male: 0 = otherwise
	Age_Group	1 = 15 to 29, through 8 = 60 years old or more
	Marital_Status	1 = single: 2 = widowed, separated, or divorced: 3 = married / common law
	Children_Age	1 = younger than 6: 2 = 6 to 15: 3 = 16 to 24 years old
	Immig_Status	1 = self-employed immigrant: 0 = otherwise
	SE_Choice	1 = involuntary: 2 = discouraged: 3 = adjusted: 4 = voluntary
	Jobs_Held	1 = multiple-job holder: 2 = single-job holder
	Work_Hrs	1 = less than 15 hours, through 7 = 50 or more hours per week
	Industry	1 = primary, through 6 = professional, scientific, & technical services
	Occupation	1 = processing & manufacturing, through 11 = management
	Region	1 = Ontario: 2 = Quebec: 3 = Atlantic: 4 = Prairies: 5 = BC

Note: The reference category for the independent variables is listed last.

5.3.2 Independent Variables

5.3.2.1 Human [Entrepreneurial] Capital

Human capital theory applies economic reasoning to study individuals' investments in productivity-enhancing skills and knowledge such as education and training, which are then used in empirical studies to test the reasons for success or failure in the labour market. Becker (1992) made a distinction between general and specific human capital. General human capital is obtained through broad-spectrum education and is widely applicable across different fields. Specific human capital, on the other hand, is developed through training and experience within particular work tasks in a specific job and is thus less transferable across disciplines and jobs.

Douglas (2005) argued that the human capital of entrepreneurs needs to be considered more broadly and proposed the concept of "entrepreneurial capital," which adds entrepreneurial

attitudes to the knowledge, skills, and experiences postulated by Mincer & Polachek (1974). For the purpose of this study, the human capital composite shown in *Table 4* contains educational attainment, job-specific training, and work experience. Since attitudes change in response to both endogenous and exogenous factors, this variable is classified under personal and business factors.

Economic reasoning dictates that the mere choice of self-employment implies that entrepreneurs anticipate better returns for their human capital by running their own businesses than they would expect to obtain in the paid labour market. Externalities such as information asymmetries, incentive concerns, and market frictions all contribute to imperfect rewards to human capital in the traditional labour market (Bonnet et al., 2005). The literature, however, abounds with findings that highly skilled and highly educated individuals with relevant job experience are more likely to succeed, both in the paid and self-employed labour markets (Mincer & Polachek, 1974; Backer, 1992; Eck, 1993; Dunn & Holtz-Eakin, 2000; Kangasharju & Pekkala, 2002; Sluis & Praag, 2004; Lazlo, 2005; Sanmartin, 2001; Hirsch, 2005).

Entrepreneurship literature gives particular importance to previous self-employment work experience. Studies have shown that returns from paid-work experience are higher in paid work than in self-employment (Evans & Leighton, 1989). Business tenure receives mixed reports in previous research. Most studies have found that established entrepreneurs earn higher incomes than new entrants; however, high levels of tenure do not necessarily mean higher earnings, for the reverse is possible too. The suggestion is that low earnings and high tenure may be related to non-pecuniary aspects of the job, such as the attraction of "being one's own boss" (Hamilton, 2000; Fairlie, 2005).

Applying human capital theory, it is plausible to expect a positive relationship between a self-employed individual's human capital and the likelihood that he or she makes an above-average income. Greater human capital provides individuals with more knowledge that can assist them in identifying opportunities and ways to best exploit those opportunities. This positive relationship is expected to be particularly strong with regards to specific human capital because the literature on signalling holds that education *per se* does not necessarily increase an individual's productivity. The education factor is more likely to be applicable in the paid labour market where educational level serves as a signal to the employer about the workers' innate capacity. This signalling effect diminishes as one moves into self-employment (Bonnet et al., 2005).

Five educational categories, ranging from less than a high school diploma to at least a university degree are used to measure the general human capital in the present model. A reverse coding procedure was used to create the following categories: 1 = university degree; 2 = postsecondary certificate or diploma; 3 = some postsecondary education; 4 = grade 11 to grade 13, graduated; and 5 = some secondary education or less. The last category serves as the reference group.

Specific human capital is measured by whether or not a self-employed individual had engaged in some sort of job-related training and what kind of training was involved. This measure, as portrayed in *Table 4*, contains four categories, which come from a derived SSE variable involving two questions: *In the past 12 months / since start date (if started less than 12 months ago), did you take any formal training or education related to your self-employment?* and *There are various methods that one can use to learn informally. In the past 12 months / since start date (if started less than 12 months ago), did you use any of the following methods for work-related learning: studying manuals, books, or other publications in either print or electronic format; observing a colleague demonstrating skills; and discussing with others?* The responses produced a variable with four categories, coded as: 1 = both formal and informal training; 2 = formal training only; 3 = informal training only; and 4 = took no training at all.

The proxy used to measure the work experience of the self-employed comes from the survey questions that inquired directly about the tenure of current self-employment as well as the type of previous work experience. The tenure of self-employment is derived from the start date and classified into five categories, starting with less than 2 years to more than 20 years. The type of past work experience was derived from three questions: *What was your main activity during the 12-month period before the start of your self-employment? Have you ever worked as a paid employee?* and *Before your current self-employment, had you ever been self-employed?* As illustrated in *Table 4*, the coding created four categories: (1) no prior work experience at all; (2) employee only; (3) self-employed only; and (4) both employee and self-employed experience.

5.3.2.2 Social Capital

Social capital is often treated as a subset of human capital in the sense that it expands the individual's human capital by enhancing the individual's ability to identify viable opportunities and gain access to valuable resources through positive interpersonal networks (Becker, 1992;

Gomez & Santor, 2001; Allan, 2000; Douglas, 2005). Because the literature shows no clear consensus on what exactly constitutes social capital and how to measure it, sceptics doubt the effectiveness of including this factor in empirical work, particularly with an implicit positive value attached to it (Dasgupta, 2005).

Empirical research, however, suggests that social capital, defined as "social relations that facilitate individual action," is a strong positive determinant of self-employed earnings (Gomez & Santor, 2001). Social capital enhances the benefits of investment in physical and human capital and affects economic outcomes in a number of ways. The most prominent of these is that social networks can reduce costs by lowering the amount of time spent searching for and gathering information. Mutual co-operation can increase the level of essential knowledge available for an economic activity, thus facilitating better decisions and innovations (Allen, 2000; Annen, 2004).

To capture the most from the multiple dimensions of social capital, the model presented in this study includes three measures as proxies for the social capital of the self-employed: (1) membership in professional and other associations; (2) the legal structure of self-employed businesses; and (3) respondents' work arrangements[16]. The first two measures attempt to assess the extent to which *weak ties* are present among the self-employed, while the third measure captures the *strong ties* or their absence. The difference between the two categories of ties is important because studies show that strong ties, defined as internal networks between family members and ethnic groups, add very little in terms of economic value. It is the weak ties — the networks that extend across ethnic groups and different social and political classes — that create bridging and linking social capital that benefits participants the most (Annen, 2004).

The membership in an association measure was obtained from a derived variable utilizing the following two inquiries: *In your self-employment, are you required to belong to any professional, occupational, or trade association?* and, *Do you voluntarily belong to any professional, occupational or trade association, or any organization that represents the interests of the self-employed?* Affirmative answers were coded as one, otherwise, answers were coded as zero. Similarly, the class of self-employed worker variable was derived from two questions that

[16] Although membership in associations is a clear measure of networking potential, two additional measures were used to reduce the problem of measurement error, since this vector contains the key independent variables for this model. As Gomez and Santor (2001: 954) emphasize "[A]ny single quantification of social capital is a potential oversimplification of an otherwise complicated measure."

inquired about the legal status of the business and whether or not the respondent had any employees in the reference week. The coding was classified as: (1) incorporated with employees; (2) incorporated without employees; (3) unincorporated with employees;: and (4) unincorporated without employees.

Finally, the SSE asked respondents, other than farmers and fishers, about their workplace location: *Where do you work most of the time?* The categories read to the respondents included: at home; outside the home, in your own or rented office, store, or other workspace; in an office or workspace provided to you by your clients; in various clients' locations; and other. For the purpose of the present analysis, these categories were collapsed into two categories and coded as 1 = at home and 2 = outside of home. Negative coefficients were expected for non-member, own-account self-employed individuals, and home-based self-employed individuals. In other words, being a member of a professional or other association, working outside of the home, and having employees, regardless of the incorporation status, is likely to strengthen one's weak social ties and thus improve one's chances of earning an annual income in excess of $40,000.

5.3.2.3 Personal and Business Factors

The model also includes control variables that characterize entrepreneurs. These include personal characteristics such as age and gender, marital and immigration status, children's age, and entrepreneurial attitudes. The number of jobs held and hours worked per week are also taken into account, as are industry, occupation, and regional distribution of the self-employed.

The tendency for self-employed women to have relatively low earnings is well documented (Mincer & Polachek, 1974; Hundley, 2001). According to Hughes (1999), in 1996, the average annual income of full-time self-employed Canadian women who had employees was 69.2 percent of the income of full-time self-employed men with employees. The gap was even more evident for the own-account self-employed, where in 1996 own-account self-employed women made 67.3 percent of the income of own-account self-employed men. *Figure 1*, presented earlier in this paper, indicates a similar situation.

Hours worked, marital status, age, and the presence of young children have all been cited to explain this earnings discrepancy between men and women. Hundley (2000), for instance, found

that the earnings of self-employed men increase with the number of children while the earnings of self-employed women decrease with the number of children. On the other hand, while female earnings decrease with marriage, controlling for other attributes, self-employed single women earn more than self-employed single men.

In the present model, three categories summarize the marital status of self-employed: 1 = single, never married: 2 = widow, separated or divorced and 3 = married or living common law. The presence of children variable comes from the survey question that asked about the "age of youngest own child (children). Three categories are reported with 1 = younger than 6; 2 = 6 to 15; and 3 = 16 to 24. The age cohorts of self-employed are classified into eight categories and coded as: 1 = 15 to 29; 2 = 30 to 34; 3 = 35 to 39; 4 = 40 to 44; 5 = 45 to 49; 6 = 50 to 54; 7 = 55 to 59; and 8 = 60 and over. The survey also recorded the usual hours worked per week at main job in seven categories: 1 = less than 15 hours per week: 2 = between 15 and 29 hours per week: 3 = between 30 and 34 hours per week: 4 = between 35 and 39 hours per week: 5 = 40 hours per week: 6 = between 41 and 49 hours per week: and 7 = 50 or more hours per week.

Immigrants have been found to earn substantially less than native-born workers in the paid labour market (Frenette, 2004). Devlin (2001) confirmed this finding for the self-employed market, while Simpson and Sproule (1998) found no significant difference between the earnings of self-employed immigrants and native-born entrepreneurs. This divergence in findings is absent in the case of individuals who turn to self-employment due to a lack of opportunities in the paid labour market. A wealth of research has been done on the "push" and "pull" hypotheses, with an almost unanimous conclusion that voluntary entrance into self-employment is positively related to higher earnings of the self-employed (Devlin, 2001; Simpson & Sproule, 1998). It is speculated that holding multiple jobs results in higher annual income. However, the literature is not conclusive on this. Gomez and Santor (2001), for instance, found that entrepreneurs who had outside sources of income reported lower figures than those who relied solely on their business earnings.

To replicate findings on the earnings disadvantage of self-employed immigrants, the model includes a dummy variable with self-employed immigrants coded as one and Canadian-born entrepreneurs coded as zero. Likewise, to account for the effect of the number of jobs held by the respondents, two categories were created with multiple-job holders coded as 1 and single-job holders coded as 2. The self-employment choice variable was derived from two survey

questions: (1) *Did you become self-employed because you could not find suitable paid employment?* and (2) *If instead of self-employment, you could get a paid job, at the going wage or salary rate for someone with your experience and education, would you accept it, yes or no?*

The responses were coded into four categories "Self-employed by choice" defines a person who became self-employed for reason(s) other than the lack of a suitable job and who would not accept a paid job. This group are assumed to hold the most positive attitude towards self-employment as a career option, and hence are more likely to earn an income above $40,000. Those who became self-employed due to the absence of a suitable paid job and would, given the opportunity, accept a paid job were classified as "involuntary self-employed."

Somewhere in the middle of this spectrum are those who voluntarily became self-employed, but would now rather be paid workers. These entrepreneurs were labelled "discouraged self-employed." Similarly, those who originally did not choose self-employment, but would now not like to leave self-employment were classified as "adjusted to self-employment." As shown in *Table 4*, the coding order for this variable is: 1 = involuntary self-employed; 2 = discouraged self-employed; 3 = adjusted self-employed; and 4 = voluntary self-employed, which is used as the reference set.

Industrial classification, occupation, and regional distribution variables were also included in the model, to account for the heterogeneity. While Gomez and Santor (2001) found no statistical connotation with respect to self-employed earnings across industries and occupations, Hundley (2000) found significant polarization, with self-employed women in private household and childcare work having very low earnings and self-employed members of established professions having particularly high earnings relative to other self-employed workers. Since the literature reports mixed results on these variables, the present study makes no hypotheses regarding the direction of the relationship.

For the purpose of this study, the standard 18-category classification of industry variable was reduced to 6 categories and coded as follows: (1) "professional, scientific, and technical services" which incorporates (a) finance, insurance, real estate, and leasing, (b) professional, scientific, and technical services, (c) management, administrative, and other support, (d) educational services, and (e) health care and social assistance; (2) "arts, entertainment, accommodation, food, and

culture" which includes (a) information, culture, and recreation, (b) accommodation and food services, and (c) other services; (3) "wholesale and retail trade" which includes (a) wholesale trade and (b) retail trade; (4) "manufacturing, transportation, and warehousing" which includes (a) manufacturing — durables, (b) manufacturing — nondurables, and (c) transportation and warehousing; (5) "construction"; and (6) "primary industry" which includes (a) agriculture and (b) forestry, fishing, mining, and oil and gas.

The occupation variable refers to occupation at the individual's main job and contains 11 categories as presented in SSE: (1) management; (2) business, finance, and administration; (3) natural and applied science; (4) health; (5) social science and education; (6) art, culture, recreation, and sport; (7) sales and service, excluding childcare and home support; (8) childcare and home support; (9) trades, transport, and equipment operation; (10) occupations unique to primary industry; and (11) processing and manufacturing. As indicated in *Table 4*, a reverse coding was performed for both occupation and industry variables. To simplify the interpretation, the coding for regional distribution was done in the following way: (1) Ontario; (2) Quebec; (3) Atlantic region; (4) Prairies; and (5) BC.

5.4 The RRSP Model

5.4.1 Dependent Variable

The second binomial logistic regression model is designed to explore the effects of wealth, risk orientation, and other attitudinal and personal factors on the likelihood of a self-employed individual to own an RRSP account. The dichotomous dependent variable, RRSP account, comes directly from the survey question: *Some people start preparing early for retirement, some later. For your retirement, do you have your own RRSPs?* The response was coded as 1 if an individual had an RRSP account; otherwise, it was coded as 0. *Table 5* depicts all independent variables used in the RRSP equation, along with the coding specifications.

Table 5: The RRSP Model Specifications

	Variable	Coding Specification
	RRSP Account	1 = yes, 0 otherwise
Wealth	Income	1 = less than $10,000, through 7 = $60,000 or more
	$Wealth_1$	1 = has other forms of savings / investment: 0 = otherwise
	$Wealth_2$	1 = has other assets such as home, cottage, business: 0 = otherwise
	$Wealth_3$	1 = has assets such as land and rental property: 0 = otherwise
	RPPs	1 = yes: 0 = otherwise
Attitude	Risk-Averse	1 = yes: 0 = otherwise
	Past_Exp	1 = had financial difficulties: 0 = did not have financial difficulties
Personal	Education	1 = University: 2 = PSE Diploma: 3 = some PSE: 4 = HS: 5 = less than HS
	Gender	1 = male: 2 = female
	Age_Group	1 = 15 to 29, through 8 = 60 years old or more
	Children_Age	1 = younger than 6: 2 = 6 to 15: 3 = 16 to 24
	Assoc_Memb	1 = holds a membership in a professional association: 0 = otherwise
	Bus_Training	1 = both formal & informal: 2 = formal: 3 = informal: 4 = no training
	Region	1 = Ontario: 2 = Quebec: 3 = Atlantic: 4 = Prairies: 5 = BC
Job	SE_Class	1 = inc_empl: 2 = inc_own-acc: 3 = uninc_empl: 4 = uninc_own-acc
	Multiple_Jobs	1 = multiple-job holder: 2 = single-job holder
	SE_Choice	1 = involuntary: 2 = discouraged: 3 = adjusted: 4 = voluntary
	Industry	1 = primary, through 6 = professional, scientific, & technical services
	Occupation	1 = processing & manufacturing, through 11 = management

Note: The reference category for the independent variables is listed last.

5.4.2 Independent Variables

As indicated before, not many studies have looked at factors associated with the RRSP participation of self-employed workers. While it may be plausible to assume that many factors found to be significant in the case of paid workers also play a role in the case of the self-employed, the structural and other discrepancies observed between the two groups necessitate an exploratory approach to this investigation. Included in this model are four groups of factors believed to influence the decision of a self-employed individual to contribute to RRSPs: wealth, attitude, personal characteristics, and business characteristics. The rationale and the source for each factor are explained below.

5.4.2.1 Wealth

The wealth index contains financial measures such as income, savings, and assets reported by the survey respondents, as well as employer-sponsored Registered Pension Plans (RPPs). While prior research found that high income is highly associated with high likelihood of RRSP participation (Palameta, 2003; Chung et al., 2004; DeVaney & Chien, 2000; Akyeampong, 1999), the same cannot be assumed with such certainty about the other components of the wealth vector. The reason for this uncertainty is that RRSPs are often used as both an alternative and a supplement to other forms of savings and investments. For instance, while Akyeampong (1999) and Fougere (2002) found a negative relationship between RPP and RRSP contributions, Palameta (2003) found a strong positive relationship. DeVaney and Chiremba (2005) also found that "habitual savers" are more likely to own a registered retirement savings plan than are non-savers; however, this finding did not pertain to the self-employed since, as a study subset, the self-employed were less likely to invest in a registered retirement account.

The present study hypothesizes that wealth, as a composite, will be positively related to RRSP participation, *ceteris paribus*. That is, those with higher income, those with employer-sponsored RPPs, those with other forms of savings and investments, as well as those owning other assets such as private property, will be more likely to own an RRSP account, controlling for all else. As explained in the previous model, the "Income" variable comes from the survey question that gathered self-reported "net revenue of unincorporated" and "gross personal income of incorporated" entities, before taxes and deductions. The collected responses were reported in 16 categories ranging from "less than $10,000" to "$75,000 or more" and the negative profits category. For the purpose of this study, the 16 categories were reduced to 7 and coded as: 1 = less than $10,000 or net loss; 2 = $10,000 to less than $20,000; 3 $20,000 to less than $30,000; 4 = $30,000 to less than $40,000; 5 $40,000 to less than $50,000; 6 = $50,000 to less than $60,000; and 7 = $60,000 per annum or more. As pointed out before, the last category is used as reference category in the analysis[17].

[17] The regression estimates were done using the SPSS-14 "categorical" procedure which automatically converts categorical variables such as income, age, and education into dummies. The reference category is represented in the INDICATOR contrast matrix as a row of zeros. Unless otherwise stated, the last category of each independent variable serves as the reference category. A sufficient number of observations was the main criteria applied when selecting the reference category for each categorical independent variable.

The question used to measure "$Wealth_1$" reads: *For your retirement, do you have some other forms of savings or investments (e.g. mutual funds, GICs, stocks, bonds outside the RRSP)?* A dummy variable was created, with positive responses coded as one, and negative responses coded as zero. Similarly, the question used to measure the "$Wealth_2$" variable states: *For your retirement, do you have assets such as equity in your home or cottage or business?* Confirmative responses were coded as one, and other responses were coded as zero. The data for the "$Wealth_3$" variable comes from the question: *For your retirement, do you have other assets such as land or rental property?* Again, positive responses were coded as one, and negative responses as zero. Finally, the variable labelled "RPPs" in *Table 5* comes from the question: *For your retirement, do you have your own pension plan from a paid job?* A dummy variable was created, with confirmatory responses coded as one, and negative responses as zero.

5.4.2.2 Entrepreneurial Attitude

The attitudinal factors included in this model consist of respondents' risk preferences and their perceptions of their financial stability. The risk variable was derived from the survey question which inquired "*if uncertainty, insecurity, risk and lack of stability*" was what respondents disliked about being self-employed. Those who answered yes were labelled risk-averse while those that answered no were labelled risk-seekers. While some posit that all self-employed individuals are risk-seekers, generally preferring to invest in their business instead of putting money into retirement plans (DeVaney & Chien, 2000), it is being hypothesized here that only risk-tolerant respondents would be likely to do that. DeVaney and Chiremba (2005) found that a higher tolerance of risk increases the likelihood of participation in retirement savings accounts in the paid labour market. Following the above logic, it is expected that, in the case of the self-employed, those who self-identified as risk-averse would be more likely to participate in retirement plans. The coding procedure, as illustrated in *Table 5*, assigned one for risk-averse individuals, and zero for risk-seeking individuals.

The second variable was derived from the question which asked: *Have you ever experienced personal financial difficulties as a result of being self-employed?* Since past experience influences perceptions about future prospects, it is being hypothesized here that those who answered yes are more likely to have negative expectations about future income and thus be less likely to make an investment in RRSPs. Those who answered no to this question are assumed to hold positive expectations about future income, and thus be more likely to make a contribution to

an RRSP account. This reasoning is based on the observation that the "self-employed are not willing to commit to retirement plans participation until income is known" (DeVaney & Chien, 2000: 35). This, however, can be argued in both directions, since negative experience may evoke better planning habits. As DeVaney and Chiremba (2005) found, planners in the general labour market are more likely to hold a retirement account. The coding procedure used with this variable is similar to the above, with 1 = had financial difficulties and 2 = did not have financial difficulties.

5.4.2.3 Personal Characteristics

The likelihood of participation in RRSPs has also been found to depend on a number of personal characteristics. This set of coefficients includes a range of variables such as age, gender, education, and the presence of dependent children in the household. It also includes the type of job-specific training, membership in professional associations, and region. The source and coding of each of these variables have been described in the preceding section.

Previous studies have found a strong positive relationship between RRSP contributions and higher levels of educational attainment (Chung et al., 2004; DeVaney & Chien, 2000; DeVaney & Chiremba, 2005). The gender variable gives mixed results, with some reporting that men are less likely to purchase a pension plan (Chung et al., 2004) while others find that average contributions to registered retirement plans is higher for men (Akyeampong, 1999).

With respect to the age variable, Chung et al., (2004) found that, relative to the reference group, aged 20 to 24, the likelihood of the next two cohorts, 25 to 29 and 30 to 34, tocontribute to a private pension plan increases by about 19 percent and 30 percent, respectively. The probability of the following cohorts, those aged 35 to 39 and 40 to 44, remained constant. Palameta (2003) came to the opposite conclusion — younger people are more likely than older people to contribute to an RRSP account. However, DeVaney and Chiremba (2005) found that younger people are less likely to hold retirement accounts than those in the older cohorts. Fougere (2002) found that the demand for RRSPs increases with age — up to age 65 — and declines after that.

The presence of young children in a household also produces mixed results. Some studies have found that the presence of children clearly influences the likelihood of an individual to participate

in RRSPs, yet the direction it takes depends on the age of a child. Palameta (2003: 33), for instance, found that "each additional child lowers the likelihood of contributing, especially for women." This relationship, however, changes into a positive one with adult children, those aged over 18. Hypothesizing the same relationship, DeVaney and Chiremba (2005) found no significance at all. While the aggregation technique in the SSE data file does not permit inference about the connection between adult children and the likelihood of RRSP contributions, the variable is included in the model for the purpose of testing the young child hypothesis.

To account for the unique needs and circumstances of the self-employed, the present study also adds job-related training into the equation, as well as membership in professional associations. These two variables are expected to play a significant role in RRSP participation, largely due to the information sharing and networking potential that comes with these two activities (Allen, 2000). The model also includes a regional factor, for exploratory purposes.

5.4.2.4 Work

Finally, the model includes work-related variables such as the class of self-employment, the choice to enter self-employment, industry sector, occupation, and the number of jobs a self-employed individual holds. Coding procedure for these variables has already been explained in the previous model. The study hypothesizes that incorporated self-employed employers and those who are voluntarily self-employed would be more likely to participate in RRSPs. A positive coefficient is also expected for multiple-job holders. No premises are made with regards to the industry and occupation variables.

5.5 The Benefits Model

5.5.1 Dependent Variable

The final model is designed primarily to examine the impact of income and substitution effects on a self-employed individual's likelihood to acquire health-related benefits coverage. A series of binary logistic regressions were run, controlling for a range of personal and job-related characteristics of the self-employed. In the first regression, the dependent variable, having at

least one health-related benefits coverage, was coded as one, while having no coverage at all was coded as zero. The number of plans, however, is meaningless unless the type of coverage is known. Hence, a set of three separate logistic regressions examined the likelihood of extended health, dental, and disability coverage, with positive responses for each coded as one and negative responses as zero.

The measure for the pooled model's dependent variable comes from a derived survey question that combined the following: *Now, I would like to ask you a few questions about benefit plans and insurance coverage.* (1) *Are you covered by a dental plan, other than a provincial plan?* (2) *Are you covered by a health plan, other than provincial medicare?* (3) *Have you purchased disability insurance that would provide you with income in the case of a long term health problem?* The three separate measures were taken from these same questions, individually. Each of these dependent variables was then regressed against the independent variables summarized in *Table 6* below.

Table 6: The Health-Related Benefits Coverage Model Specifications

	Variable	Coding Specification
	Health Benefits	1 = at least one coverage: 0 = no coverage at all
	Extend Health	1 = yes: 0 = otherwise
	Dental Plan	1 = yes: 0 = otherwise
	Disability Ins.	1 = yes: 0 = otherwise
Income & Wealth	Income	1 = less than $10,000, through 7 = $60,000 or more
	$Wealth_1$	1 = has other forms of savings / investment: 0 = otherwise
	$Wealth_2$	1 = has other assets such as home, cottage, business: 0 = otherwise
	$Wealth_3$	1 = has assets such as land and rental property: 0 = otherwise
	RRSPs	1 = yes: 0 = otherwise
Substitutes	Spouse_Work†	1 = public sector: 2 = private sector: 3 = self-employed
	Assoc_Memb	1 = holds a membership in a professional association: 0 = otherwise
	Multiple_Jobs	1 = multiple-job holder: 2 = single-job holder
	Region	1 = Ontario: 2 = Quebec: 3 = Atlantic: 4 = Prairies: 5 = BC
Personal Factors	Education	1 = University: 2 = PSE Diploma: 3 = some PSE: 4 = HS: 5 = less than HS
	Gender	1 = male: 2 = female
	Age_Group	1 = 15 to 29, through 8 = 60 years old or more
	Marital_Status	1 = single: 2 = widowed, separated, or divorced: 3 = married / common law
	Children_Age	1 = younger than 6: 2 = 6 to 15: 3 = 16 to 24
Business Factors	Tenure	1 = less than 2 years: 2 = 2-4: 3 = 5-9: 4 = 10-19: 5 = over 20 years
	SE_Class	1 = inc_empl: 2 = inc_own-acc: 3 = uninc_employ: 4 = uninc_own-acc
	Work_Arrang	1 = home-based: 2 = based outside the home
	Industry	1 = primary , through 6 = professional, scientific, & technical services
	Occupation	1 = processing & manufacturing, through 11 = management

† *This variable is omitted in the disability insurance regression. It is intended to measure the access to alternative ways of benefit coverage, which works only in the case of extended health and dental plans.*

5.5.2 Independent Variables

5.5.2.1 Income and Wealth Effect

As with the previous RRSP model, studies have found that income and other financial resources play a crucial role in whether or not a self-employed individual acquires health-related benefits coverage (Delage, 2002; Akyeampong & Sussman, 2003; Bates, 2004). Preliminary bivariate results for the present model (see *Appendix F*) also indicate a positive relationship, particularly with respect to income and assets such as a home or business. A significantly higher proportion of those reporting annual income of $60,000 or above have at least one benefit coverage — 14.4

percent, compared to about 4 percent who have no coverage at all. This discrepancy in coverage amounts to only about one percentage point among those earning below $20,000 per year.

