Fostering Adult Education:

A Laboratory Experiment on the Efficient Use of Loans, Grants, and Saving Incentives

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December 2003

SOCIAL RESEARCH AND DEMONSTRATION CORPORATION

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Summary

The laboratory experiment described in this paper was designed to inform several policy concerns expressed by Human Resources Development Canada (HRDC). Each question is considered in turn.

Q.1 **Participation rates**: What would be the likely response (take-up rates) to different levels and types of financial incentives provided by the government to encourage adult learning? How do the response rates differ from one subgroup of the population to another?

As we would expect, both full-time and at least part-time study grants were the preferred means of financing education, with 100 per cent matching grants a close second, and loans a distant third. This is not surprising; in fact, it would be odd to have any other order of preference. Participants are expected to prefer financing that is less costly to them. Participants on the whole were significantly more willing to engage in education when funding for at least part-time study was available. However, even under the most generous conditions ($1,000 grant for at least part-time study versus $50 cash, Decision 90), 41 per cent of all participants chose not to take funding for education. Providing funding for at least part-time study does not significantly change the decisions of very young people, but does encourage more investment on the part of adults over age 25.

Regrettably, the sample used is this study is not representative of the Canadian population; the sample displays a higher level of literate and numerate behaviour than the Canadian average, only draws upon only four Canadian regions, does not represent older Canadians and some disadvantaged groups, and also has a higher proportion of females. However, this does not prevent comparisons among subgroups and the informative conditional analyses presented in Section 5. The information gathered in this study could be used to develop a short, more policy-specific experiment using one decision distributed to a representative sample. This would generate far more reliable point estimates of the policy response.

Q.2 **Potential displacement effects**: Would the availability of grants or saving incentives for part-time studies discourage individuals from pursuing full-time studies?

Adults over 25 years of age are far more likely than their younger counterparts to accept at least part-time funding that is less generous than full-time funding. This does not mean that younger participants were not tempted by at least part-time funding. 20 per cent of high school students were more likely to accept at least part-time funding for study given that they had revealed a preference for full-time funding. It is important to emphasize that a majority of students are less likely to be attracted to part-time studies although the funding may be available.

Q.3 **Potential windfall gains** (individuals who would decide to invest in learning activities without any government assistance): What is the extent of windfall gain that may result under different levels and types of financial incentives?

Using the weights for the Canadian population, the proportion of the Canadian population committed to education, as indicated by acceptance of a $300 grant for full-time studies, is 14.75 per cent. Comparing this with an estimated take-up of 29.19 per cent for a $1,000 grant, increasing the grant in this fashion increases the proportion that would choose it by 97.9 per cent. Ignoring the problems associated with weighting the sample, 14.75 per cent of the out-of-high-school population would enjoy a $700 windfall if grants were increased from $300 to $1,000. In short, offering a grant three times as generous as the original grant doubles the take-up rate of the grant and increases the amount granted by sixfold.

Q.4 Barriers to participation: What are the barriers that prevent adults from investing in formal learning activities and what is their impact on the investment decision? Can financial incentives help overcome barriers such as the following?

- **Lack of time**: To what extent do daily responsibilities, family or work-related, represent a major barrier to education and training? When people claim that "lack of time" prevents them from taking up education are they simply concealing the low value they ascribe to education?

  Those who do not have full-time commitment to work, those who are unemployed or part-time employed, have a higher probability of accepting grants for education than those who do not work (neither in the labour market (LM) nor a post-secondary education (PSE) student). The preferences of those who are employed full-time are indistinguishable from those who do not work.

- **Loan aversion**: Does loan aversion exist? How does it influence the investment decision? Who is particularly affected? Can certain types of financial incentives help more than others?

  Overall, there is some evidence present for loan aversion, loss aversion, debt aversion, and debt-seeking behaviour. For low levels of loans, any loss aversion related to taking a loan is negligible or that the loss aversion is not distinguishable from any debt aversion that may or may not exist.

  There is no evidence that entire subgroups are debt-averse. However, both the high school and PSE groups had sizeable probabilities of debt avoidance behaviour. There is evidence that certain subgroups are not debt averse, for instance, those with labour market attachment. In addition, there are some subgroups who could be classified as debt seeking. These are groups who are traditionally thought of as cash constrained: immigrants and those who are already burdened by debt.