Similar associations arise for the wealth-related variables; not controlling for other factors, savers are more likely than non-savers to have benefits coverage. The income and wealth measures are the same as specified in the previous model: seven categories of income and three different binary questions inquiring about the respondents' savings and investment practices, as well as wealth in the forms of different assets reported by the respondents. The model also includes the RRSP variable as an additional measure of savings behaviour and of the financial strength of the self-employed individual.

5.5.2.2 Availability of Close Substitutes

The extent to which substitutes are available is also likely to play a role in whether or not an individual will purchase health-related benefits plans. This, however, applies only to extended health and dental plans, for only these plans can be obtained from the coverage of a spouse, a partner, or a close relative. Disability coverage is usually obtained through direct purchase or membership in an association. There is also an alternative available to multiple-job holders to obtain coverage from their paid work. Having access to any of these alternatives can serve as an incentive not to purchase own coverage (Bates, 2004). Since the question asks whether or not self-employed individuals have coverage, and not whether or not they purchased it, access to any of the above would come out as a confirmative response to the asked question.

Regional distribution of the self-employed is more likely to serve as an incentive not to purchase private coverage because of the differences in the extent to which public health services are provided in the regions. Since health care in Canada falls under provincial and territorial jurisdiction, there are significant variations across the jurisdictions in the extent to which public health services are provided. Ontario, for instance, has the highest percentage of workers with both extended health and dental coverage. Saskatchewan, on the other hand, has the lowest percentage of workers with extended health coverage, while Quebec has the lowest percentage with dental plan coverage (Reesor & Lipsett, 1998).

Except for access to a spousal benefits plan, coding for all other variables in this category has been described in the previous income model. The response to the question regarding the spouse's class of work at his/her main job, if employed, was used as a proxy to measure the respondent's access to extended health and dental coverage[18]. This question was posed to all participants in LFS and was adopted by SSE. The original responses were coded in seven categories: public employee; private employee; private, self-employed incorporated, with employees; private, self-employed incorporated, with no employees; private, self-employed unincorporated, with employees; private, self-employed unincorporated, with no employees; and private, unpaid family worker.

For the purpose of the present study, these responses were collapsed into three categories and coded as 1 = public sector employee, 2 = private sector employee, and 3 = self-employed. The last category, private unpaid family worker, was removed from the sample. Both public and private sector employees have high coverage rates (Reesor & Lipsett, 1998); hence, it is expected that those whose spouses hold a paid job in either of these sectors will be more likely to have extended health and dental coverage than will those whose spouses are self-employed. Indeed, the bivariate analysis in *Appendix F* indicates an association between these two variables.

5.5.2.3 Personal Factors

Previous studies have found that full coverage increases directly with education and age; younger and less educated workers are less likely than older and highly educated workers to have health-related coverage (Akyeampong & Sussman, 2003). With respect to gender, Bates (2004) found that women are less likely than men to have benefits coverage. Marital status and the presence of children also seem to contribute, particularly to the desirability of extended health and dental care. Married individuals and individuals with dependent children are more likely to have at least one of these benefits coverages (Reesor & Lipsett, 1998; Akyeampong & Sussman, 2003). Again, the coding procedure for all personal characteristics has been described in the prior model.

[18] The SSE included two specific questions which could have been used to measure the availability of extended health and dental coverage through a spouse, a partner, or a close relative. These two questions, however, were directed only to respondents who said they were covered by these plans: *What is the source of your coverage?* Responses included a spouse's or partner's plan, own purchased plan, a plan purchased through an association, a plan through an employer at a paid job, and other. While this question is more explicit as to the source of coverage, the number of observations is insufficient, and including it creates correlation with the work status of a spouse or partner, which was judged to be a better measure for this variable.

5.5.2.4 Business Factors

Exploratory studies indicate that tenure and legal structure of the business may play a role in whether or not a self-employed individual acquires health-related benefits coverage. Applying a semi-structured interviews methodology, Bates (2004) found that in spite of the availability of insurance coverage through professional and other associations, the self-employed, particularly own-account women in the early stage of self-employment, are less likely to report benefits coverage. Self-employed workplace location was another factor that surfaced from these interviews; in most cases, access to disability insurance "is available only to people whose workplace is separate from their home" (Bates, 2004: 129). The present model also includes industry and occupational variables to test if variations found in the paid labour market also hold true in the case of the self-employed (Reesor & Lipsett, 1998).

The coding procedure for the tenure, legal structure of the business, industry, and occupational factors has been described before. It is expected that those who have been in business for a longer time will be more likely to have health-related coverage than newly established entrepreneurs. Also, based on previous research, it is expected that home-based entrepreneurs will be less likely to have health-related benefits coverage than those who work outside of the home. The industry and occupational factors were included for exploratory purposes. The next section presents the empirical results for each model separately.

6 Empirical Findings

6.1 The Income Model

6.1.1 Bivariate Analysis

Appendix A contains cross-tabulations for the income model. The bivariate analysis indicates that most of the included variables, except marital status, children's age, work experience, and the number of jobs held by respondents, are statistically significant[19]. With respect to the human capital variables, the Chi-Square test of independence indicates that both education and job-specific training are associated with the likelihood that one will make an annual income in excess of $40,000. This is particularly true for self-employed women. Just above one percent of self-employed women have less than high school education and also have earnings above $40,000 per year, compared to about 11 percent who have less than high school education and have an income of less than $40,000. Similarly, about 19 percent of women have taken no job-related training and earn less than $40,000, while 1.3 percent have taken no training and earn an income in excess of $40,000 per year[20].

The inferential statistics also reveal that hours worked are highly associated with income earned. Nine percent of the self-employed work 15 to 29 hours per week and earn less than $40,000; only 1.5 percent work 15 to 29 hours and earn above that income range. A similar result was found for those who work 30 to 34 hours, while the percentages converge for those working 40 hours a

[19] The Chi-Square statistics answer the question "Are the two variables independent?" by measuring the divergence of the observed data from the values that would be expected under the null hypothesis of no association. The formula used to compute the Chi-Square test statistics is $\chi 2 = \Sigma \frac{(Observed - Expected)2}{Expected}$, where the squares of the differences between the observed and expected values in each cell, divided by the expected value, are added across all of the cells in the contingency table. A significant result of this test (Asymp. Sig. $\leq .05$) means that the cells of a contingency table should be interpreted since the difference cannot be assigned to random sampling error.

[20] Although separate preliminary Chi-Square tests of independence were performed for men and women, only the aggregate results are presented in *Appendix A*. References are made only to statistically significant factors from the split gender models.

week or more. Only 5.5 percent of the self-employed work at home and report an income above $40,000, compared to about 17 percent who work outside the home and earn above $40,000.

A striking difference was noted with respect to the membership in professional and other associations variable. Only about 15 percent of the self-employed are non-members and earn $40,000 or more, compared to 40 percent who are non-members and earn less than $40,000. For the industry variable, there were notable findings for the arts, entertainment, accommodation, food, and culture sector, and the primary sector. Significantly larger percentages of the self-employed in these two industrial classifications report an income below $40,000.

With respect to the occupation variable, the largest disparity was revealed between the health and childcare occupations; only a few of the self-employed working in the health sector report an income below $40,000, while childcare and home support workers report the opposite. Finally, being involuntary self-employed is highly associated with lower earnings; only about two percent of the self-employed are involuntary self-employed and earn an income above $40,000, while 9.5 percent of the self-employed are involuntary self-employed and make less than $40,000. Similarly, 10.6 percent of the self-employed are own-account entrepreneurs earning above $40,000 per annum; 35.4 percent are own-account entrepreneurs earning below $40,000 per year.

6.1.2 Logistic Regression Report

Unstandardized logistic regression coefficients and estimated odds ratios for the statistically significant predictors in the income model are presented in *Table 7* and *Table 8* below. *Appendix B* contains the full regression report of all variables included in the income equation. The first column of each table shows the aggregate sample results, followed by the separate male and female samples. A total of 1,321 observations were included in the aggregate income model, while the male and female income models included 815 and 506 counts, respectively.

Table 7: The Income Model Logistic Regression Report

Statistically Significant Variables in the Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Gender						
Male	.877***	2.403				
Female						
Membership						
Member	.636***	1.889	.507**	1.661	1.607***	4.989
Non-Member						
SE Class						
Incorporated Employer	.808***	2.242	1.022***	2.779	.320	1.377
Incorporated Own-Account	.114	1.121	-.093	.911	1.451*	4.267
Unincorporated Employer	1.062***	2.892	1.225***	3.403	1.475*	4.371
Unincorporated Own-Account						
Tenure of Self-Employment						
<2 Years	-1.383***	.251	-1.681***	.186	-1.393	.248
2 — 4 Years	-1.177***	.308	-1.325***	.266	-1.401	.246
5 — 9 Years	-.513*	.599	-.709*	.492	-.190	.827
10 — 19 Years	-.311	.733	-.317	.727	-.358	.699
20 or More Years						
Self-Employment as a Choice						
Involuntary Self-Employed	-.867***	.420	-.719*	.487	-2.232**	.107
Discouraged Self-Employed	-.080	.923	-.062	.940	-.427	.653
Adjusted Self-Employed	.073	1.075	.092	1.096	-.132	.877
Voluntary Self-Employed						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

The models' estimates fit the data at an acceptable level, as judged by the Hosmer and Lemeshow Goodness-of-Fit test statistics: 0.213 for the full sample and 0.508 and 0.186 for male and female samples, respectively[21]. The two pseudo R-squares, Cox & Snell and Nagelkerke, for the full model are 0.335 and 0.451. The pseudo R-squares for the gender decomposition are 0.309 and 0.412 for the male sample and 0.437 and 0.652 for the female sample. This indicates that about 33 percent of the variation in the dependent variable is explained by the given predictors in the

[21] The Hosmer and Lemeshow's Goodness-of-Fit test divides subjects into deciles based on predicted probabilities and computes a Chi-Square from the observed and expected frequencies. A probability value is then computed from the Chi-square distribution with 8 degrees of freedom to test the fit of the logistic model. A well-fitting model exacts the Hosmer and Lemeshow's Goodness-of-Fit test to be ≥ 0.05.

full model and about 31 and 44 percent in the separate male and female samples, respectively. The model does not involve collinearity, as demonstrated by low VIF values in *Appendix C*.

The odds ratio of gender in the first column of *Table 7* indicates that, holding all else constant, a self-employed man is 2.403 times as likely to earn above $40,000 per year than is a self-employed woman. Having a membership in a professional or other association almost doubles the likelihood of a self-employed individual to earn an income in excess of $40,000. This holds true across gender but is particularly significant in the case of female entrepreneurs. Women who are members are almost 5 times as likely to be in the above $40,000 income range, relative to non-member self-employed women, all else constant. The estimated odds ratio for the membership variable in the male sample is 1.661, indicating that self-employed men who hold a membership in a professional or other association are about 66 percent more likely to make an annual income in excess of $40,000, relative to self-employed men without such a membership.

Being an incorporated employer, in the full model, doubles the likelihood of earning above $40,000 per annum, relative to being an unincorporated own-account entrepreneur. This, however, holds true only for the male sample; incorporated male employers are almost three times as likely as unincorporated own-account males to earn an income of $40,000 per year or more. There is insufficient evidence in the female sample to conclude that incorporation coupled with having employees affects the odds of earning an income in excess of $40,000.

Being an unincorporated employer, on the other hand, is significant in all cases. In the full model, unincorporated employers are almost three times as likely to make $40,000 or more per year as are unincorporated own-account entrepreneurs. The estimated odds in the split model are 3.403 and 4.371 for males and females, respectively. This implies that unincorporated male employers are 3.403 times as likely as unincorporated own-account males to earn $40,000 or more per year. Likewise, unincorporated female employers are 4.371 times as likely as unincorporated own-account females to earn an income in excess of $40,000 per year. There is also an indication that incorporation without employees in the female sample is related to the likelihood of earning $40,000 per year or more. As the last column in *Table 7* shows, the odds of incorporated own-account women earning $40,000 or more are 4.267 higher than the odds of unincorporated own-account women.

The tenure of self-employment is highly significant in the aggregate model, particularly for those who have been in business for less than 4 years. Newly established entrepreneurs, those in business for less than two years, and those in business for 2 to 4 years are about 75 and 70 percent, respectively, less likely to make an income in excess of $40,000 per year, relative to those who have been in business for 20 years or longer. Likewise, those who have been self-employed 5 to 9 years are about 40 percent less likely to earn $40,000 or more, relative to those operating their businesses for 20 years or more.

In the split model, self-employed males who have been in business for less than two years are about 80 percent less likely to earn $40,000 than are those in business for 20 or more years. Similarly, male entrepreneurs who have been self-employed 2 to 4 years are 73 percent less likely to earn $40,000 per year, while those in business for 5 to 9 years are about 51 percent less likely to earn $40,000 per year, relative to the same reference group. The logit coefficients are also negative in the female model; however, there is insufficient evidence to conclude that tenure affects self-employed women's earning power.

The choice of self-employment, however, is statistically significant in the female model; involuntarily self-employed women are about 90 percent less likely to earn an income in excess of $40,000 relative to voluntarily self-employed women. The findings also apply to the male sample; involuntarily self-employed men are about 51 percent less likely to earn $40,000 per year, compared to voluntarily self-employed males. For the aggregate model, the odds of earning an income of $40,000 or more are 58 percent lower for the involuntarily self-employed, compared to the reference category. This finding is significant at a 99 percent confidence level.

As illustrated in *Table 8* below, the number of jobs held by the respondents is statistically insignificant in the aggregate model. However, the split model reveals that the number of jobs held affects the likelihood of earning an income of $40,000 or more, although the logits carry the opposite signs for males and females. While self-employed males holding multiple jobs are almost three times as likely to report an income of $40,000 or more, relative to self-employed males holding a single job, self-employed females holding multiple jobs are over 90 percent less likely to report an income of $40,000 or more, relative to single-job self-employed females.

Table 8: The Income Model Logistic Regression Report (continued)

Statistically Significant Variables in the Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Jobs Held						
Multiple-Job Holder	.209	1.232	1.216**	3.374	-2.475*	.084
Single-Job Holder						
Hours per week						
<15	-.694	.499	.783	2.188	-19.032	.000
15 — 29	-1.004**	.366	-.343	.710	-1.324*	.266
30 — 34	-1.680***	.186	-3.065***	.047	-1.463*	.231
35 — 39	-.082	.921	-.815	.443	.473	1.605
40	-.087	.916	.062	1.064	-.383	.682
41— 49	.165	1.179	.075	1.078	.674	1.962
50 Hours or More						
Industry						
Primary Sector	.110	1.116	.669	1.952	.256	1.292
Construction	.273	1.314	.267	1.306	2.206	9.081
Manuf, Transp & Warehousing	.280	1.323	.196	1.217	3.279**	26.559
Wholesale & Retail Trade	-.223	.800	.163	.849	-.279	.756
Arts, Ent., Acc, Food, & Culture	-.878**	.415	-.742	.476	-1.939**	.144
Profess, Sci, & Tech Services						
Occupation						
Processing & Manufacturing	.348	1.417	.626	1.869	-3.162	.042
Unique to Primary Industry	-1.313*	.269	-1.831**	.160	-2.096	.123
Trades, Transport, & Equipment	-.349	.706	-.197	.821	-2.201	.111
Childcare & Home Support	-3.764**	.023	-21.173	.000	-4.095*	.017
Sales & Service	.254	1.289	.123	1.131	1.465*	4.328
Art, Culture, Recreation, & Sport	.574	1.776	.699	2.011	.510	1.665
Social Science & Education	1.044*	2.839	1.269*	3.556	.789	2.200
Health	1.700**	5.474	1.516	4.556	1.412	4.102
Natural & Applied Science	.947*	2.578	1.157**	3.179	4.391*	80.735
Bus, Fin, & Administration	.705*	2.024	1.369**	3.931	-.170	.844
Management						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

The number of hours worked is statistically significant for both males and females. The aggregate income model shows that working 15 to 29 hours per week and 30 to 34 hours per

week decreases the likelihood of earning an income of $40,000 or more by 63 percent and 81 percent, respectively, relative to the reference group who work 50 hours per week or more. This is especially true of women. The likelihood of women who work 15 to 29 hours per week earning an income of $40,000 or more decreases by 73 percent, while the likelihood of women working 30 to 34 hours per week decreases by 77 percent, relative to women working 50 hours per week or more. In the male sample, only the second category has statistical significance attached to it; self-employed men working 30 to 34 hours per week are about 95 percent less likely to earn an income of $40,000 per year or more.

Industrial distribution in the aggregate model indicates that self-employed workers in the arts, entertainment, accommodation, food, and culture sector are about 58 percent less likely to earn $40,000 or more, relative to those self-employed in the professional and technical services sector. This, however, carries no statistical significance in the case of self-employed men. Women employed in this sector are about 86 percent less likely to earn an annual income of $40,000 or more, relative to women self-employed in the professional and technical services sector. Women entrepreneurs working in the manufacturing, trasportation, and warehousing sector, however, are over 26 times as likely to earn an income of $40,000 or more as women self-employed in the professional and technical services sector.

Relative to management occupations, occupations unique to primary industry, as well as occupations in the childcare and home support sector, are negatively related to the odds of earning an income in excess of $40,000, according to the aggregate model. Looking at the split model, self-employed men working in occupations unique to primary industry are 84 percent less likely to earn $40,000 or more, relative to self-employed men in management occupations. The odds of female entrepreneurs working in childcare and home support earning $40,000 or more decrease by about 99 percent, relative to self-employed women in management occupations.

The odds of making an income of $40,000 or more, relative to workers in management occupations, increase for workers in social science and education occupations, natural, and applied science occupations, health occupations, and business, finance, and administrative occupations. Self-employed men in social science and education are over three times as likely to earn $40,000 or more than are self-employed men in management occupations. Similarly, self-employed women in social science and education occupations are over twice as likely to earn

$40,000 or more, relative to self-employed women in management occupations. Both self-employed men and self-employed women are over 4 times as likely to earn $40,000 or more in health occupations, relative to self-employed men and women in management occupations.

The odds of earning $40,000 or more are three times as high for self-employed men in natural and applied sciences and 80 times higher for women in the same occupation category, relative to the respective reference groups. Self-employed women in business, finance, and administration occupations are slightly less likely to earn an income of $40,000 or more, relative to women in management occupations. Self-employed men in this occupation category, on the other hand, are almost four times as likely to earn such an income, relative to self-employed men in management.

The full regressions results provided in *Appendix B* show insufficient evidence to conclude that business training, immigration status, and work arrangements affect the odds of self-employed men and women being in the above $40,000 income category. Age, education level, region, and previous work experience, on the other hand, carry statistical significance for selected samples. For instance, having no previous work experience does not result in a negative coefficient for self-employed men. Having previous self-employment experience almost triples the likelihood of self-employed men earning $40,000 or more per year, relative to having both paid work and self-employment experience. In the female sample, having no experience at all or having only paid-work experience is negatively related to the odds of earning $40,000 or more. The findings for the female sample, however, carry no statistical significance.

Education, on the other hand, seems to be significant for self-employed women, although the coefficient sign is in direct contradiction to what the human capital theory would suggest. Self-employed women with some postsecondary education are about 85 percent less likely to earn $40,000 per annum, relative to self-employed women who have less than high school education. Similarly, while no statistical significance is found in the female sample with respect to the age variable, self-employed men in the 30 to 34 and 35 to 39 age groups are 4.314 and 4.387 times as likely to earn $40,000 or more, respectively, relative to self-employed men aged 60 or more.

Finally, with respect to region, the full model indicates that the odds of earning an income of $40,000 or more decrease by about 49 percent for entrepreneurs operating in Quebec, relative to those in British Columbia. This finding, however, is statistically insignificant in the case of self-

employed women. Self-employed men in Quebec are about 59 percent less likely to earn $40,000 or more, relative to self-employed men in British Columbia.

6.2 The RRSP Model

6.2.1 Bivariate Analysis

The cross-tabulated statistics in *Appendix D* offer a preliminary look at the propensity of the self-employed to hold an RRSP account. Judging by the small Chi-Square statistics, gender does not seem to play a significant role in this model. Similarly, the small Chi-Square values and Asymp. Sig. $\geq .05$ of risk orientation, the number of jobs held, children's age, and region indicate that these factors and RRSP participation are likely to be independent of each other.

The large Chi-Square statistics value for income levels, on the other hand, indicates that it is unlikely that these variables are independent of each other. With the exception of the $40,000 to less than $60,000 income levels, the rate of RRSP participation increases consistently as income increases. The proportion of RRSP participants and non-participants is very similar at the lower income levels. At the highest income level, only 2.5 percent of the self-employed have an income of $60,000 or more and do not have an RRSP account, compared to 19.1 percent who earn that much and do have an RRSP.

A similar pattern is revealed with respect to other forms of savings and investments, as well as having assets in a home or business. The Chi-Square statistics tests show that there is an association between RRSP participation and these two variables. Similar percentages of RRSP participants and non-participants are found in the group of those without other forms of savings and investments. On the other hand, the group of those that do have other forms of savings and investments included only 5 percent (of the total number of the self-employed) who do not have RRSPs, compared to about 39 percent who do. Similarly, the group of those holding assets in a home or business includes about 19 percent (of the total number of the self-employed) who are non-participants in RRSPs and about 59 percent who are participants; the group of those who report not having such assets includes about 12 percent who are non-participants and 10 percent who are participants in RRSPs.

While participation in RRSPs seems to increase with education, the age variable is likely to be weakly associated with RRSP participation. Membership in an association also seems to be associated with RRSPs participation; while about 6 percent of the self-employed hold a membership in an association and are non-participants in RRSPs, over 24 percent hold a membership and are participants in RRSPs. On the non-members' side, there are about 25 percent of the self-employed who are non-participants, compared to about 45 percent who are participants in RRSPs. The large value of Chi-Square statistics for the membership variable indicates that there is a strong association between this variable and RRSP participation.

Similar percentages of those who have taken only formal training are participants and non-participants in RRSPs. Discrepancies, however, are revealed with those who took informal training only (19 percentage points) and those who took both formal and informal training (about 17 percentage points). Likewise, similar percentages of unincorporated own-account entrepreneurs are participants and non-participants in RRSPs, while the discrepancy amounts to 17.5 percentage points for incorporated employers. The discrepancy for involuntary self-employed workers is just over half of a percentage point, while for voluntarily self-employed workers the discrepancy amounts to over 29 percentage points.

6.2.2 Regression Report

The statistically significant variables from the RRSP model are presented in *Table 9* and *Table 10* below, while *Appendix E* contains the full regression report. A total of 1,531 cases were included in the analysis, with the male sample accounting for 965 cases and the female sample for 566 cases. The Hosmer and Lemeshow's Goodness-of-Fit test statistics of 0.760 for the full sample and 0.370 for the male and 0.662 for the female samples, indicate well-fitting models. The full model's pseudo R-squares, 0.298 for Cox and Snell's and 0.431 for Negelkerke's, show that about 30 percent of the variation in RRSP participation is explained by the given independent variables. In the male sample, the two pseudo R-squares are 0.315 and 0.462, while in the female sample they are 0.345 and 0.486. This means that the given predictors explain about 31 percent of the variation in the dependent variable in the male sample and about 34 percent in the female sample. The low VIF values in *Appendix C* signify the absence of collinearity in this model.

Table 9: The RRSP Model Logistic Regression Report

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-2.232***	.107	-2.038***	.130	-3.249***	.039
$10,000 to <$20,000	-1.373***	.253	-1.160**	.314	-2.377**	.093
$20,000 to <$30,000	-.696*	.499	-.653*	.520	-1.674	.188
$30,000 to <$40,000	-.550*	.577	-.349	.706	-1.647	.193
$40,000 to <$50,000	-.393	.675	-.418	.658	.056	1.057
$50,000 to <$60,000	-.189	.827	.039	1.040	-1.374	.253
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	1.524***	4.591	1.514***	4.547	1.760***	5.814
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.939***	2.556	1.247***	3.481	.440	1.552
Does Not Have Such Assets						
Wealth $_3$						
Has Assets in Land & Prop	-.504**	.604	-.609**	.544	-.654	.520
Does Not Have Land & Prop						
RPPs						
Has Own RPPs	.457*	1.580	.344	1.411	.707	2.027
Does Not Have Own RPPs						
Past Financial Experiences						
Had Financial Difficulties	-.546***	.579	-.616**	.540	-.604*	.546
Did Not Have Financial Diff.						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

As the unstandardized logit coefficients in *Table 9* illustrate, the odds of having an RRSP account are negatively related to having an annual income below $60,000. The only exception to this is found in the female sample for the $40,000 to less than $50,000 income category. This coefficient, however, is statistically insignificant. The first column of *Table 9* indicates that, for the whole sample, the odds of having an RRSP decrease by about 89 percent for the less than $10,000 income category and by about 75 percent for the $10,000 to less than $20,000 income category, relative to the $60,000 or more income group. The odds fall to about 50 percent and

about 42 percent, respectively, for the $20,000 to less than $30,000 and the $30,000 to less than $40,000 categories.

The split sample reveals that, relative to self-employed women who earn an income of $60,000 or more, the likelihood of self-employed women who earn less than $10,000 to participate in RRSPs decreases by about 96 percent; it decreases by about 91 percent for women in the $10,000 to less than $20,000 income category. Similarly, self-employed men earning less than $10,000 are about 87 percent less likely to invest in an RRSP account, relative to self-employed men earning $60,000 or more; the likelihood for male entrepreneurs earning $10,000 to less than $20,000 and $20,000 to less than $30,000 per year decreases by about 67 and 48 percent, respectively.

Having other forms of savings and investments is highly and positively related to the likelihood that self-employed individuals will participate in RRSPs. The odds that a saver or an investor in the whole sample owns an RRSP account are 4.591 times the odds for a non-saver and non-investor. The odds magnitudes are quite uniform across gender, and these statistics are significant at a 99 percent confidence interval. Having other assets in a home or business is also positively related to the likelihood of having an RRSP account, although the statistical significance is absent in the case of self-employed women. For the full sample, having such assets relative to not having such assets doubles the likelihood of RRSP participation, and in the case of self-employed men, the odds are tripled.

Having assets in land or rental property, on the other hand, is negatively related to the likelihood of RRSP participation. Again, the finding is statistically insignificant in the case of self-employed women. For the total sample, the likelihood of a landowner to participate in RRSPs decreases by about 40 percent, relative to the likelihood of those who do not own such assets. In the case of self-employed men, the likelihood decreases by about 46 percent, relative to the reference category. The total sample shows that having one's own registered pension plan through paid work is positively related to RRSP participation. Those who have RPPs are about 58 percent more likely to participate in RRSPs. The split model, however, fails to reveal this since neither men nor women RPP holders are significantly more likely to participate in RRSPs.

Being risk-averse is negatively related to the likelihood of RRSP participation for the total sample as well as for self-employed men. In the case of self-employed women, risk-aversion is

positively related to RRSP participation. Neither of these, however, is statistically significant, as illustrated in *Appendix E*. Having experienced prior financial difficulties, on the other hand, is statistically significant and negatively related to RRSP participation in all cases. Relative to those who have not experienced prior financial difficulties being self-employed, self-employed men and self-employed women who have experienced prior financial difficulties are about 46 and 45 percent less likely to invest in RRSPs, respectively. For the sample as a whole, the self-employed are about 42 percent less likely to participate in RRSPs if prior financial difficulties have been encountered.

Although statistically insignificant, it is worth pointing out that higher education, as shown in *Table 10* above, is negatively related to the likelihood of self-employed men to participate in RRSPs. The unstandardized logits in the case of self-employed women are positive. However, with the exception of a postsecondary diploma, educational attainment is statistically insignificant for women, too. As illustrated in *Table 10*, self-employed women who have a postsecondary diploma or certificate are almost as three times as likely to participate in RRSPs as are self-employed women with less than a high school diploma.

Job-specific training is also statistically insignificant in the case of self-employed women. In fact, *Table 10* shows negative logits for the informal training only category and for the both formal and informal training category in the case of self-employed women. The logits for self-employed men, on the other hand, are all positive, and statistically significant in two instances. Self-employed men with both formal and informal training are 6 times as likely to own an RRSP as are self-employed men without job-related training. Furthermore, having informal training relative to having no training at all doubles the likelihood of being an RRSP participant in the case of self-employed men.

Table 10: The RRSP Model Logistic Regression Report (continued)

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Education						
University	-.080	.923	-.515	.598	1.066	2.903
PSE Diploma	.165	1.179	-.134	.875	1.072*	2.920
Some PSE	-.185	.837	-.181	.834	.552	1.737
HS Diploma	-.091	.913	-.331	.718	.745	2.106
<HS Diploma						
Job-Specific Training						
Formal & Informal	1.072***	2.920	1.799***	6.046	-.149	.862
Formal Training Only	2.19*	7.527	2.057	7.825	1.395	4.035
Informal Training Only	.357	1.429	.730**	2.075	-.478	.620
No Job-Specific Training						
Class of Self-Employment						
Incorporated Employer	1.099***	3.002	1.260***	3.526	.748	2.112
Incorporated Own-Account	.408	1.503	.354	1.424	.670	1.955
Unincorporated Employer	.435	1.546	.657*	1.930	-.092	.912
Unincorporated Own-Account						
Number of Jobs Held						
Multiple-Job Holder	1.111**	3.039	1.297*	3.659	1.013	2.753
Single-Job Holder						
Self-Employment Choice						
Involuntary Self-Employed	-.194	.824	-.254	.776	-.024	.977
Discouraged Self-Employed	.416*	1.516	.550*	1.733	.393	1.481
Adjusted Self-Employed	-.260	.771	-.331	.718	-.109	.897
Voluntary Self-Employed						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

Being an incorporated employer is also positively related to RRSP participation, although in the case of self-employed women it is statistically insignificant. For the sample as a whole, however, and for the male sample in particular, the odds of incorporated employers investing in an RRSP account are about 3 times the odds for unincorporated own-account entrepreneurs. The male sample also shows that the odds of RRSP participation increase by 93 percent for unincorporated male employers, relative to unincorporated own-account males. Similarly, self-employed men holding multiple jobs are about 4 times as likely to own an RRSP account, relative to self-

employed men holding a single job. A similar odds magnitude is found in the total sample, while the female sample shows no statistical significance with respect to this variable.

Finally, relative to voluntary self-employed workers, the involuntary self-employed and adjusted self-employed categories are negatively related to the likelihood of RRSP participation. This finding, however, is statistically insignificant in all three samples. The only category showing statistical significance, at a 95 percent confidence interval is the discouraged self-employed. This category has a positive logit coefficient in all three samples, but is only statistically significant in the total sample and in the case of self-employed men. Overall, discouraged self-employed people are about 52 percent more likely than voluntary self-employed people to own an RRSP account. In the male sample, discouraged self-employed men are about 73 percent more likely to own an RRSP account, relative to voluntary self-employed men.

The RRSPs regression report gives insufficient evidence to conclude that the age of self-employed individuals, the age of their children, membership in a professional or other association, or regional or industrial distribution has any impact on the likelihood of being an RRSP participant. The full model results in *Appendix E* show that there is only one instance where occupational classification matters; self-employed men in natural and applied science occupations are almost as 4 times as likely to own an RRSP account as are self-employed men in management occupations. The unstandardized logits are negative for males in processing and manufacturing occupations; trades, transportation, and equipment operation occupations; occupations unique to primary industry. In the case of self-employed women, the logits are negative for the sales and service and the trades, transportation, and equipment operation categories. The results for these occupations, however, are statistically insignificant.

6.3 The Benefits Model

6.3.1 Bivariate Analysis

The contingency table in *Appendix F* compares the frequencies of the aggregate benefits coverage model. The large Chi-Square statistics value for having an RRSP account indicates a high level of association between this variable and health-related benefits coverage. About 46 percent of the

self-employed are RRSP participants and have at least one health-related benefits coverage, while 21 percent are RRSP participants but do not have any coverage. The percentages for non-participants are similar, with about 15 percent having no RRSP but at least one coverage and about 18 percent being without either an RRSP or any health-related benefits coverage.

A pattern similar to the previous model appears with respect to the lower income groups. Only 4 percent of the self-employed are at the $60,000 or more income level and do not have any benefits coverage at all, while14.4 percent are at that level and have at least one coverage. The discrepancy between those who have other forms of savings and investments is about 18 percentage points, while the discrepancy between those who do not have other forms of savings and investments is less than 3 percentage points. Similarly, the difference for those holding assets in a home or business is about 24 percentage points, while the propensity of those without such assets to have health-related benefits coverage differs by only about 3 percentage points.

Although the Chi-Square statistics indicate that there is an association between having assets in land and other property and health-related benefits coverage, the percentage point differences for those who have such assets and those who do not is very similar, about 10 percentage points. Having a spouse or a partner employed in either the private or public sector is highly associated with having health-related benefits coverage. The percentage point difference between having at least one coverage and not having coverage at all is 12 for the public sector employee and about 18 for the private sector employee. The percentage point divergence in the case of those whose spouse or partner is self-employed is less than 3.

Membership in a professional or other association is also associated with having at lest one health-related benefits coverage. About 30 percent of members have at lest one benefits coverage, and about 13 percent do not have coverage at all. The discrepancy in percentages for non-members is only about 4 percent. Higher educational level, higher tenure of current self-employment, and incorporation status are all associated with having benefits coverage. This does not appear to be the case with work arrangement, number of jobs held by the respondents, gender, region, the age of the respondents, nor the age of their children.

The professional, scientific, and technical services industry shows the largest gap between those who have at least one coverage and those who have no coverage at all, 10 percentage points.

About 18 percent of the self-employed are in occupations unique to primary industry and have at least one coverage, while about 8 percent are in those occupations and do not have coverage. Similarly, the proportions of the self-employed who are in occupations involving trades, transportation, and equipment operation and have at least one plan or no coverage at all are 17.4 percent and 7.2 percent, respectively. Finally, a very low percentage of the self-employed have no health-related coverage and work in social science and education occupations or health occupations, 0.8 and 0.6 percent respectively.

The following sections present the regression reports for the aggregate benefits coverage model. as well as the individual models for having a dental plan, extended health coverage, and disability insurance, all broken down by gender.

6.3.2 Regression Report: The Aggregate Benefits Model

Table 11 and *Table 12* below summarize the statistically significant regression results for the aggregate health-related benefits model. The full regression report for this model is presented in *Appendix G*. A total of 1,260 cases were included in the analysis of the full aggregate model, with self-employed men accounting for 771 cases and self-employed women accounting for 489 cases in the split models. The Hosmer and Lemeshow's Goodness-of-Fit test statistics of 0.851 for the full aggregate sample and 0.192 for the male sample and 0.099 for the female sample signify well-fitting models.

The given predictors, however, explain only about 21 percent of the variation in the dependent variable in the male sample and about 35 percent in the female sample, as indicated by the two pseudo R-squares, 0.208 and 0.296 for the male sample and 0.347 and 0.472 for the female sample. Likewise, only about 19 percent of the variation in the dependent variable of the full sample can be attributed to the assigned predictors, as illustrated by the two pseudo R-squares 0.191 and 0.267. The low VIF values in *Appendix C* suggest the absence of collinearity in the aggregate health-related benefits model.

Table 11: The Aggregate Benefits Model Regression Report

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-.065	.937	-.155	.856	-.448	.639
$10,000 to <$20,000	-.441	.643	-.857*	.424	-.709	.492
$20,000 to <$30,000	-.371	.690	-.134	.874	-1.508*	.221
$30,000 to <$40,000	-.168	.845	-.088	.916	-.823	.439
$40,000 to <$50,000	.412	1.510	.715	2.043	-1.095	.335
$50,000 to <$60,000	-.444	.641	-.158	.853	-2.866**	.057
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	.552***	1.737	.667**	1.948	.434	1.544
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.481*	1.618	.182	1.200	1.317**	3.731
Does Not Have Such Assets						
RRSPs						
Has Own RRSPs	.327	1.386	.183	1.201	.739*	2.093
Does Not Have Own RRSPs						
Spouse Work Status						
Public Sector Employee	1.828***	6.221	1.596***	4.933	3.168***	23.771
Private Sector Employee	1.275***	3.578	1.118***	3.058	2.081***	8.011
Self-Employed						
Membership in Associations						
Member	.524**	1.689	.697***	2.008	.281	1.325
Non-Member						
Region						
Ontario	.684**	1.983	.651*	1.917	.550	1.733
Quebec	.640*	1.897	.407	1.502	.911	2.486
Atlantic	.418	1.519	.332	1.393	.351	1.421
Prairies	1.047***	2.850	.847*	2.334	1.321*	3.747
British Columbia						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

The income variable, as illustrated in *Table 11*, is statistically insignificant for the full aggregate model. In the split model, however, self-employed men earning $10,000 to less than $20,000 per

year are about 58 percent less likely to have at least one health-related benefits coverage, relative to self-employed men earning $60,000 per year or more. Similarly, self-employed women earning $20,000 to less than $30,000 and those earning $50,000 to less than $60,000 are about 78 and 94 percent, respectively, less likely to have at least one health-related benefits coverage, relative to self-employed women earning an income of $60,000 or more. It should be noted, though, that, with the exception of the $40,000 to less than $50,000 income category in the full and male samples, the logit coefficients of the income variable are all negative.

Having other forms of savings and investments is positively related to benefits coverage and highly statistically significant for the full sample and for self-employed men, but not for self-employed women. Self-employed individuals who have other forms of savings and investments are about 74 percent more likely to have at least one health-related benefits coverage, relative to those who do not have other forms of savings or investments. Similarly, the likelihood of having at least one health-related benefits coverage in the male sample is 95 percent higher for those who have other forms of savings and investments, relative to those who do not.

Having assets in a home or business is also positively related to the likelihood of having health-related benefits coverage, although it is statistically insignificant in the case of self-employed men. Self-employed individuals in the full model are about 62 percent more likely to have at least one health-related benefits coverage if they have assets in a home or business, relative to those who report not having such assets. Self-employed women with assets in a home or business are almost 4 times as likely to have at least one benefits coverage as are those who do not have such assets. Also, in the female sample, having an RRSP account doubles the likelihood of having at least one health-related benefits coverage, relative to not having an RRSP account. Although with a positive logit coefficient, this variable is statistically insignificant in the full model and in the self-employed male sample.

Having a spouse or a partner employed in either the private or public sector is the most significant variable in the aggregate benefits model. Self-employed individuals in the full aggregate model who have a spouse or a partner employed in the public sector are 6.221 times as likely to have at lest one health-related benefits coverage relative to those whose spouse or partner is self-employed. Similarly, those whose spouse or partner is employed in the private sector are 3.578

times as likely to have at least one health-related benefits coverage, relative to those whose spouse or partner is self-employed.

In the split sample, self-employed men whose spouse or partner is employed in the public or private sectors are 4.933 and 3.058 times respectively as likely to have at least one health-related benefits coverage as are those whose spouse or partner is self-employed. The odds of self-employed women having at least one health-related benefits coverage are 22.771 times higher if they have a spouse or partner working in the public sector and 7.011 times higher if their spouse or partner works in the private sector, relative to those whose spouse or partner is self-employed.

Having a membership in a professional or other association is positively related to benefits coverage, although in the case of self-employed women it is statistically insignificant. For the full model, however, self-employed members are about 69 percent more likely to have at least one health-related benefits coverage than are non-members. The odds double for self-employed male members, relative to self-employed male non-members.

With respect to regional distribution, living in Ontario, Quebec, or the Prairies is positively related to having at least one benefits coverage. The likelihood for those working in Ontario and in Quebec, relative to those working in British Columbia, increases by about 98 and 90 percent, respectively. Similarly, the odds of having at least one health-related benefits coverage are 2.850 times as high for those living in the Prairies region, relative to those living in British Columbia. In the case of self-employed women, those working in the Prairies region are 3.747 times as likely to have at least one health-related benefits coverage, relative to those living in British Columbia. The benefits coverage odds of self-employed men living in Ontario and the Prairies region are about 92 and 133 percent higher, respectively, relative to the odds for self-employed men living in British Columbia.

Table 12 contains the rest of the statistically significant variables from the aggregate benefits model. As illustrated below, education is statistically insignificant in the case of self-employed men. Self-employed women with university education are 5.260 times as likely to have at lest one health-related benefits coverage, relative to self-employed women with less than a high school diploma. Similarly, self-employed women with some postsecondary education are 4.848 times as likely to have at least one coverage, relative to the same reference group. In the full

model, the odds of coverage for the university-educated self-employed are about 89 percent higher and the odds for those with some postsecondary education are doubled, relative to those with less than a high school diploma.

Table 12: The Aggregate Benefits Model Regression Report (continued)

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Education						
University	.639*	1.895	.590	1.804	1.660**	5.260
PSE Diploma	.377	1.458	.392	1.480	.843	2.324
Some PSE	.717*	2.048	.308	1.361	1.579*	4.848
HS Diploma	.220	1.246	.198	1.219	.908	2.480
<HS Diploma						
Children Age						
<6	-.887**	.412	-.826	.438	-1.828**	.161
6 — 15	-.356	.701	-.185	.831	-1.193**	.303
16 — 24						
Class of Self-Employment						
Incorporated Employer	-.152	.859	-.006	.994	-.064	.938
Incorporated Own-Account	.509*	1.663	.874**	2.397	-.614	.541
Unincorporated Employer	-.622**	.537	-.754*	.470	.267	1.306
Unincorporated Own-Account						
Industry						
Primary Sector	.613	1.845	1.444*	4.238	-2.453	.086
Construction	-.278	.757	.056	1.058	-2.825*	.059
Manuf, Transp & Warehousing	.455	1.576	.826	2.283	-.020	.980
Wholesale & Retail Trade	.213	1.237	.264	1.302	.181	1.198
Arts, Ent, Acc, Food, & Culture	-.433	.648	-.181	.834	-.675	.509
Profess, Sci, & Tech Services						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

Although negatively related to benefits coverage across gender, the age variable is statistically significant only in the case of self-employed men, as shown in *Appendix G*. Both males aged 40 to 44 and males aged 55 to 59 are about 86 percent less likely to have at least one health-related benefits coverage, relative to self-employed men aged 60 and over. The age of own children is

insignificant in the male sample, as *Table 12* illustrates. Self-employed females whose children are younger than 6 or aged 6 to 15 are about 84 and 70 percent less likely, respectively, to have at least one health-related benefits coverage, relative to self-employed women whose children are aged 16 to 24. In the full sample, only self-employed individuals who have children under age 6 are less likely (about 59 percent) to have at least one health-related benefits coverage, relative to those whose children are 16 to 24 years of age.

Being incorporated own-account self-employed, relative to being unincorporated own-account self-employed, increases the likelihood of having at least one benefits coverage by about 66 percent in the full sample and by about 140 percent in the male sample. The likelihood decreases in the case of incorporated own-account women, although the finding is statistically insignificant. Similarly, being an unincorporated employer decreases the odds of having at least one health-related benefits coverage by about 46 percent in the full sample and by about 53 percent in the male sample, relative to being unincorporated own-account self-employed. The coefficient for this variable is positive in the case of self-employed women, although it carries no statistical significance.

The results for the industrial distribution in *Table 12* show that self-employed men in the primary sector are 4.238 times as likely to have at least one health-related benefits coverage, relative to self-employed men in professional, scientific, and technical services occupations. However, looking at the occupational profile in *Appendix G*, self-employed men in occupations unique to primary industry are about 74 percent less likely to have at least one health-related benefits coverage, relative to self-employed men in management occupations.

Similarly, the industrial distribution in *Table 12* indicates that self-employed women in the construction industry are about 94 percent less likely to have at least one health-related benefits coverage, relative to self-employed women in professional, scientific, and technical services industries. The occupational profile in *Appendix G*, however, reveals that self-employed women in occupations unique to primary industry are almost 23 times as likely to have at least one health-related benefits coverage, relative to self-employed women in management occupations. *Appendix G* also reveals that the odds of having at least one coverage are 7.667 times higher for women in trades, transportation, and equipment operation than for women in management occupations.

The tenure of current self-employment, work arrangement, and the number of jobs held by respondents are statistically insignificant in the aggregate health-related benefits model. Likewise, there is insufficient evidence to conclude that being a landowner affects the likelihood of self-employed individuals to have at least one health-related benefits coverage.

6.3.3 Regression Report: The Dental Plan Model

The statistically significant regression results for the dental model are presented in *Table 13* and *Table 14* below, while the table containing the full results is shown in *Appendix H.* The dental model fits the data at an acceptable level, as indicated by the Hosmer and Lemeshow's Goodness-of-Fit test statistics of 0.108 for the full sample, 0.628 for the male sample and 0.558 for the female sample.

The given predictors explain about 22 percent of the variation in the dependent variable in the male sample and about 32 percent in the female sample, as indicated by the two pseudo R-squares, 0.216 and 0.290 for the male sample and 0.316 and 0.425 for the female sample. About 20 percent of the variation in the dependent variable in the full sample can be attributed to the assigned predictors, as illustrated by the two pseudo R-squares, 0.198 and 0.262.

As the first column of *Appendix H* shows, except for the first and fifth categories, the income variable is negatively related to dental coverage, but the result is significant only in one instance at the aggregate level. Self-employed individuals earning $50,000 to less than $60,000 are about 44 percent less likely to have a dental plan, relative to those earning $60,000 or more.

Table 13, however, shows that having other forms of savings and investments is positively related to having dental coverage and statistically significant for the full sample as well as for the self-employed men sample. The likelihood of having dental coverage increases by about 45 percent in the full sample level and by about 49 percent in the male sample for those who are habitual savers or investors, relative to non-savers and non-investors.

Table 13: The Dental Coverage Model Regression Report

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Wealth 1						
Has Other Forms of Sav / Inv	.374**	1.453	.397*	1.487	.367	1.443
Does Not Have Other Sav / Inv						
Wealth 2						
Has Assets in Home / Business	.513*	1.670	.223	1.249	1.190**	3.286
Does Not Have Such Assets						
Spouse Work Status						
Public Sector Employee	1.751***	5.758	1.805***	6.082	1.455***	4.285
Private Sector Employee	1.434***	4.196	1.297***	3.658	1.824***	6.197
Self-Employed						
Membership in Associations						
Member	.188	1.207	.441*	1.554	-.212	.809
Non-Member						
Number of Jobs						
Multiple-Job Holder	.633*	1.884	.987*	2.684	-.343	.709
Single-Job Holder						
Region						
Ontario	.082	1.085	-.217	.805	.800	2.226
Quebec	-.973***	.378	-1.128***	.324	-.975*	.377
Atlantic	-.151	.860	-.354	.702	.141	1.151
Prairies	.325	1.384	.064	1.066	.940*	2.560
British Columbia						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

Assets held in a home or business are also positively related to having dental coverage, only this time the coefficients are statistically significant for the full and the female samples only. The full sample indicates that self-employed individuals with assets in a home or business are 67 percent more likely than those without such assets to have dental coverage. In the female sample, self-employed women holding assets in a home or business are more than three times as likely as self-employed women without such assets to have dental coverage.

By far the most significant factor, however, is whether or not an individual has a spouse or a partner employed in either the public or the private sector. In the full model, for instance, the odds of having dental coverage are 4.758 times higher if the spouse or partner works in the public sector and 3.196 times higher if the spouse or partner works in the private sector, relative to having a self-employed spouse or partner. Similarly, the odds of self-employed men having dental coverage are over 5 times higher if their spouse or partner works in the public sector and almost 3 times higher if their spouse or partner works in the private sector, relative to having a self-employed spouse or partner. Finally, self-employed women are 4.285 times as likely to have dental coverage if their spouse or partner works in the public sector and 6.197 times more likely to have such coverage if their spouse works in the private sector, relative to self-employed women whose spouse or partner is self-employed.

Both having a membership in an association and holding multiple jobs are positively related to having dental coverage in the self-employed men sample. In the female sample, these coefficients are negative and statistically insignificant. The odds of male association members having dental coverage, relative to male non-members, are 55 percent higher. Similarly, relative to single-job holders, multiple-job holders are about 88 percent more likely to have dental coverage in the full sample and almost three times as likely in the self-employed male sample.

With respect to region, the full sample indicates that self-employed individuals living in Quebec are about 62 percent less likely to have dental coverage, relative to self-employed individuals living in British Columbia. The female sample shows the same odds ratio for self-employed women living in Quebec, relative to those living in British Columbia, while the odds in the male sample decrease by 68 percent. Self-employed women living in the Prairies, however, are almost three times as likely to have dental coverage as are self-employed women living in British Columbia.

The education variable, as shown in *Table 14* below is significant only in the female sample. Self-employed women with university education, as well as those with some postsecondary education, are about 4 times as likely to have dental coverage as are self-employed women with less than a high school diploma.

Table 14: The Dental Coverage Model Regression Report (continued)

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Education						
University	.222	1.248	-.035	.965	1.408*	4.087
PSE Diploma	-.020	.980	-.298	.742	.856	2.353
Some PSE	.390	1.476	-.003	.997	1.411*	4.099
HS Diploma	-.038	.963	-.257	.773	.835	2.306
<HS Diploma						
Class of Self-Employment						
Incorporated Employer	.020	1.020	.026	1.027	.201	1.223
Incorporated Own-Account	.018	1.018	-.009	.991	-.188	.829
Unincorporated Employer	-.789**	.454	-.970**	.379	.081	1.084
Unincorporated Own-Account						
Industry						
Primary Sector	.060	1.061	.678	1.969	-1.811	.164
Construction	-.729*	.482	-.270	.764	-4.030*	.018
Manuf, Transp & Warehousing	-.520	.594	-.348	.706	-.360	.698
Wholesale & Retail Trade	-.250	.779	.049	1.050	-.667	.513
Arts, Ent, Acc, Food, & Culture	-.549*	.578	-.056	.946	-1.099**	.333
Profess, Sci, & Tech Services						
Occupation						
Processing & Manufacturing	-.876	.416	-.742	.476	-.988	.372
Unique to Primary Industry	-1.499**	.223	-2.074**	.126	.923	2.517
Trades, Transport, & Equipment	.226	1.253	-.078	.925	1.269	3.559
Childcare & Home Support	.039	1.040	-19.627	.000	.044	1.045
Sales & Service	-.368	.692	-.502	.605	.209	1.232
Art, Culture, Rec, & Sports	.059	1.061	.622	1.862	-.781	.458
Social Science & Education	-.239	.787	-.013	.987	-1.634	.195
Health	-.835*	.434	-.932	.394	-.378	.685
Natural & Applied Science	-.387	.679	-.317	.728	1.770	5.872
Bus, Fin, & Administration	-.056	.945	.089	1.094	.408	1.503
Management						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

Although statistically insignificant, being an unincorporated female employer is positively related to having dental coverage, as illustrated in *Table 14*. In the full sample as well as in the self-

employed male sample, this coefficient is negative and statistically significant. Unincorporated male employers, relative to unincorporated own-account males, are about 62 percent less likely to have dental coverage. Similarly, in the full sample, unincorporated employers are about 55 percent less likely to have dental coverage, relative to unincorporated own-account entrepreneurs.

Relative to self-employed individuals in the professional, scientific, and technical services industries, self-employed individuals in the construction sector are about 52 percent less likely to have dental coverage in the full model and about 98 percent in the female model. *Table 14* also shows that self-employed individuals in the arts, entertainment, accommodation, food, and culture sector are about 42 percent less likely to have dental coverage in the full model and about 67 percent in the female model, relative to the same reference group.

Based on the occupational segmentation, the self-employed in occupations unique to primary industry, relative to those in management occupations, are about 78 percent less likely to have dental coverage in the full model and about 87 percent less likely in the male model. The full model also shows that self-employed individuals in health occupations are about 57 percent less likely to have dental coverage, relative to those in management occupations.

As demonstrated in *Appendix H*, there is insufficient evidence to conclude that the age of the self-employed or the age of their children affects the likelihood of having dental coverage. Likewise, no statistical significance is attached to the work arrangements, RRSP participation, and land ownership categories. The tenure of current self-employment is only significant in the case of self-employed women. As indicated in *Appendix H*, self-employed women who have been in business 10 to 19 years are 4.584 times as likely to have dental coverage, relative to women who have been in business for 20 or more years.

6.3.4 Regression Report: The Extended Health Model

The full regression report for the extended health model is shown in *Appendix I,* while the statistically significant variables are presented in *Table 15* and *Table 16* below. The model consists of the same number of cases as the previous two health-related benefits coverage models. The values of the two pseudo R-squares for the full extended health model, 0.204 and 0.272, indicate that about 20 percent of the variation in extended health coverage is explained by the

specified independent variables. The p-value for the Hosmer and Lemeshow Goodness-of-Fit test, however, is 0.004, suggesting that there might be problems concerning the fit of this model.

This, however, is not the case with the split gender models since their p-values are 0.183 for the male and 0.544 for the female samples. The two pseudo R-squares, 0.217 and 0.290 for the male sample and 0.345 and 0.450 for the female sample, indicate that about 22 and 34 percent of the variation can be attributed to the specified predictors in the two models, respectively.

Unlike in the previous two health-related benefits coverage models, the income variable in the extended health model is highly significant, particularly in the case of self-employed men. As illustrated in *Table 15*, the likelihood of self-employed men having extended health coverage improves with income, from 61 percent less for those earning less than $10,000 per year to 42 percent less for those earning $30,000 to less than $40,000 per year, relative to self-employed men earning $60,000 per year or more. This finding, however, is only significant for the $10,000 to less than $20,000 and the $20,000 to less than $30,000 income groups in the full model. Relative to self-employed individuals earning an income of $60,000 or more, those earning $10,000 to less than $20,000 per year are about 42 percent less likely to have extended health coverage. Similarly, self-employed individuals earning an income of $20,000 to less than $30,000 are about 48 percent less likely to have extended health coverage, relative to the same reference group.

Being a saver or investor is positively related to having extended health coverage in all cases, but is only statistically significant in the full model and in the case of self-employed women. Self-employed women who have other forms of savings and investments are about twice as likely to have extended health coverage as are those without savings or investments. In the full model, savers and investors are about 33 percent more likely to have extended health coverage, relative to non-savers and non-investors. Also, in the case of self-employed women, having assets in a home or business doubles the likelihood of extended health coverage, relative to not having such assets.

Table 15: The Extended Health Coverage Model Regression Report

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-.441	.644	-.941*	.390	.117	1.124
$10,000 to <$20,000	-.553*	.575	-1.103**	.332	.153	1.165
$20,000 to <$30,000	-.649**	.522	-.684*	.504	-.678	.508
$30,000 to <$40,000	-.297	.743	-.544*	.580	.421	1.523
$40,000 to <$50,000	-.001	.999	-.189	.828	.645	1.906
$50,000 to <$60,000	-.389	.678	-.491	.612	-.985	.374
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	.286*	1.331	.172	1.188	.740*	2.096
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.255	1.291	-.098	.907	.899*	2.458
Does Not Have Such Assets						
Spouse Work Status						
Public Sector Employee	1.907***	6.736	1.623***	5.069	3.089***	21.945
Private Sector Employee	1.214***	3.368	.904***	2.469	2.158***	8.655
Self-Employed						
Membership in Associations						
Member	.428**	1.534	.673***	1.960	-.037	.964
Non-Member						
Region						
Ontario	.608**	1.838	.397	1.487	1.007*	2.737
Quebec	.167	1.182	-.174	.840	.971*	2.641
Atlantic	.621	1.861	.452	1.572	1.224	3.400
Prairies	.917***	2.503	.544	1.723	1.822***	6.182
British Columbia						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

The work status of a self-employed individual's spouse or partner, however, is again the most significant factor affecting the likelihood of having extended health coverage in all cases. The full model indicates that the odds of having extended health coverage increase by 5.736 times for those whose spouse or partner is employed in the public sector and by 2.368 times for those

whose spouse or partner is employed in the private sector, relative to those whose spouse or partner is self-employed. Similarly, self-employed men whose spouse or partner is employed in the public sector are about 4 times as likely to have extended health coverage and almost as twice as likely if their spouse or partner is employed in the private sector, relative to having a self-employed spouse or partner. The odds of having extended health coverage are almost 21 times higher for women whose spouse or partner is employed in the public sector and 7.655 times higher if the spouse or partner is employed in the private sector, relative to having a spouse or partner who is self-employed.

Being a member in a professional or other association is statistically significant and positively related to having extended health coverage in the full model and in the case of self-employed men. In the female sample, however, the relationship is negative and statistically insignificant. In general, self-employed association members are about 53 percent more likely to have extended health coverage than are self-employed non-members. In the male sample, membership increases the odds of having extended health coverage by 96 percent.

Regional distribution makes no difference in the case of self-employed men. For self-employed women, however, living in Ontario or Quebec, relative to living in British Columbia, almost triples the likelihood of having extended health coverage. The odds of having extended health coverage are 5 times higher for self-employed women living in the Prairies, relative to those living in British Columbia. The full model is significant only for the Ontario and the Prairies regions. Relative to the self-employed in British Columbia, the self-employed in Ontario are about 84 percent more likely and the self-employed in the Prairies region are 150 percent more likely to have extended health coverage.

Table 16 illustrates the relationship between the other variables and the odds of having extended health coverage. Again, education is statistically insignificant in the case of self-employed men. In the full model, only university education is statistically significant, almost doubling the likelihood that one will have extended health coverage, relative to those with less than a high school diploma. In the case of self-employed women, however, having a university education raises the likelihood of having extended health coverage by 4.211 times, while having some postsecondary education raises the likelihood by 5.314 times, relative to having less than a high school diploma.

Table 16: The Extended Health Coverage Model Regression Report (continued)

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Education						
University	.709*	2.032	.466	1.593	1.651**	5.211
PSE Diploma	.344	1.410	.226	1.254	.768	2.156
Some PSE	.526	1.692	-.042	.959	1.843**	6.314
HS Diploma	.156	1.169	.159	1.173	.635	1.888
<HS Diploma						
Gender						
Male	-.505**	.604				
Female						
Children Age						
<6	-.744**	.475	-.690*	.502	-1.580**	.206
6 — 15	-.369*	.691	-.363	.696	-.888*	.411
16 — 24						
Class of Self-Employment						
Incorporated Employer	-.069	.933	.001	1.001	.244	1.276
Incorporated Own-Account	.173	1.189	.423	1.527	-.489	.613
Unincorporated Employer	-.869***	.419	-.924**	.397	-.500	.607
Unincorporated Own-Account						
Occupation						
Processing & Manufacturing	.016	1.016	.086	1.090	-.028	.972
Unique to Primary Industry	-1.130*	.323	-1.716*	.180	1.711	5.533
Trades, Transport & Equipment	.190	1.209	-.239	.787	2.421**	11.254
Childcare & Home Support	-.288	.750	-20.524	.000	.171	1.186
Sales & Service	-.497	.608	-.932*	.394	.434	1.543
Art, Culture, Rec, & Sports	-.169	.845	-.008	.992	-.141	.868
Social Science & Education	-1.135**	.322	-1.427**	.240	-.457	.633
Health	-.874*	.417	-1.186*	.305	-.024	.977
Natural & Applied Science	-.984**	.374	-1.333**	.264	1.525	4.595
Bus, Fin, & Administration	-.367	.693	-.708	.493	.712	2.038
Management						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

The gender variable is highly significant in this model, although the coefficient sign is somewhat unexpected. Relative to self-employed women, self-employed men are about 40 percent less

likely to have extended health coverage. Having children is negatively related to having extended health coverage in all cases. For self-employed women, the presence of children younger than 6 decreases the odds of having extended health coverage by about 79 percent, and having children aged 6 to 15 decreases the odds of having extended health care by about 59 percent, relative to self-employed women whose children are aged 16 to 24. The odds of having extended health coverage decrease by half for self-employed men who have children younger than 6, relative to self-employed men whose children are aged 16 to 24. In the full sample, the odds of having extended health decrease by 52 percent for those whose children are younger than 6 and by 31 percent for those whose children are aged 6 to 15, relative to those whose children are 16 to 24 years of age.

Table 16 also shows that unincorporated employers in the full sample and in the male sample are less likely to have extended health coverage. Relative to unincorporated own-account entrepreneurs, the odds of having extended health coverage decrease by about 58 percent in the full sample and about 60 percent in the male sample. Female class of self-employment is statistically insignificant with respect to extended health coverage.

Finally, *Table 16* shows that self-employed women in trades, transport, and equipment operation occupations are over 11 times as likely to have extended health coverage as are self-employed women in management occupations. Self-employed men in occupations unique to primary industry are about 82 percent less likely to have extended health coverage relative to self-employed men in management occupations. Also, relative to those in management occupations, the odds of having extended health coverage decrease for self-employed men in sales and service occupations, social science and education occupations, health occupations, and natural and applied science occupations, by 61, 76, 69, and 74 percent respectively. The full model gives significance only to occupations unique to primary industry, social science and education occupations, and natural and applied science occupations. Relative to the self-employed in management occupations, those employed in the above three occupations are about 68 percent to 62 percent less likely to have extended health coverage.

As illustrated in Appendix I, self-employed individuals in the construction sector are about 47 percent less likely to have extended health coverage in the full sample, and about 96 percent in the female sample, relative to those in professional, scientific, and technical services. Those self-

employed in the wholesale and retail trade sector are about 46 percent less likely to have extended health coverage in the full sample and about 57 percent in the male sample, relative to the same reference group. The odds for those self-employed in the arts, entertainment, accommodation, food, and culture sector are half of those in professional, scientific, and technical services sector, as shown in the full model. The age of self-employed individuals is statistically insignificant in this model, as are the tenure of current self-employment, work arrangement, the number of jobs held, RRSP contribution, and land ownership.

6.3.5 Regression Report: The Disability Insurance Model

Finally, the full regression report for disability insurance coverage is shown in *Appendix J.* Statistically significant variables are presented in the following *Table 17* and *Table 18.* The full disability insurance model included 1,578 cases, with 992 in the male and 586 in the female sample. The two pseudo R-squares for the full model, 0.220 and 0.295, indicate that about 22 percent of the variation in disability insurance coverage is explained by the included predictors.

The Hosmer and Lemeshow Goodness-of-Fit test statistic, however, is less than 0.05, indicating that there might be some problems with the fit of the full model. With respect to the split sample, the Hosmer and Lemeshow Goodness-of-Fit test statistics of 0.523 and 0.995 suggest that the models fit the data well. The pseudo R-squares, 0.223 and 0.298 for the male sample, and 0.266 and 0.377 for the female sample, indicate that about 22 percent of the variation in the male sample and about 27 percent of the variation in the female sample regarding disability coverage is explained by the specified predictors.

As indicated in *Table 17*, except for the $40,000 to less than $50,000 income category, the income factor is negatively related to disability insurance coverage and highly significant in all cases, particularly in the case of self-employed women. Relative to those earning $60,000 per year or more, the odds of having disability insurance for self-employed women earning less than $10,000 per year decrease by 80 percent. The odds also decrease for self-employed women earning $10,000 to less than $20,000 by 64 percent, $20,000 to less than $30,000 by 84 percent, and $30,000 to less than $40,000 by 73 percent. Even women earning $50,000 to less than $60,000 are about 78 percent less likely to have disability insurance, relative to self-employed women earning $60,000 per year or more.

Table 17: The Disability Insurance Model Regression Report

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-.705*	.494	-.475	.622	-1.609**	.200
$10,000 to <$20,000	-.786**	.456	-1.178***	.308	-1.023*	.360
$20,000 to <$30,000	-.751***	.472	-.736**	.479	-1.836***	.160
$30,000 to <$40,000	-.391*	.676	-.343	.710	-1.315**	.268
$40,000 to <$50,000	.137	1.147	.146	1.157	-1.000	.368
$50,000 to <$60,000	-.202	.817	-.187	.829	-1.499*	.223
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	.409**	1.506	.680***	1.974	-.261	.771
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.500**	1.649	.402	1.495	1.115	3.050
Does Not Have Such Assets						
RRSPs						
Has Own RRSPs	.394*	1.482	.370*	1.448	.358	1.431
Does Not Have Own RRSPs						
Membership in Associations						
Member	.652***	1.919	.690***	1.994	.553	1.738
Non-Member						
Region						
Ontario	.600**	1.823	.695**	2.004	.235	1.264
Quebec	1.063***	2.895	1.204***	3.332	.636	1.888
Atlantic	.718*	2.049	.909*	2.482	.226	1.254
Prairies	.752**	2.120	.855**	2.352	.549	1.732
British Columbia						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

In the case of self-employed men, the odds of having disability insurance decrease by about 38 percent for those earning less than $10,000 per year, by about 69 percent for those earning $10,000 to less than $20,000, and by about 52 percent for those earning $20,000 to less than $30,000 per year, relative to the odds of self-employed men earning $60,000 per year or more.

For the full sample, the odds decrease by 51 percent for the lowest income category, and by 54, 53, and 32 percent for the subsequent categories.

As illustrated above, being a saver or investor increases the likelihood of having disability insurance by about 51 percent in the full sample and by about 97 percent in the male sample. Again, even though this coefficient is statistically insignificant in the female sample, it is interesting to note that self-employed women who are savers or investors are less likely to purchase disability insurance. Having assets in a home or business is significant only in the full model. The odds ratio of 1.649 implies that self-employed individuals who have such assets, relative to those who do not, are about 65 percent more likely to purchase disability insurance.

Being an RRSP participant increases the likelihood of having disability insurance by about 48 percent in the full model and by about 45 percent in the male model, while in the female model RRSP participation is statistically insignificant. Similarly, membership in associations increases the odds of purchasing disability insurance by about 92 percent in the full model and by about 99 percent in the male model, while in the female model membership is statistically insignificant.

Relative to British Columbia, all regions in the disability insurance model are statistically significant in the full model and in the male sample. The coefficient signs in the female sample are identical to those of the full and male samples; however, statistical significance with respect to region is absent in the female model. Relative to those living in British Columbia, self-employed individuals living in Ontario are about 82 percent more likely to purchase disability insurance in the full model. Similarly, the full model indicates that the odds of self-employed individuals in the Quebec, Atlantic and Prairies regions purchasing disability insurance are at least double the odds for those living in British Columbia. Comparable odds are observed in the male sample, with the exception that self-employed men living in Quebec are about 3 times as likely to purchase disability insurance as are self-employed men living in British Columbia.

Table 18 portrays other significant factors in the disability insurance model relating to the personal and business characteristics of the self-employed. As illustrated below, the age factor is negative and statistically insignificant in the female sample. The odds ratios in the male sample indicate that self-employed men aged 30 to 34 and those aged 35 to 39 are 8.389 times and 4.097 times as likely to purchase disability insurance as are self-employed men aged 60 and over.

Table 18: The Disability Insurance Model Regression Report (continued)

Statistically Significant Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Age						
15 to 29	1.177	3.245	1.365	3.915	-1.308	.270
30 to 34	1.753**	5.771	2.127***	8.389	-.901	.406
35 to 39	1.233*	3.432	1.410*	4.097	-.767	.464
40 to 44	.798	2.220	1.079	2.941	-1.350	.259
45 to 49	.807	2.242	.944	2.569	-1.000	.368
50 to 54	.795	2.215	1.005	2.732	-.960	.383
55 to 59	-.102	.903	.032	1.032	-1.757	.173
60 +						
Children Age						
<6	-.620**	.538	-.810**	.445	-.553	.575
6 — 15	-.200	.818	-.314	.730	-.195	.823
16 — 24						
Class of Self-Employment						
Incorporated Employer	.436**	1.546	.580**	1.787	-.092	.912
Incorporated Own-Account	.099	1.104	.187	1.205	-.667	.513
Unincorporated Employer	.360	1.433	.311	1.364	.445	1.560
Unincorporated Own-Account						
Occupation						
Processing & Manufacturing	.464	1.591	.604	1.830	-.138	.871
Unique to Primary Industry	-.249	.780	-.874	.417	2.890	17.994
Trades, Transport, & Equipment	.450	1.568	.503	1.653	.240	1.271
Childcare & Home Support	.417	1.517	.269	1.308	.422	1.526
Sales & Service	.283	1.327	.138	1.148	.438	1.550
Art, Culture, Rec. & Sports	-.315	.729	.305	1.357	-1.862*	.155
Social Science & Education	-.739	.477	-1.036*	.355	-.220	.802
Health	1.380**	3.976	1.550*	4.711	1.167	3.211
Natural & Applied Science	.304	1.356	-.173	.841	3.449*	31.478
Bus, Fin, & Administration	-.069	.933	-.557	.573	.579	1.785
Management						

*Note: Working weight in effect. Reference categories are italicized. ***p<.001; **p<.01; *p<.05*

Similarly, the presence of young children in the female sample is negatively related to the likelihood of purchasing disability insurance; this finding, however, is statistically insignificant.

The finding carries statistical significance for the full and self-employed men models. The presence of young children, under age 6, decreases the odds of purchasing disability insurance by about 55 percent in the male model and by about 46 percent in the full sample.

The class of self-employment coefficients are positive, and statistically significant for incorporated employers, in the full and male models, while in the female model the relationship is negative and statistically insignificant. The full model indicates that, relative to unincorporated own-account entrepreneurs, incorporated employers are about 55 percent more likely to purchase disability insurance. Similarly, the male model indicates that incorporated male employers are about 79 percent more likely to purchase disability insurance, relative to unincorporated own-account males.

Finally, the occupational profile reveals that self-employed women working in art, culture, recreation, and sports are about 84 percent less likely to have disability coverage, relative to self-employed women in management occupations. Self-employed women in natural and applied science, on the other hand, are over 31 times as likely to have disability coverage, relative to self-employed women in management occupations.

The male sample shows that, relative to self-employed men in management occupations, self-employed men in the social science and education sector are about 64 percent less likely to purchase disability insurance. Self-employed men in health occupations, on the other hand, are almost 5 times as likely to have disability insurance, relative to self-employed men in management occupations. The full sample is significant only for health occupations; self-employed individuals in this field are about 4 times as likely to purchase disability insurance, relative to those self-employed in management occupations.

With respect to industrial distribution, no statistical significance is observed in the full model, as illustrated in *Appendix J.* The split model, however, reveals that, relative to self-employed women in the professional, scientific, and technical services sector, self-employed women in manufacturing, transportation, and warehousing are about 6 times as likely to purchase disability insurance. In the male sample, the odds of self-employed men in the arts, entertainment, accommodation, food, and culture industry purchasing disability insurance decrease by about 57 percent, relative to self-employed men in professional, scientific, and technical services.

The tenure of current self-employment is statistically significant only in the full sample. As shown in *Appendix J*, self-employed individuals who have been in business for 5 to 9 years are about 39 percent less likely to purchase disability insurance than are those who have been self-employed for 20 years or more. With respect to education, only the female sample carries statistical significance. As illustrated in Appendix J, the odds ratio of 3.800 in the female sample indicates that university educated self-employed women are almost 4 times as likely to purchase disability insurance, relative to self-employed women with less than a high school diploma. There is insufficient evidence to conclude that land ownership, number of jobs held by the self-employed, or work arrangement affect the odds of purchasing disability insurance.

7 Discussion

This section provides a concise summary of the above empirical findings and introduces a brief discussion regarding the statistically significant factors common to all models. Combined with the previous research findings, the statistically significant factors from this study will be considered in designing potential policy options for this report. The section, in brief, contains the answers to the three empirical research questions set out in section five of this report:

(1) What factors explain the low-income status amongst the self-employed Canadians?

(2) What determines participation in retirement savings plans for the low-income self-employed Canadians? and,

(3) What determines participation in health-related benefits plans, over and above provincial medicare programs, amongst the low-income self-employed Canadians?

7.1 Gender

Before summing up the statistically significant factors common to all models, it is important to point out that self-employed men fare significantly better when compared to self-employed women in almost every aspect analyzed in this paper, except one. Relative to self-employed women, self-employed men are more likely to earn an annual income of $40,000 or more and more likely to purchase disability insurance, but less likely to have extended health coverage. This one instance where self-employed women seem to be doing better than their male counterparts cannot be attributed to the fact that, unlike disability insurance, extended health insurance is usually acquired through a spousal entitlement. In fact, a significantly larger proportion of married self-employed men have spouses or partners working in the public or private sector, relative to married self-employed women. For instance, over 37 percent of self-employed women have spouses or partners who are self-employed, compared to only 19 percent of self-employed men.

7.2 Common Factors Summarized

The preceding empirical results suggest several common factors affecting entrepreneurs' socio-economic well-being, some of which hold true across gender, while others are significant only in the case of one gender or the other. The purpose of this summary is to assist in policy options selection; hence, the factors that hold true across the models are listed, and attention is paid to gender disparity when relevant. As summarized below, the list of reoccurring factors includes: current income and past financial difficulties; wealth and savings behaviour; membership in a professional or other association; legal structure of business; multiple jobs; tenure; self-employment choice; education; and the presence of dependent children in the household. A pattern is also noticeable in occupational profile, as well as in the number of hours worked per week.

7.2.1 Current Income and Past Financial Difficulties

The results indicate that both self-employed men and self-employed women earning an income below $40,000 are significantly less likely to own an RRSP account as well as to purchase disability insurance, relative to those earning $60,000 per year or more. Income is only slightly significant for dental plan coverage, although it carries a negative sign in both the male and female samples. In extended health coverage, however, the negative relationship is statistically significant for self-employed men. Having experienced financial difficulties in the past significantly lowers the likelihood of having an RRSP account. This holds true for both male and female entrepreneurs, even when controlling for other related factors such as risk aptitude.

7.2.2 Wealth and Savings Behaviour

Having other forms of savings and investment as well as having assets in a home or business is positively related to RRSP participation. The same relationship surfaces in the health-related benefits coverage model. Self-employed men who have other forms of savings and investments are more likely to purchase disability insurance and to have dental coverage, while self-employed women with other savings or investments are more likely to have extended health coverage. In addition to the above, assets held in a home or business increase the likelihood that self-employed

women will have dental and extended health coverage. Also, having an RRSP increases the likelihood that self-employed women will have at least one health-related benefits coverage.

7.2.3 Social Capital

Consistent with previous research, membership in a professional or other association makes a significant difference with respect to most aspects of self-employed socio-economic well-being analyzed in this paper. The earnings model, for instance, reveals that being an association member increases the likelihood of earning an annual income of $40,000 or more by about 66 percent for self-employed men and by almost 400 percent for self-employed women, relative to their non-member counterparts.

Self-employed men seem to derive additional benefits from such a membership. For instance, the odds of having at least one health-related benefits coverage almost double for self-employed men who hold a membership, relative to self-employed men who do not have such a membership. Looking further into the male sample, the data reveal that the likelihood of having dental coverage increases by about 55 percent for self-employed male members, relative to self-employed male non-members. Finally, with respect to extended health and disability insurance, the odds increase by 96 and 99 percent, respectively, for self-employed men with an association membership, relative to self-employed men without a membership.

7.2.4 Legal Structure of Business

Being an employer is another factor that significantly affects the socio-economic status of the self-employed. The likelihood of earning an income of $40,000 or more increases significantly if one has employees, relative to being own-account self-employed. This is particularly the case with self-employed men, and it holds true regardless of incorporation status. The RRSP model further suggests that incorporated self-employed men who have employees working for them are almost 4 times as likely to invest in an RRSP as are own-account self-employed men. Similarly, incorporated self-employed men who have employees working for them are about 79 percent more likely to purchase disability insurance. However, the extended health model suggests that unincorporated male employers are less likely to have extended health coverage, relative to unincorporated own-account males. The same relationship holds in the dental plan model.

7.2.5 Multiple-Job Holding

The income model suggests that, relative to self-employed men holding a single job, self-employed men holding multiple jobs are more likely to earn an annual income of $40,000 or more. The same holds true for self-employed men's likelihood of having an RRSP account and a dental plan. Self-employed women holding multiple jobs, on the other hand, are less likely to earn an income of $40,000 or more, and they are less likely to have extended health and dental coverage, relative to self-employed women who hold a single job. However, except for the income variable, the benefits results for self-employed women are statistically insignificant.

7.2.6 Self-Employment Choice

Entering self-employment involuntarily, as opposed to voluntarily, significantly lowers one's chances of earning $40,000 or more per year, in the case of both self-employed men and self-employed women. Similarly, being involuntarily self-employed, as well as being adjusted to self-employment, is negatively related to the likelihood of RRSP participation. Discouraged self-employed men, on the other hand, are slightly more likely to invest in RRSPs than are voluntarily self-employed men.

7.2.7 Tenure of Current Self-Employment

The results also indicate that the likelihood of earning an income of $40,000 or more per year is significantly lower for those who have been self-employed for 9 years or less, relative to those who have been self-employed for 20 years or more. This negative relationship is particularly significant in the case of self-employed men. The data from the full sample also reveal that individuals in the same category of the self-employed are less likely to purchase disability insurance.

7.2.8 Education & Training

Educational level is statistically significant across all models; however, it holds true only in the case of self-employed women and the results from the income model contradict the human capital

postulations. Compared to self-employed women with less than a high school education, self-employed women with a postsecondary diploma or certificate are less likely to earn an income of $40,000 or more per year. The same segment of self-employed women, however, is more likely to own an RRSP account and to have at least one health-related benefits coverage. In fact, both university-educated self-employed women and women with a postsecondary diploma or certificate are more likely to have both dental and extended health coverage. University-educated self-employed women are also more likely to purchase disability insurance.

Job-related training, both formal and informal, seems to be significant for self-employed men, although it bears no statistical significance with respect to earnings. The RRSP model shows that self-employed men who have had both formal and informal training, as well as those who have had only informal training, are significantly more likely to own an RRSP account, relatively to those who have had no job-related training at all. It should be noted that, although statistically insignificant, formal training is positively related to RRSP participation in the case of self-employed women.

7.2.9 Dependent Children in Household

The regression results indicate that self-employed women with children below age 15 are significantly less likely to have at least one health-related benefits coverage, relative to self-employed women whose children are 16 to 24. The extended health and disability insurance models reveal the same negative relationship for self-employed men who have children below age 6, relative to self-employed men whose children are aged 16 to 24.

7.2.10 Occupational Choice

The data show that both self-employed men and self-employed women in natural and applied science occupations are significantly more likely to earn an income of $40,000 or more, relative to their counterparts in management occupations. Sales and service and business and finance are two additional occupations where self-employed women and self-employed men, respectively, are more likely to earn an income of $40,000 or more per year, relative to their counterparts in management occupations. Self-employed men in occupations unique to primary industry and

self-employed women working in childcare and home support are significantly less likely to earn an income of $40,000 or more per year, relative to their counterparts in management occupations.

The RRSP model, however, reveals that only self-employed men in natural and applied science occupations are more likely to own an RRSP account. With respect to benefits coverage, self-employed men working in occupations unique to primary industry are significantly less likely to have at least one health-related benefits coverage, relative to self-employed men in management occupations. The dental and extended health models also confirm this finding.

The extended health model provides further details with regards to other occupations. For instance, self-employed men in social science and education occupations, in natural and applied science occupations, as well as those in health occupations, are significantly less likely to have extended health coverage, relative to self-employed men in management occupations. The disability insurance model, however, reveals that self-employed men in health occupations are more likely to purchase disability insurance, relative to self-employed men in management occupations. The opposite holds true for self-employed men working in social science and education occupations.

Unlike self-employed men, self-employed women working in occupations unique to primary industry are more likely to have at least one health-related benefits coverage, relative to self-employed women in management occupations. Also, self-employed women in natural and applied science occupations are more likely to purchase disability insurance, relative to self-employed women in management occupations. Self-employed women in arts, culture, recreation, and sports occupations, however, are significantly less likely to purchase disability insurance.

7.2.11 Region

The odds of earning an income of $40,000 or more are about 49 percent lower in the case of self-employed men living in Quebec, relative to those living in British Columbia. Furthermore, both self-employed men and self-employed women situated in Quebec are less likely to have dental plan coverage. However, self-employed men working in Quebec are more likely to purchase disability insurance, while self-employed women working in Quebec are more likely to have extended health coverage.

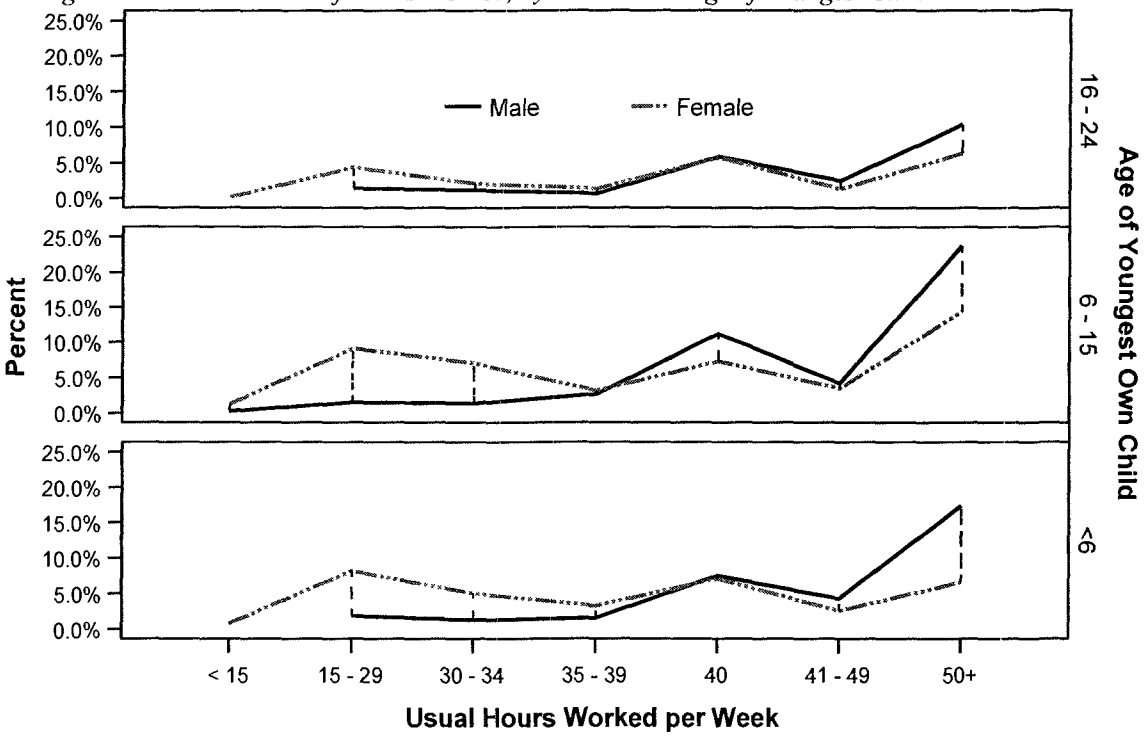
Self-employed women operating their businesses in the Prairies region are more likely to have both dental plan and extended health coverage, relative to self-employed women in British Columbia. Likewise, self-employed women in Ontario are more likely to have extended health coverage, relative to self-employed women in British Columbia. On the other hand, self-employed men in Ontario are more likely to purchase disability insurance, relative to self-employed men in British Columbia.

7.2.12 Final Remarks

Since income plays an important role in the retirement and benefits coverage models, it is worth noting several more points that can better inform policy options. The data indicate that working less than 34 hours per week significantly decreases the odds of making an income of $40,000 per year or more. These findings apply to both self-employed men and self-employed women.

Prior research has shown that hours worked are related to the presence of dependent children in households. In addition to confirming this finding, the current data reveal that the experience of self-employed women and self-employed men with dependent children is quite different. As illustrated in *Figure 5*, self-employed women with children below age 15 are more likely to work less hours per week, compared to self-employed men with children of the same age group.

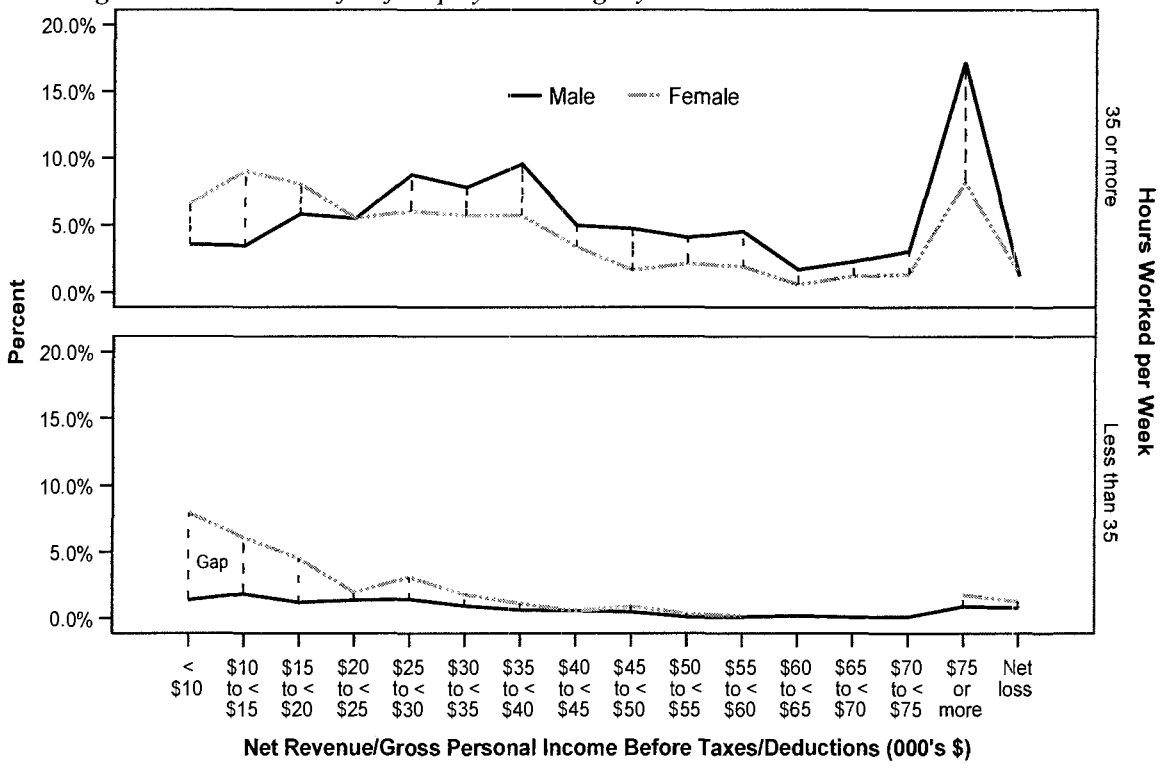
Figure 5: Distribution of Hours Worked, by Gender and Age of Youngest Child



Note: Working weight in effect

As demonstrated in *Figure 6*, the gender earnings gap for those working less than 35 hours is larger at the bottom of income distribution. For those working 35 hours per week or more, the gap appears somewhat smaller for the lower income range, but it persists across the distribution.

Figure 6: Distribution of Self-Employed Earnings by Gender and Hours Worked



Note: Working weight in effect

7.3 Policy Implications

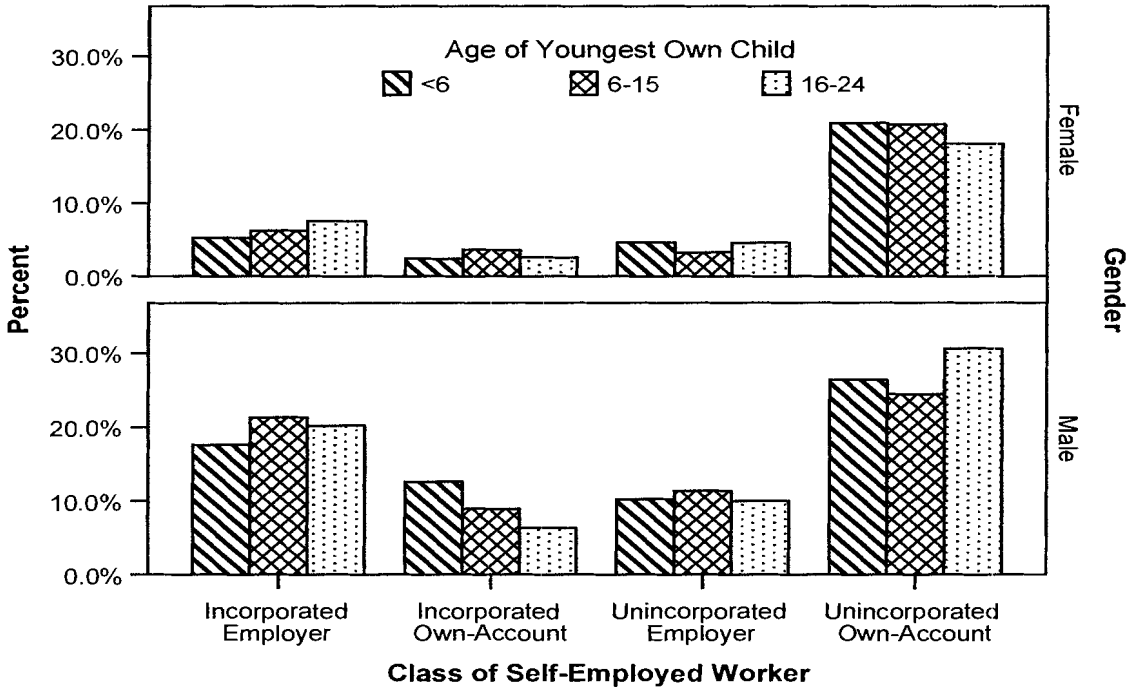
Supporting the growth of self-employment, as explained in the third section of this paper, is currently the primary objective of government intervention. All of the support measures introduced over the past few decades have focused primarily on increasing the number of self-employed, and particularly on encouraging the unemployed to explore self-employment as a career option. As the above analysis shows, assisting the transition into self-employment is likely to be insufficient for ensuring socio-economic self-sufficiency of the self-employed and is particularly not enough to stimulate the job-creating potential of the self-employment sector. Aside from social benefits, this stimulation would be beneficial on the individual level too since the data reveal that, compared to own-account entrepreneurs, self-employed employers are in a significantly better socio-economic position, regardless of the incorporation status of their business.

Incentives that encourage social networks and improve savings habits of the self-employed appear promising, given the fact that membership and wealth are positively related to all aspects analyzed in this paper. Similarly, even though education and training give ambiguous results in the income model, government investment in this area would be beneficial for improving the socio-economic status of the self-employed, primarily because education and training have positive effects on RRSP participation and health-related benefits coverage, as revealed above.

Other factors suggest that the challenges and coping mechanisms of those who enter this career choice need to be examined beyond the early transitional period. To ensure a sufficient level of socio-economic security, many self-employed workers, particularly men, are holding on to other jobs in the paid labour market. Further, success, as defined above, is not attained by many entrepreneurs until they have invested a number of years in their business. Finally, some segments of the self-employed remain own-account entrepreneurs long after start-up, experiencing multiple disadvantages with respect to both the current and future prospects of their socio-economic security.

This presents significant concerns, given the fact that the majority of own-account entrepreneurs are women. This segment of the self-employed (own-account entrepreneurs), regardless of gender, is also more likely to have children below age 15, as illustrated below in *Figure 7*. In addition, as revealed in the preceding *Figure 5*, self-employed women with dependent children work fewer hours, which makes them less likely to reach an annual income level of $40,000 or more. Even when they do work longer hours, their earnings do not measure up to the earnings of their male counterparts, as illustrated above in *Figure 6*.

Figure 7: Distribution of Self-Employment by Class of Self-Employment and Presence of Dependent Children in Household



Note: Working weight in effect

8 Alternative Policy Framework

This section critically examines the rationale for new approaches to supporting self employment and offers several alternatives aimed at assisting the successful establishment of self-employment as a viable career choice. The policy problem is redefined in this section and boundaries are set with respect to related issues that arose from the empirical models analyzed in this paper. The section introduces policy options and concludes with policy recommendations.

The purpose of this section is to explore different avenues for expanding the current government support for the transition into self-employment, so that it continues long enough to ensure the successful establishment of entrepreneurs' careers. "Success" here means sufficient income levels, as well as retirement preparedness and benefits coverage, for the self-employed. This would necessitate introduction of new policies, in addition to improving existing ones. This approach is vital for developing the full potential of the self-employment sector on both an individual and societal level.

8.1 The Rationale

As pointed out before, self-employment growth can result in both positive and negative economic and social impacts, both for the self-employed themselves and for society at large. On the positive side, self-employment can help in reducing dependence on social assistance and other transfers since it can be argued that unemployment is a viable alternative for some of the self-employed. Self-employment can also offer a "stepping stone" for workers going through life transitions such as the school-to-work transition, the part-time to full-time employment transition or vice versa, and the transition from standard employment to semi-retirement. There is also a potential for greater employment creation as new entrants, beginning as own-account self-employed workers, could expand their businesses and hire employees (HRDC, 2000).

A number of negative social and economic outcomes of self-employment growth are also possible. As indicated before, it takes a significant amount of time and resources for the self-

employed to reach an average income level. Considering the absence of employer-sponsored training and professional development, increasing the number of self-employed workers can result in the economic costs of more bankruptcies due to a high failure rate.

Besides the potential unemployment of the self-employed, their benefits coverage and retirement preparedness are also central issues in the social security area of public policy. Increasing the number of self-employed individuals without health-related benefits and pension coverage raises significant issues regarding the pressure on public funds. Finally, there is a cause for concern regarding a rising incidence of marriage breakdown, caused by people working long hours, leading to increased family tensions (HRDC, 2000; Saunders, 2006). This alone can have significant impacts, given the fact that the spousal plan is the main means through which the self-employed access health-related benefits coverage. Providing alternative ways of acquiring these benefits would serve as a buffer against uncertainty and lessen the overall impact on both individuals and society at large.

Self-employed individuals are often seen as entrepreneurs who have willingly traded the legal protections and benefits of the employment contract for the autonomy, flexibility, and likelihood of greater economic gain associated with self-employment. This assumption, as pointed out earlier, is too general. The reality in the self-employment sector is much more complex.

While the complexities involved in the self-employment sector, particularly with respect to diversity and the robustness of the current institutional arrangement pertaining to labour market laws and regulations, are understandable, they are insufficient rationale for keeping the status quo. Past reports have shown that self-employed individuals generally express strong preferences for less government regulation and control. Recent reports, however, indicate that a growing number of entrepreneurs want governments to play a more active role, particularly with respect to benefits coverage and social networks support (Rooney et al., 2003; HRDC, 2000).

Similarly, the growing population of retirees, increased longevity, rising health care costs, and the prospect of a smaller work force in the future having to fund social security for all, are some of the major factors that justify the need to support prudent retirement planning in all sectors of the labour market, self-employment being no exception. As indicated by previous studies, and as confirmed by the present data, the lowest income segments of the self-employed population are

especially vulnerable as they approach retirement. The differences in gender behaviour are of a particular concern.

As in the paid labour market, there is an urgent need for self-employed women to prepare for retirement. Reports indicate that women live longer than men, earn less, leave and rejoin the work force more frequently, and tend to work in jobs which are less likely to give them economic security (SEDI, 2005; Hughes, 1999). Other factors which limit women's retirement resources are that women tend to start saving later, often feel less informed, and tend to be more conservative when making investment decisions (DeVaney, 2005).

8.2 Framing the Issue

The evidence presented in this report highlights two important policy-related aspects of the socio-economic well-being of self-employed Canadians. First, the vulnerable segment includes not only female entrepreneurs but also own-account entrepreneurs, the involuntarily self-employed, low-tenure entrepreneurs, and self-employed individuals who have children below age 15. The second aspect pertains to the financial strength of the self-employed. This aspect demands that policy be designed around income support, wealth, and the current savings behaviour of the self-employed, for these factors resurface repeatedly in the RRSP and health-related benefits models. In light of this, *Figure 8* summarizes the condensed policy problem, along with the major policy goal and the related policy objectives.

Figure 8: Condensed Policy Problem, Overall Goal and Policy Objectives

Policy problem: The *socio-economic status* of *some segments* of the self-employed is *too low.*

Goal: Improve the socio-economic status of specific segments of the self-employed.

Objectives: Maximize the number of self-employed earning an income above $40,000;
Maximize RRSP participation among the self-employed; and
Maximize the number of self-employed with health-related benefits coverage.

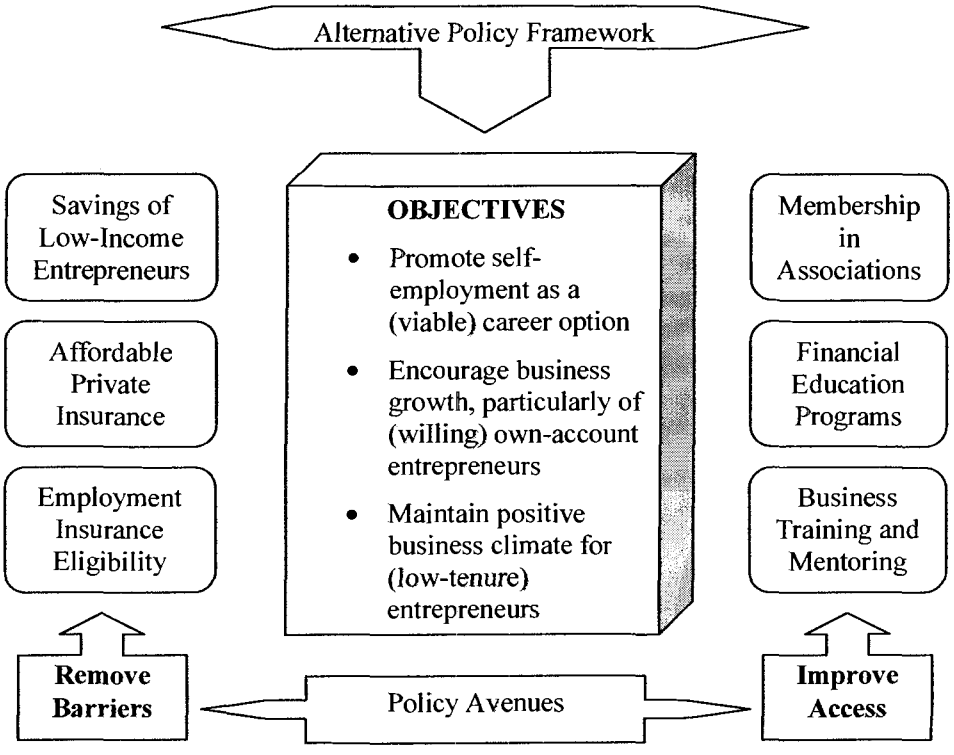
The above problem definition contains three terms that need further explanation: socio-economic status in this definition refers to how well off the self-employed are in terms of current income

level and accumulated wealth, including an RRSP account. This term also includes the health-related benefits coverage held by the self-employed. The meaning of the "self-employed," in the context of this definition, is reduced to the population segments listed in the previous paragraph. These include female entrepreneurs, own-account entrepreneurs, the involuntarily self-employed, low-tenure entrepreneurs, and self-employed individuals who have children below age 15.

The "too low" in the above definition is a normative statement justification for which comes from observing the trend in the standard paid labour market. While not all paid employees are guaranteed income support when adversities arise, incremental changes made to EI over the past decade or so have created a considerable sense of security among eligible contributors. Hence, it is safe to argue that, in terms of social security, most employees in the paid labour market are significantly better off, compared to self-employed workers (Lin, 1998).

Figure 9 summarizes a tentative suggestion for self-employment policy reform. The suggestion is labelled "tentative" to acknowledge the above-mentioned complexities with respect to self-employment policy design and to allow for flexibility in the approach.

Figure 9: Alternative Self-Employment Policy Framework



As can be noted above, the objectives of the new policy framework are not significantly different from those currently in place. However, the bracketed words imply an extension to the current approach, with explicit focus on growing a successful self-employment sector. The first objective, for instance, reiterates what the Canadian government has been doing for the past two decades — influencing individuals' career choice, particularly of those struggling in the paid labour market, by offering incentives to undertake self-employment. The modification made here requires the government to continue its involvement beyond the transitional period through to the successful establishment of a self-employment career — hence the wording for a "viable" career choice.

Similarly, the second objective requires the government to play an active role in assisting own-account entrepreneurs who want to expand their businesses. The primary aim of this intervention is to maximize the job-creating potential of the self-employment sector. The third objective aims at minimizing the cost of failure by extending the support, which is currently available only to new entrants, to those who have been in business for several years. The rationale for this objective stems directly from the regression results of the present study, which indicate that entrepreneurs who have been self-employed for less than 9 years are significantly less likely to earn an annual income of $40,000 or more and significantly less likely to purchase disability insurance, relative to those who have been in business for 20 years or more.

The two policy avenues shown in *Figure* 9 encompass a range of actions which are summarized below in two major sets of policy options: (1) ***Remove Barriers***, which includes (a) extending EI eligibility to the self-employed, (b) making private insurance more affordable for the self-employed, and (c) offering financial incentives to stimulate savings and assets accumulation among low-income entrepreneurs; and (2) ***Improve Access to Resources***, which includes (a) expanding business training and mentoring services to low-tenure entrepreneurs and to own-account entrepreneurs who are willing to grow their businesses, and (b) introducing a specialized financial education program which can assist the self-employed in the retirement planning process as well as in finding affordable insurance options through expanding the awareness of benefits that come with membership in professional and other associations.

Previous sections of this paper have presented evidence to suggest that retaining the status quo is an unacceptable option, from both an individual and a societal point of view. However, it could be argued that the immediate cost savings and the equity issues that might arise with the other options could justify the inclusion of the status quo. As indicated before, self-employment is highly heterogeneous, and complexities in initiating any change are likely to be numerous, including the problem of targeting those with the greatest need. The Canadian government has been reluctant to act due to this fact, since windfalls for the better off are a highly controversial issue in the public policy arena.

However, the growing number of overworked, low-income, and uninsured self-employed individuals is a serious risk in terms of future public expenditures. The threat of escalating bankruptcy costs and increased dependence on public assistance makes this option inefficient and unaffordable from a social point of view. As numerous demands placed before government demonstrate, the status quo is ineffective in ensuring the economic self-sufficiency and social security of self-employed individuals. Maintaining the status quo, in the face of the persistent growth in self-employment will only exacerbate the situation.

Maintaining the status quo could also perpetuate the inequality perceived by self-employed workers and the organizations that serve them. Various stakeholders have already raised horizontal equity issues involving social protection disparities between paid workers and the self-employed. According to recent surveys, inequality is also present within the self-employed sector between self-employed men and self-employed women. Data also highlight the presence of vertical equity issues among self-employed groups. Maintaining the status quo creates a list of losers, with no one to benefit. Perhaps the most serious equity consideration involves the well-being of self-employed individuals' children. Although hard to estimate, the impacts on children growing up under such distress should be a concern to policy makers. According to current data, over 40 percent of self-employed people are parents to dependent children.

It can be expected that demands for change will place increasing political pressure on governments. As pointed out earlier, there is a growing sense of dissatisfaction among the self-employed and the organizations representing their interests regarding the lack of a safety net for this segment of the Canadian workforce. Various groups, such as those representing Canadian artists, women, and developmentally disabled entrepreneurs, are already putting significant

pressure on the federal government to do something about this issue. This pressure is unlikely to change in the near future. Although governments have done little to adjust for this imbalance, they have recently voiced their opinions, displaying a consensus that the current situation is socially suboptimal, particularly in the face of the rapidly changing nature of the Canadian labour market.

The primary purpose of this policy analysis is to assist policy makers in helping those self-employed individuals who are the least well off to attain economic self-sufficiency and social security. Those self-employed individuals who are rich in resources are not the subject of this policy analysis *per se*. It is desirable, however, to encourage entrepreneurs who are already performing well to grow their businesses further, for that is where the job-creating potential lies.

8.3 Policy Options

8.3.1 Remove Barriers to Socio-Economic Security

8.3.1.1 Extend Employment Insurance (EI) Eligibility to the Self-Employed

The first option calls for extending EI eligibility for special benefits to self-employed individuals. This option would involve separating special benefits from the general income replacement provisions and extending the eligibility criteria to the self-employed.

The EI program was originally established as an insurance against periodic episodes of unemployment for those engaged in the labour market as wage and salaried employees. The salary replacement benefits provided under the *Employment Insurance Act* are available to eligible paid employees in all Canadian jurisdictions. Under the current EI provisions, eligible employees receive 55 percent of their average insurable income, up to a specified maximum. This is currently $39,000 per year. Employed workers also have access to special benefits, including short-term sickness, maternity and parental leave benefits, all of which are paid from EI premiums. These entitlements provide up to 15 weeks of benefits for illness, 15 weeks of maternity leave benefits, and 35 weeks of parental or adoption leave benefits for a combined maximum of parental and maternity benefits of 50 weeks (CAALL, 2002). The most recent

change, introduced on January 4, 2004, entitled employed workers to a six-week EI compassionate family care leave benefit to care for a gravely ill or dying child, parent, or spouse (Canadian Chamber of Commerce, 2004).

The nature of their employment relationship excludes the self-employed from EI benefits coverage (HRDC, 1998). This exclusion is based on the original rationale for unemployment insurance, which was that it provided insurance against job loss for paid workers, who were viewed as having unique problems in terms of employment security because of their paid status. In addition to serving as a major disincentive to pursue self-employment, this exclusion form EI benefits also creates major apprehension amongst the currently self-employed. Own-account entrepreneurs, for instance, must rely solely on their human capital and savings to meet their needs if their business cannot continue to provide for them due to economic conditions. Given their opportunity cost, a single illness or accident can have a detrimental effect on their business, and if their business fails, they are left on their own (HRDC, 1998; Torjman, 2000; Rooney et al., 2003). The situation is only worsened by the fact that, relative to self-employed employers, own-account entrepreneurs are more likely to be parents of children below age 15, earn lower income, have few savings, and lack health-related benefits coverage.

The rationale for separating special benefits from the regular EI benefits and making the self employed eligible for the special benefits is, in part, that there is growing dissatisfaction with the direction and the content of the EI system with respect to its increasing commitment to social policy objectives, as opposed to its original purpose of maintaining the income of paid workers who experience short-term periods of unemployment due to cyclical fluctuations (Canadian Chamber of Commerce, 2004). It is argued that social programs should be available regardless of the nature of employment[22]. Recent developments in the province of Quebec have added to the arguments for including this option as a potential vehicle for improving the social security of the self-employed. In that province, steps are now being taken to provide the self employed with some special benefits under the province's employment insurance program. However, since the federal EI program, including the special benefits, was designed primarily for paid employees, this option will require significant legislative changes to better reflect the unique circumstances and needs of self-employed workers. The required changes for this policy option and details on Quebec's *Act* respecting parental insurance are outlined below.

[22] It should be pointed out here that under the current EI system special provision is made for those in the fishing industry, where eligibility is based on earnings within a fishing season rather than on hours worked (CAALL, 2002).

On May 25, 2001, Quebec adopted bill 140, *La loi sur l'assurance parentale*, which separated maternity and parental benefits from the regular EI benefits and extended eligibility to self-employed individuals living in Quebec. Under this legislation, maximum insurable earnings are set at $52,500 and the eligibility is based on a minimum level of gross earnings, $2,000, during the qualifying period, which is the previous 52 weeks. Participation would be mandatory for both self-employed workers and employees. Working parents who qualify would be eligible for a maximum of 18 weeks of maternity benefits, a maximum of 5 weeks of paternity benefits, a maximum of 32 weeks of parental benefits, and a maximum of 37 weeks of adoption benefits.

The *Act* stipulates that the calculation of benefits would be based on average insurable earnings from the previous 26 weeks of the qualifying period. With respect to payment of benefits, the eligible parents would be given two options: (1) seventy percent of their average weekly earnings for the first 25 weeks and 55 percent of their earnings for the rest of the period, or (2) seventy-five percent of their average weekly earnings for a maximum of 40 weeks.

Under the Quebec's *Act*, the self-employed will be required to pay their share of the premiums for parental and maternity benefits, plus half of what an employer would pay. For example, a self-employed individual with a gross income of $20,000 will pay $92 annually. This, however, will be reduced to a net contribution of $57 since the contribution will be income tax deductible. A self-employed individual earning $50,000 would be required to contribute a net of $147 annually (Rooney et al., 2003).

While the current EI system does not provide for earnings exemption for those receiving maternity or short-term sickness benefits, eligible employees are allowed to earn a maximum of 25 percent per week of their weekly benefit or $50, whichever is higher, before parental benefits are reduced[23]. Since the nature of self-employed work requires continuous business involvement, this criterion would need to be replaced with one that better reflects the circumstances of the self-employed. A recent survey that collected views on this issue from self-employed women reveals that a maximum benefit rate of $700 per week would be more acceptable in the case of self-employed workers. Self-employed women also reveal that they are willing to contribute 2 to 3 percent of their net earnings for access to these special benefits (Rooney et al., 2003).

[23] Note that the Quebec's Act does not address this issue.

The Quebec legislation can serve as a basic framework for the proposed option. However, some variations should be considered since the option proposed in this paper calls for extending access to all special benefits under EI to self-employed individuals[24]. To avoid self-selection, participation should be mandatory, as set out in the Quebec's legislation. The existing formula for calculating the required financial means is likely to be inadequate in the case of the self-employed given the fact that the self-employed have considerable overhead expenses, which must be paid when they are on leave. Gross income, as stipulated in the Quebec's *Act*, would be a better measure. Hours worked is the major criterion used to determine the eligibility of paid employees to collect the benefits under the current EI system, with the minimum being 600 hours worked in the previous 52 weeks. In the case of the self-employed, basing eligibility on a minimum amount of gross income would better reflect the nature of self-employed work.

However, policy design should also consider an overlooked fact that the self-employed earnings are irregular in nature. This implies that the collection of contributions, particularly from the low-income entrepreneurs, should be on a different schedule than the usual monthly contributions. Perhaps, annual or semi-annual contributions would work better in the case of self-employed. Special provisions are also required to protect low-tenure entrepreneurs who are most likely to experience low income or negative profits in the early stages of their self-employment.

8.3.1.2 Make Private Insurance More Affordable to Self-Employed Individuals

As pointed out before, a spousal plan is the main source of health-related benefits coverage for some self-employed individuals. For others, income plays a crucial role, with the disability insurance model clearly revealing this fact. This policy option requires the federal government to provide greater tax incentives to self-employed individuals to purchase private insurance for personal income replacement in case of health-related work interruptions. This would be achieved by allowing the premiums paid by the self-employed to be tax-deductible.

Under current tax regulations, self-employed individuals who purchase private disability plans that cover personal income replacement cannot claim their premiums as a business expense. In a

[24] "Under Quebec's plan, maternity and parental benefits would be separated from sickness and unemployment benefits and administered by the Régie des rentes du Québec. Sickness and unemployment benefits would remain under federal jurisdiction and prorated amounts of employee and employer premiums would remain the same" (Rooney et al., 2003: 53).

recent survey, Rooney et al. (2003) found solid support for this alternative among self-employed women. The interviews revealed that about 87 percent of self-employed women believed they would be more likely to purchase disability insurance if they could deduct the premiums from their income tax. It is assumed that other vulnerable groups share this view.

While the SSE data do not allow for inference on this specific question, a related question was asked: *Would you be interested in paying premiums on an insurance program, which would pay you benefits if poor business conditions cause you personal financial problems?* Only about 40 percent of survey respondents gave affirmative answers to this question. A look at the split gender files reveals that self-employed women earning less than $40,000 were less likely to give a confirmative response to this question, while the male sample shows similar percentages of positive and negative responses, across different income ranges. Making premiums tax deductible is likely to increase the percentage of positive responses, and possibly induce self-employed women earning less than $40,000 per year to join the plan.

8.3.1.3 Provide Savings Incentives to Low-Income Entrepreneurs

As this study reveals, low-income entrepreneurs, non-savers, and those who have experienced past financial distress being self-employed are less likely to have at least one health-related benefits coverage. The same segments of the self-employed population are also less likely to own an RRSP account. This policy option entails setting up a restricted use, self-funded, tax-sheltered savings plan for low-income self-employed individuals from which they can draw funds in the event of maternity or sickness, including caring for a critically ill spouse, partner, or child.

In its basic form, the plan would be modelled after the existing tax-sheltered plans. However, to encourage greater participation of those who are the least well off, a matching grant of 20 percent would be added annually. The plan would require that the funds withdrawn be paid back incrementally over a 10-to-15-year period, and, at retirement age, the funds would be rolled into RRSPs. In addition to serving as a buffer for large and unforeseen expenses, this savings option will also serve as an additional incentive to the low-income self-employed to save for their post-retirement income and eventually to generate a savings habit.

The option is inspired in part by the recent focus on asset building mechanisms as effective means to encourage savings behaviour and promote development of assets amongst the low-income households. Individual Development Accounts (IDAs) are currently the most prevalent vehicles used in some parts of the United States and Canada to implement this strategy[25] (Kingwell et al., 2005). Another source of inspiration was the recent proposition of Tax-Prepaid Savings Plans (TPSPs), which already exist in the United States and the United Kingdom, although they are not particularly targeted to low-income individuals in these two jurisdictions. Finance Canada has indicated some interest in TPSPs in the 2003 and 2004 budgets; however, there is presently no proposed legislation in Canada for this kind of asset building mechanism[26] (Shillington, 2005).

As first proposed by Kesselman & Poschmann (2001), the TPSP is a tax incentive designed to encourage savings amongst all individuals by sheltering returns on savings within the plan and by making withdrawals of the contributions tax-free. The effectiveness of the TPSP is said to be particularly promising in the case of individuals who expect to face higher effective marginal tax rates during retirement years, relative to the periods of contributions. Another appealing feature of this savings option for the low-income earners is that the savings accumulated within the plan would be excluded from the calculation of means-tested social program entitlements.

The TPSPs option, however, does not allow for up-front income tax deductions for contributions to the plan. Judging by the empirical analysis done in this report, this fact alone is likely to make the TPSPs less appealing to the low-income entrepreneurs[27]. Also, as proposed, the TPSPs could involve penalties for early withdrawals in order to ensure that the contributed savings are locked

[25] Individual Development Accounts (IDAs) is a generic name for asset-building programs that offer a generous matching grant for every dollar participants save on their own. These programs are based on the assumption that low-income earners will respond positively to financial incentives and develop long-lasting savings habits. The best known Canadian version of this anti-poverty program is called *learn*$ave and is the largest display of IDAs for learning for low-income individuals anywhere in the world. For every dollar that a participant deposits in this account, *learn*$ave contributes an additional two to five dollars, depending on geographic location of the participants. These are restricted-use savings that can be withdrawn only to finance approved expenditures, which in the case of *learn*$ave include post-secondary education, skills development, or a new small business (Kingwell et al., 2005).

[26] A similar savings plan that already exists in Canada is Registered Educational Savings Plan (RESP) in which contributions are made out of after-tax income and where income earned on funds inside the RESP is exempt from annual taxation. However, the TPSPs option is arguably more favourable since some withdrawals from the RESP are taxed (Shillington, 2005).

[27] Current analysis reveals that the low-income entrepreneurs simply do not have funds to set aside, as indicated by their lack of participation in RRSPs, which do allow for up-front tax relief. Based on the literature review, this is not as surprising since the self-employed are believed to be the type of individuals who put high premiums on retaining current income for business purposes. To induce savings participation among the low-income entrepreneurs, additional financial incentives would be required.

in. Given the nature of the self-employment career and the primary purpose of setting up this savings account, the lock-in provision would make the TPSPs unsuitable to the low-income entrepreneurs, for they may need to withdraw from their savings at unpredictable times. Finally, for low-income individuals to reap the benefits from the clawback protection, cooperation from the provincial governments would be necessary since many means-tested programs are delivered by the provinces and as such fall outside the jurisdiction of the federal government.

The savings option proposed in this paper attempts to encourage savings for both planned and unplanned expenditures amongst the low-income entrepreneurs by strengthening their financial ability to make the needed contributions through tax relief. Although the initial amount of tax relief may not be as significant to some low income entrepreneurs and not applicable at all to those bellow the taxable income range, they can all still benefit from this option since Revenue Canada allows contributors to carry forward any unused room for use in subsequent years, indefinitely (Palameta, 2003). In the mean time, the participants can accumulate the matching grants and thus begin developing a savings habit, which is one of the important objectives of this option. As such, the option is more likely to support the entrepreneurs' efforts towards economic self-sufficiency because it involves immediate tax deductions and an additional matching grant[28]. The option would particularly serve the needs of self-employed women, a great majority of whom, about 88 percent, in both non-professional and professional occupations, have already expressed interest in such a savings plan (Rooney et al., 2003).

8.3.2 Improve Access to Resources

8.3.2.1 Expand Training and Mentoring Services

The components of most current self-employment programs include skills training, assistance in researching the viability of business ideas, and facilitating the development and implementation of business plans. The current scope, however, is limited to a transitional period of a maximum of 52 weeks and to unemployed individuals only. Torjman (2000) points out that many people are being channelled into the self-employment stream with great hopes for financial independence

[28] It should be emphasized here that the matching grant of 20 percent is only a suggestion. The grant can be substituted with a tax credit such as GST or the amount can simply be increased. In fact, while *learn$ave* matching rate ranges from $2 to $5, typical IDAs matching deposits range from $1 to $8 for every dollar saved by participants (Kingwell et al., 2005).

and with unrealistic notions about the time and effort required to establish a successful business. Although the present study highlights the difficulties facing involuntarily self-employed individuals, the data also reveal that voluntary entrance is not enough for attaining socio-economic independence.

The first option under improving the access to resources thus calls for expanding the scope of this support, in terms of both the reach and the time frame. This change would be of particular benefit to low-tenure entrepreneurs as well as to own-account entrepreneurs willing to expand their operations but lacking adequate skills and resources to do so. By enhancing human capital capacity, the strategy is also likely to improve the economic prospects of vulnerable groups such as women and low-income entrepreneurs and thus minimize the social costs associated with business failure. The training needs, however, are not limited to business operation.

The SSE data reveal that only 13.5 percent of entrepreneurs have training needs related to business operation. A much larger proportion, about 35 percent, report having training needs related to the knowledge and skills associated with their profession or occupation. The split gender files reveal that similar percentages of women entrepreneurs report the need for training related to their profession or occupation and their business operation, about 38 and 22.5 percent, respectively. In the case of self-employed men, only 13.4 percent report training needs related to business operation, compared to 50 percent who report a need to strengthen the skills and knowledge related to their profession or occupation. Low-tenure and own-account male entrepreneurs show similar preferences for occupational training over business operation training. The training needs of low-tenure and own-account women are more merged, with a majority reporting they need both types of training.

8.3.2.2 Introduce a Specialized Financial Security Education Program

The second option related to improving access to resources requires the government to introduce a new specialized program aimed at improving entrepreneurs' financial literacy with respect to retirement and other important investments. The program should account for the heterogeneous nature of the self-employed workforce and provide tailored guidance, particularly to women and those whom previous financial difficulties have discouraged from making prudent financial plans for their future. For retirement purposes, for instance, the program should be designed in such a

way that it gives midlife and older self-employed individuals the skills and assurance needed to make informed decisions.

The primary aim of this program is to enable self-employed individuals to increase their financial management skills, develop confidence in their decision making and gain greater control over their future finances by taking charge of their actions today. This intervention can particularly benefit those entrepreneurs who have experienced past financial difficulties being self-employed by re-educating them about sound investment techniques and portfolio diversification benefits, thus lessening the degree of risk-aversion they have developed over time.

This specialized program would also address the information asymmetry that exists in the self-employment sector and as such would require a greater degree of intergovernmental cooperation as well as the engagement of the private and voluntary sectors. Like lower income tax payers (SEDI, 2003), lower income entrepreneurs are at a significant disadvantage with respect to obtaining relevant information that can benefit them. Rooney et al. (2003), for instance, found that the existing option of obtaining disability benefits through the Canada Pension Plan and provincial workers' compensation programs was not widely known among the self-employed.

Finally, given the demonstrated importance and the positive effects of association membership on the socio-economic well-being of the self-employed, this option would expand awareness of existing support networks for the self-employed — particularly as it applies to obtaining access to group benefits plans. Highlighting benefits such as the savings from pooling resources with other self-employed individuals and the possibility of joining pools of self-employed individuals can be informative for those who are currently non-members, for whatever reason.

The SSE data offer an insight with respect to non-membership among the self-employed. The greatest percentage, about 17 percent, of non-members said that they have never inquired about membership when asked: *What is the main reason that you do not belong to an organization?* A significant proportion, 10.5 percent, said they were unaware of any such organization, and over 8 percent said they had no time to participate. Only four percent of those not belonging to professional or other associations believed that membership has no value. Providing accurate and timely information through a convenient channel appears to be the key for inducing greater membership participation among current non-members.

8.4 Policy Evaluation Framework

8.4.1 Assessment Method

Due to the data limitations, this study does not provide precise cost calculations for the included alternatives. Instead, the perceived strengths and weaknesses of each alternative are listed in a ranked matrix, and arguments are presented with respect to each. Predicted consequences of each alternative are then used to assess the alternative's effectiveness in achieving the set objectives. Inferior alternatives are then eliminated, and only dominant options are retained for consideration. This method does not necessarily identify the preferred option, but it helps in shortening the list.

8.4.2 Assessment Criteria

Policy alternatives are assessed against a fixed set of criteria, which include effectiveness and affordability, distributional aspects, administrative complexity, and political viability. These criteria are the measurable dimensions of the objectives set out above. The rationale and ranking procedure for each criterion is explained below.

8.4.2.1 Effectiveness

This criterion measures the extent to which each alternative can contribute to an improvement in the socio-economic status of the above-designated groups of self-employed individuals. The proposed policy should have the greatest potential for attaining the goal and the objectives set forth in the problem statement. The evaluation process involves identifying the strengths and weaknesses of each alternative and ranking the alternatives on a scale of high, moderate, and low.

8.4.2.2 Affordability

Enhancing the socio-economic status of the self-employed would impose costs on the government. The critical guiding question here is: would the policy create incentives that would keep those costs to a minimum? An alternative question would be: are the costs associated with the option greater than the risk of doing nothing? The proposed options are also likely to impose financial burdens on the self-employed themselves, particularly those involving savings

incentives. An option that minimizes the additional costs to low-income entrepreneurs is deemed superior to one which does not. Hence, the affordability of options is ranked as high, moderate, or low.

8.4.2.3 Distributional Effects

When possible, an attempt is made to highlight the distributional effects in all four forms: horizontal equity, which requires that equals be treated equally; vertical equity, which looks at the distribution of benefits and costs across unequal groups; transitional equity, which highlights the winners and losers likely to surface from implementation of an option; and finally intergenerational equity, which looks at long-run costs and benefits to future generations. The self-employed groups are identified primarily on the basis of income and gender. The guiding principle here is to protect the poorest and, at the same time, avoid unnecessary beneficiaries.

It should be noted here that there are no universally approved optimal answers when using this criterion. It ultimately involves normative judgments as to how benefits and burdens should be distributed. To minimize any error in judgment, a matrix listing major stakeholders and their motivations and interests, found in *Appendix K*, is utilized in this analysis. The ranking procedure is identical to the previous two, with fair, moderate, and poor distributional effects ranked as high, moderate, and low in equity, respectively.

8.4.2.4 Administrative Complexity

The diversity found in the self-employment sector and the fact that this paper focuses on specific segments of the self-employed require that the policy option be fairly flexible and specific case sensitive. This has the potential of creating an administrative burden and implementation difficulties. The underlying rationale for this criterion is that the chosen alternative should not impose an overly burdensome administrative load and the execution should be fairly simple and easy, relative to the excluded options. The degree of administrative complexity associated with each alternative is derived from recent studies on this topic and ranked as high, moderate, or low.

8.4.2.5 Political Viability

Although the issue of the social security of self-employed workers has arrived on the federal government's policy agenda, there appears to be no consensus on how the issue should be handled. The central debate revolves around equity issues and government involvement. The key consideration here is not only general political acceptability but also entrepreneurs' responsiveness to the alternative in question. The level of political acceptance and responsiveness is inferred from recent debates on the issue and ranked as high, moderate, or low. The table in *Appendix K* displaying the beliefs and motivations of different actors involved in the issue is used to assist the assessment of this criterion.

8.5 Policy Evaluation Outcome

The final summary of the policy options assessment is displayed in *Table 19* below. Each policy option found in the first row of the table is assessed against the same set of criteria found on the right hand side. As indicated before, the desire to avoid information suppression in the face of issue complexity precluded the use of numerical weighting. As a result, the ranking approach of high, moderate, and low is used in all cases. The argumentation for the ranking is provided with respect to each policy option considered in the matrix.

Table 19: Matrix Scorecard for Policy Options Assessment

Policy Options	Assessment Criteria				
	Effectiveness	*Affordability*	*Equity*	*Administrative Complexity*	*Political Viability*
REMOVING BARRIERS					
Extend EI Eligibility	MODERATE	LOW	LOW	HIGH	HIGH
Make Private Insurance Affordable	HIGH	LOW	LOW	HIGH	LOW
Provide Savings Incentives	HIGH	MODERATE	MODERATE	LOW	HIGH
IMPROVING ACCESS TO RESOURCES					
Expand Business Training	HIGH	HIGH	MODERATE	LOW	HIGH
Provide Financial Education	HIGH	HIGH	HIGH	LOW	HIGH

8.5.1 Removing Barriers

8.5.1.1 Extend Employment Insurance (EI) Eligibility to the Self-Employed

Effectiveness: Extending the special benefits under EI to self-employed individuals has a great potential to alleviate the difficulties they currently face being self-employed. The option sounds particularly promising in the case of own-account entrepreneurs, self-employed individuals with dependent children in the household, and self-employed women lacking health-related benefits coverage. Mandatory participation would address the issue of adverse selection, although the issue of moral hazard would remain[29]. This option also needs further investigation in order to determine its effectiveness in reaching the poorest segments of the self-employed population.

[29] In the insurance industry, adverse selection occurs *before* a contract has been written and involves *hidden information*, which makes it hard for insurance providers to distinguish good from bad risk. Moral hazard, on the other hand, occurs *after* a contract has been written and involves *hidden actions* on the part of the insured that are in general unobservable by the insurance providers. Monitoring has been proposed as a potential remedy for the moral hazard problem. This strategy, if applicable at all, can be quite costly. A more practical approach would be to introduce incentives and risk-sharing through deductibles and higher premiums that prevent behavioural changes.

***Affordability*:** A number of unresolved issues complicate the assessment of this option by this criterion. Expert judgment is needed to decide whether contributions should be based on the risk or on the ability to pay and what conditions or restrictions should be imposed on the claiming of benefits in order to reduce the incidence of moral hazard. Nevertheless, even with a low incidence of moral hazard, extending major benefits to the increasingly large population of self-employed individuals poses significant fiscal issues. Hence, the option is ranked as low with respect to affordability.

Equity: This option is likely to raise perceptions of unfairness among the public with respect to several issues. First, the diversity among self-employed individuals and the necessity to accommodate the needs of different types of self-employment circumstances demand an adjustment to the current formula for payable benefits so that the self-employed receive weekly payments that can adequately cover their expenses. This, in turn, may raise concerns about inequity among paid employees.

Second, basing eligibility on gross income, as opposed to minimum hours worked, is likely to produce the same response from paid employees, many of whom currently do not qualify to receive benefits due to various eligibility restrictions[30]. Concerns may also arise among the self-employed themselves if the minimum level for gross income is set at a level that is deemed unfair. Setting the criterion too high may exclude those most in need of the program, yet setting it too low could encourage abuse of the system. Hence, this option is ranked as low on the equity criterion.

Administrative Complexity: Extending EI to self-employed individuals involves significant fiscal, legislative, and administrative challenges. The extension would require legislative changes to separate special benefits, which include short-term sickness, compassionate care, maternity, and parental benefits, from the regular EI benefits that provide partial income replacement to the unemployed due to job loss. This option also entails a significant administrative burden since it requires a plan that meets the different needs and circumstances of a highly heterogeneous population. Therefore, this option is ranked as high with regards to administrative complexity.

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[30] For instance, currently less than half of the unemployed benefit from EI, compared to over 80 percent in 1999. Although not all of this drop in coverage can be attributed to changes in program rules, much of it is (Saunders, 2006).

Political Viability: Some of the recent studies have revealed that overall there is strong support for this intervention among self-employed women. Rooney et al. (2003), for instance, reported that the majority of self-employed women, 82 percent of professionals and 96 percent of those in lower-earning fields, want access to maternity and sick leave benefits. Other studies, however, show that there are mixed views among the self-employed and among organizations that represent them regarding the positive outcomes of this intervention (HRDC, 2001).

Nevertheless, in its response to the Third Report of the Standing Committee on Human Resources Development and the Status of Persons with Disabilities, the Government of Canada has expressed openness to this idea. Implementation of Quebec's plan is expected to provide the needed information with respect to policy concerns associated with extending EI coverage to the self-employed. Therefore, this option is ranked as high with respect to political feasibility.

8.5.1.2 Make Private Insurance More Affordable to Self-Employed Individuals

Effectiveness: This option provides greater flexibility for self-employed individuals with respect to choice since private insurance providers can choose to develop specialized products that better meet the unique needs of different groups within the self-employed population. As pointed out earlier, this option is also likely to stimulate the purchase of disability insurance since entrepreneurs have already expressed their preference for this type of policy intervention. For these reasons, this option is ranked as high on the effectiveness scale.

Affordability: The flexibility embedded in this option has the potential to attract a greater number of participants. However, the participants still need to qualify for the coverage, and the cost remains a limiting factor, particularly for low-tenure entrepreneurs and those with very low income. Also, the fact that insurance companies have not investigated the self-employed market seriously may mean that it is not feasible for them to engage in such a business since small pools of contributors would not allow for risk-spreading. Since this option is likely to leave out the most vulnerable segment of the self-employed population — those earning a very low income will be unable to participate — this option is ranked as low on the affordability scale.

Equity: As noted above, considerable vertical equity issues are likely to surface with this policy option. In addition to financial constraints preventing the participation of low-income

entrepreneurs, some individuals with pre-existing health conditions are likely to be denied private insurance at any cost. It could also be argued that claiming disability insurance premiums as a deduction and receiving the payable benefit exempt from tax is likely to be perceived as unfair by other actors involved. Therefore, this option is ranked as low with respect to equity.

Administrative Complexity: This option involves the private sector, which may imply a significant administrative complexity. It is hard to design a plan that meets the needs of a small heterogeneous segment of the population and at the same time meets the needs of insurance companies. Unless made mandatory, the greater likelihood of self-selection bias would make the plan highly expensive for the self-employed and unprofitable for insurance companies. Government regulation of any kind, under such circumstances, would be harmful in general. Therefore, this option is ranked as high on the administrative complexity criterion.

Political Viability: As mentioned above, the private sector is not likely to find this policy option acceptable due to feasibility issues. This option may also be viewed as a weak attempt to address the needs of targeted groups, for the reasons already mentioned above. Hence, other stakeholders may be reluctant to support such an initiative. The failure of attempts by other jurisdictions to experiment with this option (Rooney et al., 2003) only reinforces the opposition to this idea. Therefore, this option is ranked as low with regards to political viability.

8.5.1.3 Provide Savings Incentives to Low-Income Entrepreneurs

Effectiveness: This policy option has the potential of meeting two criteria simultaneously. First, it would encourage the self-employed to save in advance, thus giving them a sense of financial security in case needs arise. Second, in the absence of needs, this option provides for more savings to be deposited for retirement. In a broader sense, this would help generate savings habit and maximize the chances that the self-employed would have some source of post-retirement income. Hence, this option ranks high on the effectiveness scale.

Affordability: Although this option allows for poverty escape through assets accumulation, it poses some constraints when it comes to affordability. As this study reveals, low-income entrepreneurs, non-savers, and those who have experienced past financial difficulties being self-employed are not only less likely to have at least one health-related benefits coverage but also

less likely to make RRSP contributions. The tax-relief associated with RRSP contributions is obviously not strong enough to encourage the participation of low-income entrepreneurs. This raises the question of whether the incremental benefits of introducing another RRSP-like plan would justify the costs associated with it. Recent studies report that low-income earners who save through RRSPs get essentially no financial benefit at retirement[31]. Combining this evidence with the fact that the matching grant proposed in this option may serve as an additional incentive to low-income entrepreneurs, this option is ranked as moderate with respect to affordability.

Equity: The major shortcoming of this policy option, as implied above, is the issue of vertical equity and inclusiveness. Depending on the income cut-off line, some low-income individuals are likely to benefit from this intervention. However, those with very low disposable income and those in the initial stage of their self-employment may simply not have the financial capacity to contribute at all. This would give a disproportionate windfall to those bordering low income at the upper range. Hence, this option is ranked as moderate on equity grounds.

Administrative Complexity: Administering this option should be fairly straightforward since government-supported asset-building savings plans similar in design and purpose already exist. In addition to the RESP program, the closest example would be the federal experiment, *learn$ave*, used as an incentive for low-income Canadians to save for learning opportunities (SEDI, 2003). Therefore, this option is ranked as low with regards to administrative complexity.

Political Viability: While some resistance to publicly-subsidized savings and asset-building strategies may be expected from the general public, asset-building is an emerging approach to economic security issues, receiving a high standing with governments and other stakeholders. Although it is still in its infancy, recent evaluations of the *learn$ave* program show impressive results (Kingwell et al., 2005). Given that this option proposes a similar plan targeting a similar population in the self-employed sector, political support is likely to be high.

[31] Kesselman & Poschmann (2001) explain that the existing system of tax-supported savings in fact penalizes lower-income individuals. Under the current system, low-income earners are ineffectively sacrificing their savings by contributing to RRSPs because they receive few or no tax deductions and these savings may be entirely clawed back through income-tested benefits and means-tested public retirement programs such as elderly social programs.

8.5.2 Improving Access to Resources

8.5.2.1 Expand Training and Mentoring Services

Effectiveness: The effectiveness of this option is likely to be significant since it allows specific segments of the self-employed to build their capacity to deal with changes and transitions over their life course, particularly as it applies to changing skill requirements. Enabling a growing number of women, low-tenure, and own-account entrepreneurs to acquire the skills they need to succeed would minimize their chances of becoming vulnerable workers. Reduction in bankruptcy rates and other distresses would translate into increased employment and economic growth and lower dependence on public assistance. Hence, this option is ranked as high on this criterion.

Affordability: The numbers of people that these groups represent are significant in the self-employment sector, implying a considerable increase in incremental expenditure on the government side. Nevertheless, taking into account the potential long-term benefits of this intervention, it is safe to rank this option as high with respect to affordability.

Equity: Since this option targets specific segments of the self-employed population such as low-income, low-tenure, own-account, and female entrepreneurs, vertical equity is not likely to be an issue. However, although the analyses in this report did not assign statistical significance to the relationship between job-related training and income, it is interesting to note that the majority of self-employed people who undertook formal training were individuals belonging to the $60,000 or more annual income category. This reveals the value they place on such support and their potential interest in having a continuous access to this resource. To be on the safe side, this option is ranked as moderate with respect to equity considerations.

Administrative Complexity: It is assumed that administering this option would involve a minimum amount of complexity, relative to other options that require a sizable adjustment to the current institutional framework. As mentioned before, formal training is already a part of the federal government's self-employment programs. However, since the primary motivation behind this initiative is to expand this program to enable specific segments of the self-employed to strengthen their skills and gain the capabilities necessary to run a successful business, this option

might require some careful planning to prevent both underutilization and abuse of the program. This option, however, is still considered as low with respect to administrative complexity.

Political Viability: Support for this option is likely to be strong considering the widely spread acknowledgment that skill development on the macro level is central to productivity growth. The fact that this initiative targets specific segments of the self-employed population should not lessen this support. There is a growing recognition that asset-building, including the building of human capital assets, should be a part of the government's anti-poverty strategy (SEDI, 2003; Saunders, 2006). Therefore, this option is ranked as high on the political viability criterion.

8.5.2.2 Introduce a Specialized Financial Security Education Program

Effectiveness: Introducing a specialized financial literacy program for the self-employed would be the least costly option to the government, yet it has the potential of creating positive outcomes similar to other, more capital-intensive options. Efficiency gains associated with increasing levels of financial literacy among the self-employed are directly related to a lower risk of social and economic exclusion in an increasingly complex business environment. This option would strengthen the personal capacity of individuals to save effectively for future needs and ensure maximum utilization of other government programs, particularly those involving tax and other benefits. In the end, all of this would translate into lower dependence on public assistance. Therefore, this option is ranked as high with respect to effectiveness.

Affordability: As already pointed out, this option involves minimum pressure on government revenues. An additional benefit of this option is that the effort is shared with multiple stakeholders, including the private and voluntary sectors. Provided care is taken to select pragmatic modes of program delivery, its affordability for the self-employed is also likely to be high. Therefore, this option is ranked as high with respect to this criterion.

Equity: Unless the program delivery is set up in such a way that it imposes costs on the participants in order to obtain the benefits, there are no perceivable equity issues with this option. It is assumed that practicality would be a guiding principle in setting up this program. Therefore, this option is ranked as high with respect to equity.

Administrative Complexity: Since the federal government has been providing educational programs with similar objectives for a long time, it is presumed that this option would involve a minimum level of administrative complexity. However, challenges may arise due to the need for higher levels of intergovernmental cooperation as well as the involvement of the private and voluntary sectors. This still produces a low level of administrative complexity, as the ranking in *Table 19* illustrates.

Political Viability: Increasing national literacy, in general, is already one of the priorities on the Canadian government's policy agenda. The private sector also has a vested interest in this initiative. Professional and other associations serving the needs of the self-employed have already demonstrated a commitment to this cause. Hence, the political viability of this option is ranked as high.

8.6 Policy Recommendations

Table 20 below contains a bundle of recommended policy options, sorted out by different timeframes. Instead of singling out a particular option, this paper proposes a bundle of several options, some of which focus on making existing policies and programs function more effectively, while others are new policy ideas. Indeed, some of these options serve more as complements by enhancing the effectiveness of the related ones. The timeframe for action is set primarily based on the administrative complexity involved with each option.

As *Table 20* reveals, the private insurance alternative is excluded from the proposed policy options bundle. Based on the above analysis, this option does not come close to meeting the set objectives. The major shortcoming of the private insurance option lies in the private sector's reluctance to engage in business with the highly heterogeneous self-employed population.

Even if interest could be developed among private insurance providers, the high level of administrative complexity and the likely terms and conditions would exclude the very segments of the self-employed population that this study finds to be in the greatest need. Therefore, other avenues are needed to promote the economic self-sufficiency and social security of self-employed individuals. Compared to leaving the private sector to support self-employment on its own, the

options retained in the recommended bundle have a greater potential to protect the interests of the most vulnerable segments of the self-employed population.

Table 20: Proposed Objectives and Policy Recommendations

Recommended Policy Options	Policy† Objectives Addressed	Target Actors	Timeframe for Action
Raise financial literacy levels among self-employed individuals and alleviate information asymmetry in the self-employment sector	1, 2,3	Federal and provincial governments; private and voluntary sectors	Short term
Help the low-tenure self-employed develop their skills through expanded access to training and mentoring services	1	Federal and provincial governments	Short term
Consider financial incentives to encourage savings among the low-income self-employed	2,3	Federal and provincial governments	Short term
Change the eligibility rules for EI to enable the self-employed to access special benefits (Launch rigorous research for viable options)	2,3	Federal government	Long term (requires more detailed policy development)

† *Recall that the policy objectives considered are (1) maximize the number of self-employed earning an annual income of $40,000 or more (2) maximize RRSP participation among the self-employed, and (3) maximize the number of self-employed people with health-related benefits coverage.*

Removing the existing barriers to accessing the special benefits under the EI program would provide significant help in meeting the set objectives with respect to the social security of the self-employed. This option is also gaining strong political support. However, the fiscal burden and administrative complexities involved with this option require a longer timeframe to develop workable plans, as indicated in the last column of *Table 20*. Therefore, this option is included in the bundle only as a long-term goal for policy makers. The primary recommendation with respect to this option relates to further research and policy development. Finding out more details on entrepreneurs' willingness to pay for different options and combinations would be highly useful.

Establishing savings incentives for the low-income self-employed is also gaining strong acceptance among policy makers. This option, however, would not require significant amount of time to develop feasible plans that can be implemented with minimum administrative complexity because similar savings programs are already in place. Given the high potential of asset building

mechanisms in alleviating financial distress and affecting positively economic behaviour of the low-income earners, this option is highly recommended as a short-term goal for policy makers.

Improving access to resources involves significantly fewer administrative complexities as compared to removing barriers through extending EI coverage to the self-employed. As with the savings option, the program framework for this option is already in place. In fact, as illustrated in *Table 19*, this policy avenue is highly affordable and highly effective in meeting the set objectives. Political viability is also strong, while a small issue arises with equity considerations in the case of expanding business training and support services to existing entrepreneurs.

Similarly, improving the financial literacy levels of self-employed individuals and removing information asymmetry from the self-employed sector is likely to produce significant improvements in the levels of socio-economic security for less-informed entrepreneurs. This policy option is also likely to be highly affordable and highly acceptable at all levels. Therefore, expanding training and mentoring services and raising financial literacy among the self-employed can be pursued in the short run.

As a final note, it should be reinstated that none of the above options is sufficient in itself. Combining the options or adding increments has a grater potential for producing tangible and lasting results. For instance, while introducing savings incentives may alleviate financial conditions of some low-income entrepreneurs and affect positively their savings behaviour, it would do little to those whose disposable income is hardly covering their daily life expenses. Strengthening their human and social capital by offering training and business support and assisting business network expansion would ensure that they have the funds to invest in the savings plans intended to build assets and stabilize their financial situation. Similarly, combining financial education with the savings option proposed above would reinforce the participants' desire to save and insure that they have accurate information regarding their financial security.

9 Conclusion

The objective of this study was twofold: (1) to examine income determinants and factors affecting the choice of self-employed Canadians to own an RRSP account and to have at least one health-related benefits coverage, and (2) to explore policy avenues that can help in improving the odds that self-employed individuals will earn an annual income of $40,000 or more, participate in RRSPs, and have health-related benefits coverage. After reviewing the existing literature on these topics, a series of separate logistic regressions were run for each model. The main purpose of the statistical analysis was to identify common factors and use them in designing policy options for improving the socio-economic status of self-employed Canadians.

The empirical results gave a wealth of information about the current socio-economic status and coping mechanisms of the self-employed. In a condensed form, the two most informative pieces of information that came out of the statistical models relate to segmentation and the disparity in financial ability among the self-employed. First, although highly marginalized, female entrepreneurs are not the only group experiencing difficulties being self-employed; own-account entrepreneurs, the involuntarily self-employed, low-tenure entrepreneurs, and self-employed people who have children below age 15 all show similar signs of distress from being self-employed. Second, the current income, accumulated wealth, and savings behaviour of the self-employed resurface repeatedly in the RRSP and health-related benefits models.

These two pieces of information were the guiding principles in selecting policy options. After assessing the selected options based on a fixed set of economic, equity, political, and administrative criteria, a bundle of viable policy options was recommended to be implemented in a sequential order. The first two options from this bundle involve (1) improving access to resources through expanding business training and mentoring services to the existing vulnerable segments of the self-employed population, and (2) improving the financial literacy levels of self-employed individuals and removing information asymmetry from the self-employed sector. Because implementing these options involves a minimum level of administrative complexity, they are recommended for implementation in the short term.

The next recommended step involves removing the existing barriers by (1) introducing savings incentives for low-income entrepreneurs, and (2) launching further research on avenues for extending the eligibility criteria for the special benefits under EI to self-employed individuals. The first of these options, savings incentives, is recommended for the short-term consideration. The option is likely to be highly effective and to involve a minimum level of administrative complexity since similar frameworks are already in place with a good reputation as being viable tools to fight poverty. Given that extending EI to the self-employed involves both a considerable fiscal burden and a significant degree of administrative complexity, only rigorous further research and policy development is recommended for this policy option, as a long-term goal.

Appendices

Appendix A: Bivariate Analysis for the Income Model

Table A1: Bivariate Analysis for the Income Model

Selected Variables	Income		Pearson Chi-Square Test	
	% Below $40,000	% Above $40,000	Value	Asymp. Sig. (2-sided)
Education			210.954	0.000
University	9.5	14.4		
PSE Diploma	20.6	10.5		
Some PSE	5.0	2.8		
HS Diploma	12.7	6.6		
<HS Diploma	13.6	4.1		
Job-Specific Training			104.554	0.000
Took Both Formal & Informal Training	13.1	14.0		
Took Formal Training Only	0.6	0.3		
Took Informal Training Only	33.1	19.1		
Took No Job-Specific Training	14.8	5.1		
Work Experience			7.214	.065
No Experience at all	1.9	1.3		
Employee Only	18.5	11.6		
Self-Employed Only	2.5	2.3		
Employ & Self-Employ	38.6	23.2		
Tenure of Current Self-Employment			36.866	0.000
<2 Years	4.8	2.2		
2 — 4 Years	15.7	8.1		
5 — 9 Years	15.7	8.5		
10 — 19 Years	14.0	12.2		
20 or More Years	11.2	7.7		
Membership in Associations			191736	0.000
Member	21.5	23.4		
Non-Member	40.0	15.1		
Work Arrangement			71.030	0.000
Works from Home	16.9	5.5		
Works outside of Home	44.6	32.9		
Class of Self-Employment			306.898	0.000
Incorporated with Employees	11.6	15.6		

Selected Variables	Income		Pearson Chi-Square Test	
	% Below $40,000	% Above $40,000	Value	Asymp. Sig. (2-sided)
Incorporated without Employees	8.5	5.2		
Unincorporated with Employees	6.0	7.1		
Unincorporated without Employees	35.4	10.6		
Gender			116.189	0.000
Male	38.1	31.0		
Female	23.4	7.5		
Age			25.155	0.001
15 to 29	3.7	1.6		
30 to 34	7.5	4.3		
35 to 39	7.6	6.6		
40 to 44	11.1	7.2		
45 to 49	9.6	6.3		
50 to 54	9.1	5.9		
55 to 59	6.6	3.9		
60 +	6.3	2.8		
Marital Status			2.332	.312
Single, Never Married	7.0	3.9		
Widowed, Separated, or Divorced	6.0	3.4		
Married or Living Common Law	48.6	31.2		
Children Age			8.095	0.017
<6	17.5	14.8		
6 — 15	27.5	17.6		
16 — 24	14.2	8.5		
Origin			6.663	0.010
Immigrant	12.4	6.4		
Born in Canada	48.7	32.6		
Self-Employment as a Choice			104.513	0.000
Involuntary Self-Employed	9.5	2.1		
Discouraged Self-Employed	13.1	6.3		
Adjusted Self-Employed	6.4	3.3		
Voluntary Self-Employed	32.6	26.7		
Number of Jobs			3.734	.053
Multiple-Job Holder	3.6	1.6		
Single-Job Holder	57.9	36.8		
Hours Worked per Week at Main Job			164.851	0.000

Selected Variables	Income		Pearson Chi-Square Test	
	% Below $40,000	% Above $40,000	Value	Asymp. Sig. (2-sided)
<15	0.9	0.1		
15 — 29	9.0	1.5		
30 — 34	6.1	1.5		
35 — 39	4.5	2.4		
40	13.7	10.5		
41— 49	5.0	3.5		
50 Hours or More	22.3	19.0		
Industry			160.714	0.000
Primary Sector	8.6	2.7		
Construction	7.7	5.7		
Manufacturing, Transportation, & Warehousing	6.4	4.2		
Wholesale & Retail Trade	8.3	5.4		
Arts, Entertainment, Accommodation, Food, & Culture	11.9	2.6		
Professional, Scientific, & Technical Services	18.7	17.8		
Occupation			297.254	0.000
Processing & Manufacturing	1.4	0.8		
Occupations Unique to Primary Industry	9.2	2.8		
Trades, Transport, & Equipment Operation	12.6	6.7		
Childcare & Home Support	4.3	0.1		
Sales & Service	7.8	4.2		
Art, Culture, Recreation, & Sports	3.9	1.5		
Social Science & Education	1.6	2.5		
Health	0.7	3.4		
Natural & Applied Science	2.6	3.5		
Business, Finance, & Administration	5.2	4.3		
Management	12.1	8.6		
Region			25.028	0.000
Ontario	22.6	15.9		
Quebec	14.9	7.8		
Atlantic	3.0	1.1		
Prairies	12.5	6.9		
British Columbia	8.6	6.8		

Appendix B: Logistic Regression for the Income Model — Full Report

Table B1: Logistic Regression for the Income Model — Full Report

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Education						
University	.491	1.634	.582	1.789	-.205	.814
PSE Diploma	-.246	.782	-.159	.853	-1.880*	.153
Some PSE	.421	1.524	.541	1.717	-1.271	.281
HS Diploma	-.006	.994	.030	1.030	-.996	.369
<HS Diploma						
Job-Specific Training						
Formal & Informal	.073	1.076	-.190	.827	1.197	3.309
Formal Training Only	.255	1.291	.243	1.275	1.066	2.905
Informal Training Only	-.077	.926	-.374	.688	1.202	3.326
No Job-Specific Training						
Work Experience						
No Experience at all	.608	1.837	.942	2.564	-1.697	.183
Employee Only	.016	1.017	.018	1.018	-.322	.725
Self-Employed Only	.833*	2.300	1.038*	2.823	.321	1.378
Employ & Self-Employ						
Tenure of Current SE						
<2 Years	-1.383***	.251	-1.681***	.186	-1.393	.248
2 — 4 Years	-1.177***	.308	-1.325***	.266	-1.401	.246
5 — 9 Years	-.513*	.599	-.709*	.492	-.190	.827
10 — 19 Years	-.311	.733	-.317	.728	-.358	.699
20 or More Years						
Membership in Associations						
Member	.636***	1.889	.507**	1.661	1.607***	4.989
Non-Member						
Work Arrangement						
Works from Home	-.312	.732	-.367	.693	-.271	.763
Works outside of Home						
Class of Self-Employment						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Incorporated Employer	.808***	2.242	1.022***	2.779	.320	1.377
Incorporated Own-Account	.114	1.121	-.093	.911	1.451*	4.267
Unincorporated Employer	1.062***	2.892	1.225***	3.403	1.475*	4.371
Unincorporated Own-Account						
Gender						
Male	.877***	2.403				
Female						
Age						
15 to 29	1.130	3.095	1.473	4.363	-2.759	.063
30 to 34	.984	2.675	1.462*	4.314	-2.608	.074
35 to 39	1.102	3.010	1.479*	4.387	-2.264	.104
40 to 44	.404	1.498	.309	1.362	-1.636	.195
45 to 49	.290	1.336	.473	1.604	-3.360	.035
50 to 54	.236	1.266	.246	1.279	-2.732	.065
55 to 59	.217	1.243	.277	1.319	-2.587	.075
60 +						
Marital Status						
Single, Never Married	-2.591	.075	-1.772	.170	-19.584	.000
Widowed, Separated, or Divorced	.350	1.419	.558	1.746	-.091	.913
Married or Living Common Law						
Children Age						
<6	.157	1.170	.013	1.013	.603	1.828
6 — 15	-.176	.839	-.194	.823	-.527	.590
16 — 24						
Origin						
Immigrant	.349	1.417	.388	1.475	.617	1.853
Born in Canada						
Self-Employment as a Choice						
Involuntary Self-Employed	-.867***	.420	-.719*	.487	-2.232**	.107
Discouraged Self-Employed	-.080	.923	-.062	.940	-.427	.653
Adjusted Self-Employed	.073	1.075	.092	1.096	-.132	.877
Voluntary Self-Employed						
Number of Jobs						
Multiple-Job Holder	.209	1.232	1.216**	3.374	-2.475*	.084

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Single-Job Holder						
Hours Worked per Week						
<15	-.694	.499	.783	2.188	-19.032	.000
15 — 29	-1.004**	.366	-.343	.710	-1.324*	.266
30 — 34	-1.680***	.186	-3.065***	.047	-1.463*	.231
35 — 39	-.082	.921	-.815	.443	.473	1.605
40	-.087	.916	.062	1.064	-.383	.682
41— 49	.165	1.179	.075	1.078	.674	1.962
50 Hours or More						
Industry						
Primary Sector	.110	1.116	.669	1.952	.256	1.292
Construction	.273	1.314	.267	1.306	2.206	9.081
Manuf, Transp, & Warehousing	.280	1.323	.196	1.217	3.279**	26.559
Wholesale & Retail Trade	-.223	.800	.163	.849	-.279	.756
Arts, Ent, Acc, Food, & Culture	-.878**	.415	-.742	.476	-1.939**	.144
Profess, Sci, & Tech Services						
Occupation						
Processing & Manufacturing	.348	1.417	.626	1.869	-3.162	.042
Occ Unique to Primary Industry	-1.313*	.269	-1.831**	.160	-2.096	.123
Trades, Transport, & Equipment	-.349	.706	-.197	.821	-2.201	.111
Childcare & Home Support	-3.764**	.023	-21.173	.000	-4.095*	.017
Sales & Service	.254	1.289	.123	1.131	1.465*	4.328
Art, Culture, Rec, & Sports	.574	1.776	.699	2.011	.510	1.665
Social Science & Education	1.044*	2.839	1.269*	3.556	.789	2.200
Health	1.700**	5.474	1.516	4.556	1.412	4.102
Natural & Applied Science	.947*	2.578	1.157**	3.179	4.391*	80.735
Bus, Fin, & Administration	.705*	2.024	1.369**	3.931	-.170	.844
Management						
Region						
Ontario	-.258	.772	-.433	.648	.280	1.323
Quebec	-.677**	.508	-.895**	.409	-.467	.627
Atlantic	-.013	.987	.072	1.074	-.589	.555
Prairies						
British Columbia						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Constant	-1.410		-.486		1.258	
H-L Goodness-of-Fit Test	.213		.508		.186	
Cox and Snell's R^2	.335		.309		.437	
Nagelkerke's R^2	.451		.412		.652	
Cases Included in Analysis	N = 1,321		N = 815		N = 506	

*Note: Working weight in effect. Italicized text refers to the reference category. Statistical significance: ***p<.001; **p<.01; *p<.05*

Appendix C: Collinearity Diagnostics for the Three Models

Table C1: Collinearity Diagnostics for the Income Model

Coefficients	Collinearity Statistics	
	Tolerance	VIF
Education	.751	1.332
Type of Training Taken	.791	1.265
Work Experience	.930	1.076
Tenure of Current Self-Employment	.716	1.397
Has Membership in Professional Association	.833	1.201
Work Arrangement	.792	1.263
Class of Self-Employed Worker	.763	1.310
Gender	.687	1.456
Age Group	.518	1.929
Marriage	.966	1.035
Age of Youngest Own Child (Children)	.580	1.723
Immigrant	.920	1.088
Self-Employment as a Choice	.924	1.082
Number of Jobs Held	.965	1.036
Hours Worked per Week at Main Job	.786	1.273
Industry	.570	1.755
Occupation	.677	1.477
Region	.971	1.030

Table C2: Collinearity Diagnostics for the RRSP Model

Coefficients	Collinearity Statistics	
	Tolerance	VIF
Gross Personal Income in 7 Categories	.717	1.395
Has Other Forms of Savings / Investments	.868	1.151
Has Assets such as Home, Cottage, Business	.890	1.124
Has Other Assets such as Land, Rental Property	.848	1.180
Has Own Pension Plan from a Paid Job	.968	1.033
Dislikes Uncertainty, Risk, and Lack of Stability	.945	1.058
Experienced Financial Difficulties	.929	1.076
Education	.738	1.355
Gender	.764	1.309
Age Group	.558	1.791
Age of Youngest Own Child (Children)	.571	1.752
Has Membership in Professional Association	.853	1.172
Type of Training Taken	.793	1.261
Region	.962	1.040
Class of Self-Employed Worker	.759	1.318
Number of Jobs Held	.970	1.031
Self-Employment as a Choice	.848	1.180
Reference Industry	.617	1.620
Occupation	.701	1.427

Table C3: Collinearity Diagnostics for the Benefits Model

Coefficients	Collinearity Statistics	
	Tolerance	VIF
Gross Personal Income in 7 Categories	.655	1.526
Has Other Forms of Savings / Investments	.864	1.158
Has Assets such as Home, Cottage, Business	.879	1.137
Has Other Assets such as Land, Rental property	.824	1.214
Has Own RRSPs	.773	1.293
Spouse Work Status	.900	1.111
Has Membership in Professional Association	.841	1.189
Number of Jobs Held	.963	1.039
Region	.969	1.032
Education	.753	1.328
Gender	.729	1.372
Age Group	.527	1.897
Age of Youngest Own Child (Children)	.552	1.812
Tenure of Current Self-Employment	.755	1.324
Class of Self-Employed Worker	.736	1.358
Work Arrangement	.814	1.228
Industry	.619	1.616
Occupation	.690	1.448

Appendix D: Bivariate Analysis for the RRSP Model

Table D1: Bivariate Analysis for the RRSP Model

Selected Variables	RRSP Account		The Pearson Chi-Square Test	
	% RRSP = No	% RRSP = Yes	Value	Asymp. Sig. (2-sided)
Income			324.930	.000
<$10,000 per Annum	5.8	4.3		
$10,000 to <$20,000	7.8	9.1		
$20,000 to <$30,000	5.8	11.1		
$30,000 to <$40,000	3.8	13.7		
$40,000 to <$50,000	2.3	7.1		
$50,000 to <$60,000	1.3	6.2		
$60,000 or More	2.5	19.1		
Wealth $_1$			556.263	.000
Has Other Forms of Sav / Inv	5.2	39.2		
Does Not Have Other Sav / Inv	25.8	29.8		
Wealth $_2$			265.006	.000
Has Assets in Home / Business	19.3	59.1		
Does Not Have Such Assets	11.6	10.0		
Wealth $_3$			48.041	.000
Has Assets in Land & Prop	6.1	20.8		
Does Not Have Land & Prop	24.9	48.2		
RPP			39.359	.000
Has Own RPP	3.0	11.9		
Does Not Have Own RPP	28.0	57.1		
Risk Attitude			2.830	.093
Risk-Averse	10.8	22.3		
Risk-Loving	20.0	46.9		
Past Financial Experience			65.009	.000
Had Financial Difficulties	15.1	24.3		
Did Not Have Financial Difficulties	15.9	44.7		
Education			185.215	.000
University	3.8	19.5		
PSE Diploma	9.2	22.4		
Some PSE	3.1	5.2		

Selected Variables	RRSP Account		The Pearson Chi-Square Test	
	% RRSP = No	% RRSP = Yes	Value	Asymp. Sig. (2-sided)
HS Diploma	6.9	12.5		
<HS Diploma	8.1	9.5		
Gender			6.798	.009
Male	20.2	47.8		
Female	10.8	21.3		
Age			51.032	.000
15 to 29	3.4	4.0		
30 to 34	3.8	8.3		
35 to 39	5.2	9.5		
40 to 44	5.0	12.6		
45 to 49	3.9	11.8		
50 to 54	4.0	10.3		
55 to 59	2.9	6.9		
60 +	2.7	5.6		
Children Age			.510	.775
<6	9.8	23.6		
6 — 15	13.7	31.3		
16 — 24	6.2	15.4		
Membership in Associations			98.599	.000
Member	6.1	24.4		
Non-Member	24.9	44.6		
Job-Specific Training			176.649	.000
Formal & Informal	4.5	21.6		
Formal Training Only	.4	.6		
Informal Training Only	16.8	35.8		
No Job-Specific Training	9.3	11.1		
Region			8.553	.073
Ontario	11.2	26.0		
Quebec	7.2	14.9		
Atlantic	2.1	3.5		
Prairies	6.0	14.0		
British Columbia	4.4	10.6		
Class of Self-Employment			251.351	.000
Incorporated with Employees	3.6	21.1		
Incorporated without Employees	3.6	9.8		
Unincorporated with Employees	3.2	9.9		

Selected Variables	RRSP Account		The Pearson Chi-Square Test	
	% RRSP = No	% RRSP = Yes	Value	Asymp. Sig. (2-sided)
Unincorporated without Employees	20.5	28.2		
Number of Jobs Held			4.647	.031
Multiple-Job Holder	1.3	4.1		
Single-Job Holder	29.7	64.9		
Self-Employment Choice			115.945	.000
Involuntary Self-Employed	5.6	6.2		
Discouraged Self-Employed	6.0	12.6		
Adjusted Self-Employed	4.3	5.9		
Voluntary Self-Employed	15.2	44.3		
Industry			59.777	.000
Primary Sector	4.1	6.5		
Construction	4.4	8.4		
Manufacturing, Transport, & Warehousing	3.4	7.0		
Wholesale & Retail Trade	3.8	10.1		
Arts, Ent, Acc, Food, & Culture	6.1	9.6		
Professional, Scientific, & Tech. Services	9.1	27.3		
Occupation			204.535	.000
Processing & Manufacturing	.9	1.5		
Occupations Unique to Primary Industry	4.5	7.0		
Trades, Transport & Equipment	7.3	11.8		
Childcare & Home Support	2.7	2.2		
Sales & Service	4.4	7.8		
Art, Culture, Recreation, & Sports	1.7	3.9		
Social Science & Education	.5	3.2		
Health	.3	3.8		
Natural & Applied Science	1.2	5.2		
Business, Finance, & Administration	2.0	7.8		

Appendix E: Logistic regression for the RRSP Model — Full Report

Table E1: Logistic Regression for the RRSP Model — Full Report

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-2.232***	.107	-2.038***	.130	-3.249***	.039
$10,000 to <$20,000	-1.373***	.253	-1.160**	.314	-2.377**	.093
$20,000 to <$30,000	-.696*	.499	-.653*	.520	-1.674	.188
$30,000 to <$40,000	-.550*	.577	-.349	.706	-1.647	.193
$40,000 to <$50,000	-.393	.675	-.418	.658	.056	1.057
$50,000 to <$60,000	-.189	.827	.039	1.040	-1.374	.253
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	1.524***	4.591	1.514***	4.547	1.760***	5.814
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.939***	2.556	1.247***	3.481	.440	1.552
Does Not Have Such Assets						
Wealth $_3$						
Has Assets in Land & Prop	-.504**	.604	-.609**	.544	-.654	.520
Does Not Have Land & Prop						
RPPs						
Has Own RPPs	.457*	1.580	.344	1.411	.707	2.027
Does Not Have Own RPPs						
Risk Attitude						
Risk-Averse	-.141	.869	-.286	.751	.289	1.335
Risk-Loving						
Past Financial Experiences						
Had Financial Difficulties	-.546***	.579	-.616**	.540	-.604*	.546
Did Not Have Financial Diff.						
Education						
University	-.080	.923	-.515	.598	1.066	2.903
PSE Diploma	.165	1.179	-.134	.875	1.072*	2.920

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Some PSE	-.185	.837	-.181	.834	.552	1.737
HS Diploma	-.091	.913	-.331	.718	.745	2.106
<HS Diploma						
Gender						
Male	-.121	.886				
Female						
Age						
15 to 29	-1.008	.365	-1.207	.299	.421	1.523
30 to 34	-.317	.728	-.241	.786	.653	1.922
35 to 39	-.171	.843	-.248	.780	1.053	2.866
40 to 44	-.097	.908	-.211	.809	1.201	3.325
45 to 49	.046	1.047	-.163	.850	1.550	4.713
50 to 54	.002	1.002	-.369	.691	1.999	7.378
55 to 59	-.359	.699	-.924	.397	4.411	82.380
60 +						
Children Age						
<6	.139	1.149	-.154	.858	.696	2.006
6 — 15	-.257	.773	-.351	.704	-.148	.862
16 — 24						
Membership in Associations						
Member	-.032	.968	-.061	.941	.173	1.189
Non-Member						
Job-Specific Training						
Formal & Informal	1.072***	2.920	1.799***	6.046	-.149	.862
Formal Training Only	2.19*	7.527	2.057	7.825	1.395	4.035
Informal Training Only	.357	1.429	.730**	2.075	-.478	.620
No Job-Specific Training						
Region						
Ontario	-.239	.788	-.340	.712	-.022	.978
Quebec	-.224	.799	-.388	.678	.030	1.031
Atlantic	-.296	.744	-.347	.707	-.627	.534
Prairies	.172	1.188	.159	1.173	.389	1.476
British Columbia						
Class of Self-Employment						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Incorporated Employer	1.099***	3.002	1.260***	3.526	.748	2.112
Incorporated Own-Account	.408	1.503	.354	1.424	.670	1.955
Unincorporated Employer	.435	1.546	.657*	1.930	-.092	.912
Unincorporated Own-Account						
Number of Jobs Held						
Multiple-Job Holder	1.111**	3.039	1.297*	3.659	1.013	2.753
Single-Job Holder						
Self-Employment Choice						
Involuntary Self-Employed	-.194	.824	-.254	.776	-.024	.977
Discouraged Self-Employed	.416*	1.516	.550*	1.733	.393	1.481
Adjusted Self-Employed	-.260	.771	-.331	.718	-.109	.897
Voluntary Self-Employed						
Industry						
Primary Sector	-.469	.626	-.154	.857	-1.477	.228
Construction	.155	1.167	-.028	.972	-.400	.670
Manuf, Transp, & Warehousing	-.190	.827	-.480	.618	.334	1.396
Wholesale & Retail Trade	.034	1.035	-.474	.623	.779	2.178
Arts, Ent, Acc, Food, & Culture	.130	1.139	-.136	.872	.717	2.047
Profess, Sci, & Tech Services						
Occupation						
Processing & Manufacturing	-.030	.971	-.205	.815	.428	1.534
Unique to Primary Industry	.374	1.453	-.311	.733	1.798	6.039
Trades, Transport, & Equipment	.018	1.019	-.010	.990	-.341	.711
Childcare & Home Support	.339	1.404	-22.039	.000	.396	1.485
Sales & Service	.284	1.328	.782	2.186	-.095	.909
Art, Culture, Rec, & Sports	.832	2.299	.804	2.235	.845	2.329
Social Science & Education	.137	1.146	-.135	.874	.579	1.785
Health	2.004	7.420	2.106	8.218	1.959	7.092
Natural & Applied Science	1.452	4.270	1.339*	3.817	19.448	3E+008
Bus, Fin, & Administration	.740	2.096	.597	1.816		2.806
Management						
Constant	.075		.180		-.879	
H-L Goodness-of-Fit Test	.760		.370		.662	

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Cox and Snell's R^2	.298		.315		.345	
Nagelkerke's R^2	.431		.462		.486	
Cases Included in Analysis	N = 1,531		N = 965		N = 566	

*Note: Working weight in effect. Italicized text refers to the reference category. Statistical significance: ***p<.001; **p<.01; *p<.05*

Appendix F: Bivariate Analysis of the Benefits Model

Table F1: Bivariate Analysis of the Benefits Model

Selected Variables	Benefits Coverage		The Pearson Chi-Square Test	
	% No Coverage	% At least One Coverage	Value	Asymp. Sig. (2-sided)
Income			114.838	.000
<$10,000 per Annum	5.3	7.1		
$10,000 to <$20,000	9.3	10.8		
$20,000 to <$30,000	8.2	9.3		
$30,000 to <$40,000	5.6	10.9		
$40,000 to <$50,000	2.6	5.8		
$50,000 to <$60,000	1.9	4.7		
$60,000 or More	4.0	14.4		
Wealth $_1$			145.025	.000
Has Other Forms of Sav / Inv	12.5	30.9		
Does Not Have Other Sav / Inv	26.9	29.6		
Wealth $_2$			148.858	.000
Has Assets in Home / Business	27.9	52.2		
Does Not Have Such Assets	11.6	8.2		
Wealth $_3$			35.210	.000
Has Assets in Land & Prop	10.2	20.9		
Does Not Have Land & Prop	29.4	39.6		
RRSPs			217.358	.000
Has Own RRSPs	21.0	45.8		
Does Not Have Own RRSPs	18.4	14.7		
Spouse Work Status			133.725	.000
Public Sector Employee	3.2	15.2		
Private Sector Employee	13.9	31.5		
Self-Employed	16.7	19.5		
Membership in Associations			93.525	.000
Member	13.3	29.6		
Non-Member	26.3	30.8		
Number of Jobs			4.216	.040
Multiple-Job Holder	2.2	4.3		
Single-Job Holder	37.5	56.1		
Region			3.952	.413

Selected Variables		Benefits Coverage		The Pearson Chi-Square Test	
		% No Coverage	% At least One Coverage	Value	Asymp. Sig. (2-sided)
	Ontario	11.0	18.0		
	Quebec	7.4	10.6		
	Atlantic	6.1	8.7		
	Prairies	10.8	17.1		
	British Columbia	4.3	6.1		
Education				49.202	.000
	University	5.2	12.8		
	PSE Diploma	13.0	18.9		
	Some PSE	3.2	5.0		
	HS Diploma	8.1	11.9		
	<HS Diploma	10.1	11.9		
Gender				8.832	.003
	Male	24.4	40.0		
	Female	15.2	20.4		
Age				17.701	.013
	15 to 29	3.6	3.5		
	30 to 34	4.4	6.6		
	35 to 39	5.9	9.4		
	40 to 44	6.5	10.8		
	45 to 49	6.2	9.4		
	50 to 54	5.7	8.8		
	55 to 59	3.9	6.7		
	60 +	3.5	5.2		
Children Age				.380	.827
	<6	11.5	20.7		
	6 — 15	16.9	28.9		
	16 — 24	7.8	14.3		
Tenure of Current Self-Employment				30.237	.000
	<2 Years	8.4	9.2		
	2 — 4 Years	7.8	11.7		
	5 — 9 Years	7.8	11.8		
	10 — 19 Years	8.4	14.9		
	20 or More Years	7.2	12.9		
Class of Self-Employment				70.089	.000
	Incorporated with Employees	6.3	15.3		

Selected Variables	Benefits Coverage		The Pearson Chi-Square Test	
	% No Coverage	% At least One Coverage	Value	Asymp. Sig. (2-sided)
Incorporated without Employees	3.8	7.1		
Unincorporated with Employees	5.4	8.4		
Unincorporated without Employees	24.1	29.6		
Work Arrangement			5.062	.024
Works from Home	10.0	13.4		
Works outside of Home	29.6	60.4		
Industry			61.854	.000
Primary Sector	7.5	10.6		
Construction	4.5	6.6		
Manuf, Transport & Warehousing	3.3	6.2		
Wholesale & Retail Trade	5.1	8.4		
Arts, Ent, Acc, Food & Culture	8.3	7.6		
Profess, Sci, & Tech Services	10.9	20.9		
Occupation			45.353	.000
Processing & Manufacturing	.9	2.2		
Occupations Unique to Primary Industry	7.6	18.3		
Trades, Transport, & Equipment	7.2	17.4		
Childcare & Home Support	2.6	6.4		
Sales & Service	5.4	12.9		
Art, Culture, Rec, & Sports	1.9	4.2		
Social Science & Education	.8	2.7		
Health	.6	3.7		
Natural & Applied Science	1.5	4.2		
Business, Finance, & Administration	3.1	8.5		
Management	7.9	11.7		

Appendix G: Logistic Regression for the Aggregate Benefits Model — Full Report

Table G1: Logistic Regression for the Aggregate Benefits Model — Full Report

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-.065	.937	-.155	.856	-.448	.639
$10,000 to <$20,000	-.441	.643	-.857*	.424	-.709	.492
$20,000 to <$30,000	-.371	.690	-.134	.874	-1.508*	.221
$30,000 to <$40,000	-.168	.845	-.088	.916	-.823	.439
$40,000 to <$50,000	.412	1.510	.715	2.043	-1.095	.335
$50,000 to <$60,000	-.444	.641	-.158	.853	-2.866**	.057
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	.552***	1.737	.667**	1.948	.434	1.544
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.481*	1.618	.182	1.200	1.317**	3.731
Does Not Have Such Assets						
Wealth $_3$						
Has Assets in Land & Prop	-.130	.878	-.123	.884	.584	1.793
Does Not Have Land & Prop						
RRSPs						
Has Own RRSPs	.327	1.386	.183	1.201	.739*	2.093
Does Not Have Own RRSPs						
Spouse Work Status						
Public Sector Employee	1.828***	6.221	1.596***	4.933	3.168***	23.771
Private Sector Employee	1.275***	3.578	1.118***	3.058	2.081***	8.011
Self-Employed						
Membership in Associations						
Member	.524**	1.689	.697***	2.008	.281	1.325
Non-Member						
Number of Jobs						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Multiple-Job Holder	.296	1.344	.391	1.478	.076	1.079
Single-Job Holder						
Region						
Ontario	.684**	1.983	.651*	1.917	.550	1.733
Quebec	.640*	1.897	.407	1.502	.911	2.486
Atlantic	.418	1.519	.332	1.393	.351	1.421
Prairies	1.047***	2.850	.847*	2.334	1.321*	3.747
British Columbia						
Education						
University	.639*	1.895	.590	1.804	1.660**	5.260
PSE Diploma	.377	1.458	.392	1.480	.843	2.324
Some PSE	.717*	2.048	.308	1.361	1.579*	4.848
HS Diploma	.220	1.246	.198	1.219	.908	2.480
<HS Diploma						
Gender						
Male	.060	1.062				
Female						
Age						
15 to 29	-.546	.579	-1.705	.182	23.757	2E+010
30 to 34	-.307	.736	-1.115	.328	22.856	8E+009
35 to 39	-.687	.503	-1.357	.257	22.779	8E+009
40 to 44	-1.052	.349	-1.953*	.142	22.711	7E+009
45 to 49	-1.044	.352	-1.600	.202	22.232	5E+009
50 to 54	-1.076	.341	-1.553	.212	21.668	4E+009
55 to 59	-1.384	.251	-1.939*	.144	22.195	14.690
60 +						
Children Age						
<6	-.887**	.412	-.826	.438	-1.828**	.161
6 — 15	-.356	.701	-.185	.831	-1.193**	.303
16 — 24						
Tenure of Current SE						
<2 Years	-.216	.806	-.396	.673	1.006	2.735
2 — 4 Years	-.287	.750	-.109	.897	.288	1.333
5 — 9 Years	-.121	.886	-.281	.755	1.058	2.880

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
10 — 19 Years	.175	1.191	.161	1.175	.807	2.242
20 or More Years						
Class of Self-Employment						
Incorporated Employer	-.152	.859	-.006	.994	-.064	.938
Incorporated Own-Account	.509*	1.663	.874**	2.397	-.614	.541
Unincorporated Employer	-.622**	.537	-.754*	.470	.267	1.306
Unincorporated Own-Account						
Work Arrangement						
Works from Home	-.120	.887	-.251	.778	.187	1.205
Works outside of Home						
Industry						
Primary Sector	.613	1.845	1.444*	4.238	-2.453	.086
Construction	-.278	.757	.056	1.058	-2.825*	.059
Manuf, Transp, & Warehousing	.455	1.576	.826	2.283	-.020	.980
Wholesale & Retail Trade	.213	1.237	.264	1.302	.181	1.198
Arts, Ent, Acc, Food & Culture	-.433	.648	-.181	.834	-.675	.509
Profess, Sci, & Tech Services						
Occupation						
Processing & Manufacturing	-.111	.895	.395	1.484	-.661	.516
Unique to Primary Industry	-.761	.467	-1.367*	.255	3.126*	22.773
Trades, Transport & Equipment	.266	1.305	-.048	.954	2.160*	8.667
Childcare & Home Support	.057	1.058	-.304	.738	.013	1.013
Sales & Service	-.129	.879	-.522	.593	.604	1.829
Art, Culture, Rec, & Sports	-.165	.848	.363	1.437	-.752	.472
Social Science & Education	-.809	.445	-.831	.435	-1.277	.279
Health	.643	1.903	1.653	5.223	.064	1.066
Natural & Applied Science	-.518	.596	-.834	.434	21.955	3E+009
Bus, Fin, & Administration	-.176	.839	-.366	.693	1.051	2.860
Management						
Constant	-.462		.561		-25.766	
H-L Goodness-of-Fit Test	.851		.192		.099	
Cox and Snell's R^2	.191		.208		.347	
Nagelkerke's R^2	.267		.296		.472	

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Cases Included in Analysis	N = 1,260		N = 771		N = 489	

*Note: Working weight in effect. Italicized text refers to the reference category. Statistical significance: ***p<.001; **p<.01; *p<.05*

Appendix H: Logistic Regression for Dental Plan Model — Full Report

Table H1: Logistic Regression for the Dental Plan Model — Full Report

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	.120	1.127	.193	1.213	.735	2.085
$10,000 to <$20,000	-.163	.850	-.656	.519	.555	1.741
$20,000 to <$30,000	-.102	.903	-.069	.933	-.054	.948
$30,000 to <$40,000	-.104	.901	-.318	.728	.718	2.050
$40,000 to <$50,000	.053	1.054	-.152	.859	.436	1.547
$50,000 to <$60,000	-.582*	.559	-.560	.571	-1.624	.197
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	.374**	1.453	.397*	1.487	.367	1.443
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.513*	1.670	.223	1.249	1.190**	3.286
Does Not Have Such Assets						
Wealth $_3$						
Has Assets in Land & Prop	.081	1.084	.190	1.209	-.068	.934
Does Not Have Land & Prop						
RRSPs						
Has Own RRSPs	.235	1.265	.073	1.076	.631	1.880
Does Not Have Own RRSPs						
Spouse Work Status						
Public Sector Employee	1.751***	5.758	1.805***	6.082	1.455***	4.285
Private Sector Employee	1.434***	4.196	1.297***	3.658	1.824***	6.197
Self-Employed						
Membership in Associations						
Member	.188	1.207	.441*	1.554	-.212	.809
Non-Member						
Number of Jobs						
Multiple-Job Holder	.633*	1.884	.987*	2.684	-.343	.709
Single-Job Holder						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Region						
Ontario	.082	1.085	-.217	.805	.800	2.226
Quebec	-.973***	.378	-1.128***	.324	-.975*	.377
Atlantic	-.151	.860	-.354	.702	.141	1.151
Prairies	.325	1.384	.064	1.066	.940*	2.560
British Columbia						
Education						
University	.222	1.248	-.035	.965	1.408*	4.087
PSE Diploma	-.020	.980	-.298	.742	.856	2.353
Some PSE	.390	1.476	-.003	.997	1.411*	4.099
HS Diploma	-.038	.963	-.257	.773	.835	2.306
<HS Diploma						
Gender						
Male	-.272	.762				
Female						
Age						
15 to 29	.091	1.095	-.655	.519	19.706	4E+008
30 to 34	-.370	.691	-.641	.527	18.597	1E+008
35 to 39	-.153	.858	-.159	.853	18.720	1E+008
40 to 44	-.212	.809	-.384	.681	18.900	2E+008
45 to 49	.163	1.177	.263	1.301	18.515	1E+008
50 to 54	-.250	.779	-.293	.746	18.274	9E+008
55 to 59	-.021	.979	-.029	.971	19.188	2E+008
60 +						
Children Age						
<6	-.217	.805	-.259	.772	-.675	.509
6 — 15	.002	1.002	.055	1.057	-.551	.576
16 — 24						
Tenure of Current SE						
<2 Years	.051	1.053	-.064	.938	.955	2.598
2 — 4 Years	-.179	.836	-.121	.886	.742	2.101
5 — 9 Years	-.089	.915	-.335	.715	1.345	3.837
10 — 19 Years	.328	1.389	.285	1.330	1.523*	4.584
20 or More Years						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Class of Self-Employment						
Incorporated Employer	.020	1.020	.026	1.027	.201	1.223
Incorporated Own-Account	.018	1.018	-.009	.991	-.188	.829
Unincorporated Employer	-.789**	.454	-.970**	.379	.081	1.084
Unincorporated Own-Account						
Work Arrangement						
Works from Home	-.232	.793	-.251	.778	-.008	.992
Works outside of Home						
Industry						
Primary Sector	.060	1.061	.678	1.969	-1.811	.164
Construction	-.729*	.482	-.270	.764	-4.030*	.018
Manuf, Transp, & Warehousing	-.520	.594	-.348	.706	-.360	.698
Wholesale & Retail Trade	-.250	.779	.049	1.050	-.667	.513
Arts, Ent, Acc, Food, & Culture	-.549*	.578	-.056	.946	-1.099**	.333
Profess, Scie, & Tech Services						
Occupation						
Processing & Manufacturing	-.876	.416	-.742	.476	-.988	.372
Unique to Primary Industry	-1.499**	.223	-2.074**	.126	.923	2.517
Trades, Transport, & Equipment	.226	1.253	-.078	.925	1.269	3.559
Childcare & Home Support	.039	1.040	-19.627	.000	.044	1.045
Sales & Service	-.368	.692	-.502	.605	.209	1.232
Art, Culture, Rec, & Sports	.059	1.061	.622	1.862	-.781	.458
Social Science & Education	-.239	.787	-.013	.987	-1.634	.195
Health	-.835*	.434	-.932	.394	-.378	.685
Natural & Applied Science	-.387	.679	-.317	.728	1.770	5.872
Bus, Fin, & Administration	-.056	.945	.089	1.094	.408	1.503
Management						
Constant	-1.113		-.570		-23.317	
H-L Goodness-of-Fit Test	.108		.628		.558	
Cox and Snell's R^2	.198		.216		.316	
Nagelkerke's R^2	.262		.290		.425	
Cases Included in Analysis	N = 1,260		N = 771		N = 489	

*Note: Working weight in effect. Italicized text refers to the reference category. Statistical significance: ***p<.001; **p<.01; *p<.05*

Appendix I: Logistic Regression for Extended Health Benefits Model — Full Report

Table 11:Logistic Regression for the Extended Health Benefits Model — Full Report

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-.441	.644	-.941*	.390	.117	1.124
$10,000 to <$20,000	-.553*	.575	-1.103**	.332	.153	1.165
$20,000 to <$30,000	-.649**	.522	-.684*	.504	-.678	.508
$30,000 to <$40,000	-.297	.743	-.544*	.580	.421	1.523
$40,000 to <$50,000	-.001	.999	-.189	.828	.645	1.906
$50,000 to <$60,000	-.389	.678	-.491	.612	-.985	.374
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	.286*	1.331	.172	1.188	.740*	2.096
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.255	1.291	-.098	.907	.899*	2.458
Does Not Have Such Assets						
Wealth $_3$						
Has Assets in Land & Prop	.023	1.023	.010	1.010	.571	1.769
Does Not Have Land & Prop						
RRSPs						
Has Own RRSPs	.283	1.327	.076	1.079	.663	1.940
Does Not Have Own RRSPs						
Spouse Work Status						
Public Sector Employee	1.907***	6.736	1.623***	5.069	3.089***	21.945
Private Sector Employee	1.214***	3.368	.904***	2.469	2.158***	8.655
Self-Employed						
Membership in Associations						
Member	.428**	1.534	.673***	1.960	-.037	.964
Non-Member						
Number of Jobs						
Multiple-Job Holder	.110	1.116	.260	1.297	-.190	.827
Single-Job Holder						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Region						
Ontario	.608**	1.838	.397	1.487	1.007*	2.737
Quebec	.167	1.182	-.174	.840	.971*	2.641
Atlantic	.621	1.861	.452	1.572	1.224	3.400
Prairies	.917***	2.503	.544	1.723	1.822***	6.182
British Columbia						
Education						
University	.709*	2.032	.466	1.593	1.651**	5.211
PSE Diploma	.344	1.410	.226	1.254	.768	2.156
Some PSE	.526	1.692	-.042	.959	1.843**	6.314
HS Diploma	.156	1.169	.159	1.173	.635	1.888
<HS Diploma						
Gender						
Male	-.505**	.604				
Female						
Age						
15 to 29	-.408	.665	-1.492	.225	20.972	1E+009
30 to 34	-1.000	.368	-1.683	.186	19.514	3E+008
35 to 39	-.502	.606	-.725	.485	19.653	3E+008
40 to 44	-.717	.488	-1.049	.350	19.738	4E+008
45 to 49	-.645	.525	-.769	.463	19.233	2E+008
50 to 54	-.592	.553	-.682	.506	18.956	2E+008
55 to 59	-.562	.570	-.634	.531	19.811	4E+008
60 +						
Children Age						
<6	-.744**	.475	-.690*	.502	-1.580**	.206
6 — 15	-.369*	.691	-.363	.696	-.888*	.411
16 — 24						
Tenure of Current SE						
<2 Years	-.113	.893	-.579	.560	1.097	2.996
2 — 4 Years	-.204	.815	-.058	.943	.182	1.200
5 — 9 Years	-.156	.856	-.133	.875	.321	1.379
10 — 19 Years	.188	1.207	.164	1.179	.826	2.284
20 or More Years						

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Class of Self-Employment						
Incorporated Employer	-.069	.933	.001	1.001	.244	1.276
Incorporated Own-Account	.173	1.189	.423	1.527	-.489	.613
Unincorporated Employer	-.869***	.419	-.924**	.397	-.500	.607
Unincorporated Own-Account						
Work Arrangement						
Works from Home	-.107	.899	-.209	.811	.161	1.175
Works outside of Home						
Industry						
Primary Sector	-.317	.728	.115	1.121	-2.296	.101
Construction	-.629*	.533	-.498	.608	-3.133*	.044
Manuf, Transp, & Warehousing	-.297	.743	-.317	.728	-.217	.805
Wholesale & Retail Trade	-.613*	.542	-.834*	.434	.015	1.015
Arts, Ent, Acc, Food, & Culture	-.695**	.499	-.565	.569	-.752	.471
Profess, Sci, & Tech Services						
Occupation						
Processing & Manufacturing	.016	1.016	.086	1.090	-.028	.972
Unique to Primary Industry	-1.130*	.323	-1.716*	.180	1.711	5.533
Trades, Transport & Equipment	.190	1.209	-.239	.787	2.421**	11.254
Childcare & Home Support	-.288	.750	-20.524	.000	.171	1.186
Sales & Service	-.497	.608	-.932*	.394	.434	1.543
Art, Culture, Rec, & Sports	-.169	.845	-.008	.992	-.141	.868
Social Science & Education	-1.135**	.322	-1.427**	.240	-.457	.633
Health	-.874*	.417	-1.186*	.305	-.024	.977
Natural & Applied Science	-.984**	.374	-1.333**	.264	1.525	4.595
Bus, Fin, & Administration	-.367	.693	-.708	.493	.712	2.038
Management						
Constant	.093		1.210		-23.998	
H-L Goodness-of-Fit Test	.004		.183		.544	
Cox and Snell's R^2	.204		.217		.345	
Nagelkerke's R^2	.272		.290		.450	
Cases Included in Analysis	N = 1,260		N = 771		N = 489	

*Note: Working weight in effect. Italicized text refers to the reference category. Statistical significance: ***p<.001; **p<.01; *p<.05*

Appendix J: Logistic Regression for the Disability Insurance Model — Full Report

Table J1: Logistic Regression for the Disability Insurance Model — Full Report

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Income						
<$10,000 per Annum	-.705*	.494	-.475	.622	-1.609**	.200
$10,000 to <$20,000	-.786**	.456	-1.178***	.308	-1.023*	.360
$20,000 to <$30,000	-.751***	.472	-.736**	.479	-1.836***	.160
$30,000 to <$40,000	-.391*	.676	-.343	.710	-1.315**	.268
$40,000 to <$50,000	.137	1.147	.146	1.157	-1.000	.368
$50,000 to <$60,000	-.202	.817	-.187	.829	-1.499*	.223
$60,000 or More						
Wealth $_1$						
Has Other Forms of Sav / Inv	.409**	1.506	.680***	1.974	-.261	.771
Does Not Have Other Sav / Inv						
Wealth $_2$						
Has Assets in Home / Business	.500**	1.649	.402	1.495	1.115	3.050
Does Not Have Such Assets						
Wealth $_3$						
Has Assets in Land & Prop	-.043	.958	-.099	.906	.095	1.100
Does Not Have Land & Prop						
RRSPs						
Has Own RRSPs	.394*	1.482	.370*	1.448	.358	1.431
Does Not Have Own RRSPs						
Membership in Associations						
Member	.652***	1.919	.690***	1.994	.553	1.738
Non-Member						
Number of Jobs						
Multiple-Job Holder	.375	1.455	.155	1.168	.551	1.735
Single-Job Holder						
Region						
Ontario	.600**	1.823	.695**	2.004	.235	1.264
Quebec	1.063***	2.895	1.204***	3.332	.636	1.888
Atlantic	.718*	2.049	.909*	2.482	.226	1.254

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Prairies	.752**	2.120	.855**	2.352	.549	1.732
British Columbia						
Education						
University	.212	1.236	.025	1.025	1.335*	3.800
PSE Diploma	.124	1.132	.026	1.026	.805	2.236
Some PSE	.324	1.383	.109	1.115	.909	2.481
HS Diploma	-.295	.744	-.471	.624	.735	2.086
<HS Diploma						
Gender						
Male	.552**	1.736				
Female						
Age						
15 to 29	1.177	3.245	1.365	3.915	-1.308	.270
30 to 34	1.753**	5.771	2.127***	8.389	-.901	.406
35 to 39	1.233*	3.432	1.410*	4.097	-.767	.464
40 to 44	.798	2.220	1.079	2.941	-1.350	.259
45 to 49	.807	2.242	.944	2.569	-1.000	.368
50 to 54	.795	2.215	1.005	2.732	-.960	.383
55 to 59	-.102	.903	.032	1.032	-1.757	.173
60 +						
Children Age						
<6	-.620**	.538	-.810**	.445	-.553	.575
6 — 15	-.200	.818	-.314	.730	-.195	.823
16 — 24						
Tenure of Current SE						
<2 Years	-.154	.857	-.179	.836	.772	2.164
2 — 4 Years	-.192	.826	-.050	.951	.110	1.116
5 — 9 Years	-.493*	.611	-.486	.615	.111	1.117
10 — 19 Years	-.214	.808	-.425	.654	.683	1.980
20 or More Years						
Class of Self-Employment						
Incorporated Employer	.436**	1.546	.580**	1.787	-.092	.912
Incorporated Own-Account	.099	1.104	.187	1.205	-.667	.513
Unincorporated Employer	.360	1.433	.311	1.364	.445	1.560

Variables in Equation	Total Sample		Self-Employed Men		Self-Employed Women	
	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)	Logit Coefficient β	Odds Ratio Exp(β)
Unincorporated Own-Account					.225	1.252
Work Arrangement						
Works from Home	-.119	.888	-.117	.889	.225	1.252
Works outside of Home						
Industry						
Primary Sector	.452	1.572	.852	2.344	-2.055	.128
Construction	.083	1.086	-.113	.894	-1.344	.261
Manuf, Transp, & Warehousing	.533	1.704	.074	1.077	1.732*	5.650
Wholesale & Retail Trade	.066	1.068	-.088	.916	.209	1.233
Arts, Ent, Acc, Food, & Culture	-.459	.632	-.835*	.434	-.155	.857
Profess, Sci, & Tech Services						
Occupation						
Processing & Manufacturing	.464	1.591	.604	1.830	-.138	.871
Unique to Primary Industry	-.249	.780	-.874	.417	2.890	17.994
Trades, Transport & Equipment	.450	1.568	.503	1.653	.240	1.271
Childcare & Home Support	.417	1.517	.269	1.308	.422	1.526
Sales & Service	.283	1.327	.138	1.148	.438	1.550
Art, Culture, Rec, & Sports	-.315	.729	.305	1.357	-1.862*	.155
Social Science & Education	-.739	.477	-1.036*	.355	-.220	.802
Health	1.380**	3.976	1.550*	4.711	1.167	3.211
Natural & Applied Science	.304	1.356	-.173	.841	3.449*	31.478
Bus, Fin, & Administration	-.069	.933	-.557	.573	.579	1.785
Management						
Constant	-3.140		-2.418		-1.960	
H-L Goodness-of-Fit Test	.000		.523		.995	
Cox and Snell's R^2	.220		.223		.266	
Nagelkerke's R^2	.295		.298		.377	
Cases Included in Analysis	N = 1,578		N = 992		N = 586	

*Note: Working weight in effect. Italicized text refers to the reference category. Statistical significance: ***p<.001; **p<.01; *p<.05*

Appendix K: Actors in the Self-Employment Policy Arena

Table K1: Different Actors and Their Interplay in Self-Employment Policy Arena

Actors	Motivations	Values & Beliefs	Resources	Site of Action
Federal Government	Promote self-employment growth	Small and medium sized business are 'economic engines'; employment standards fall under provincial responsibility	Information; legislative power; General Revenues	HRDC; IC; regional departments; Intergovernmental Relations
Provincial Governments	Promote self-employment growth	Small and medium sized business are 'economic engines'; enhancing business climate fuels economic growth	Information; legislative power; provincial funds	Intergovernmental Relations; provincial departments
NGOs	Promote economic self-sufficiency of all poor, unemployed, and underemployed Canadians	Policies based on equality and economic empowerment benefit both individuals and the society at large	Information	Voice opinion through research; public pducation; advocacy
Private Sector	Profit maximization	Self-employment is too small / too risky a market	Information	Market
Professional & Other Associations serving Self-Employed Interests	Facilitate self-education, business development, growth, and sustainability; be a public voice for the self-employed	Entrepreneurs help in creating sustainable economic development in communities across Canada; the best policies promote and protect Canada's free enterprise system	Networks; information	Voice opinion through various media sources; lobbying
Professional Entrepreneurs (likely high-income)	Non-pecuniary benefits of being one's own boss	Government intervention limits the entrepreneurial freedom	Social networks; political will	Voice opinion through association membership; civic participation
Non-Professional Entrepreneurs (likely low-income)	Poverty escape	Government intervention is beneficial	Political will	Voice opinion through civic participation
Paid Workers	Economic self-sufficiency	Canadians must have confidence in the fairness and integrity of labour market policies; unnecessary privileges place a financial burden on the rest of society	Labour standards protection; political will	Voice opinion through civic participation

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