  The analysis was able to indicate only one subgroup, those with the highest math skills, who were loss-averse but not debt-averse. They had a higher probability of taking an income-sensitive repayment (ISR) loan while refusing a regular loan than those with lower math skills.

- **Fear of failure**: Does lack of self-confidence or fear of failure play any role in the decision to participate in education or training? Who is particularly affected? Can certain types of financial incentives mitigate this factor?

There is no evidence to support the belief that low self-efficacy (Locus of control) or avoiding risky monetary situations (Risky decisions) plays a role in the decision to participate in education or training.

- **Time preference**: To what extent does preference for the present affect investment decisions? Which groups are more affected? Are certain types of financial incentives more appropriate for individuals who are more impatient?

  An individual's willingness to forego current consumption for future gain (Willingness to save) is a significant factor for high school students as well as for adults in the determination of the probability of investing in education and training.

  Also, to a lesser extent for adults, their attitude about planning, appointments, and commitments (planning ability) also played a significant part in the decision.

  Those participants who reported that they felt burdened by debt were less patient for monetary payoffs. Those with the lowest math competency scores were less patient, on average choosing to accept the earlier cash alternative in four more decisions when compared with those with a math competency score within one standard deviation of the median. All other factors, such as sex, age, family status, and labour market attachment, did not appear to affect patience.

  This experiment did not reveal a specific type of financing that is more attractive to those with preference for the present.

- **Readiness to learn**: Do individuals choosing to invest in education or training have the ability or sufficient qualifications to benefit from adult education?

  Table 13 shows that mathematical competency for high school students is a significant factor in the decision to invest in education. When willingness to save is incorporated into the model of investment for high school students and adults, the impact of this factor changes. In the high school model, numeracy no longer plays a role once willingness to save is introduced, and in the adult model, the impact is actually negative. More work is warranted to understand better the relationships between mathematical competency willingness to save.

- **Lack of information**: How do perceived rates of return on education (the expected increase in life-time earnings resulting from the investment) compare with actual rates of return? Does the availability of labour market information modify behaviour?

  Participants, adults and high school students, who perceive a positive rate of return to education, are significantly more likely to invest in education than those who do not.

  Older participants are more likely to have a more positive attitude toward education, although we know that they are also less likely to invest in education. Men and those with medium- or higher-level math skills are likely to have a more positive attitude. Dispositional characteristics that increase the probability of a positive attitude are having a history of saving in the family for post-secondary education, good planning ability, and feelings of self-efficacy. In addition, those who have a

good understanding of the labour market were more likely to have a positive attitude.

High school students with good math competency scores and high school boys were more likely to have a positive attitude about education. Those who are performing well in school, feelings of high self-efficacy, and have some history of saving in the family for post-secondary education have an increased probability of having a good attitude about the returns to education.

Overall, young persons, those under 25 years of age, who participated in the labour market information (LMI) treatment had a higher, significant probability of taking more education. Those under 25 who did not participate in the information session had a probability of 42.9 per cent of taking more education; those who did participate had a probability of 57.1 per cent. In short, this 14.2 percentage point increase supports the position that labour market information can make a difference in influencing education decision making, at least for young people.

Why were the younger participants in the subsample more willing to increase educational activity after being exposed to the labour market information session than their older counterparts? This question cannot be answered from this single-treatment study. There are a number of possible explanations. Two immediate explanations are the context of the educational choices and the time period of adjustment.

Further research is needed to understand the process by which adults absorb relevant information. Vital in the design of any future studies are attention to the environments and materials that help adults to absorb information as well as the types of information that are more readily received. This study provided one type of information transmittal, one time period of adjustment, and one indicator of preference for training and education. With these restrictions, we find that younger adults can be influenced with labour market information to have a higher probability of participation in education and training.

1. Introduction

BACKGROUND

In the January 2001 Speech from the Throne, the federal government committed to work with provinces and territories and with non-government organizations to ensure that all Canadians can achieve their learning goals. The government wished to see more adults pursuing learning opportunities in the coming years. Human Resources Development Canada (HRDC) is currently considering various policy options to meet this objective. The department is interested in finding effective means to increase human capital investment activities among adults from different socio-economic backgrounds. How can policy tools such as loans, grants, and saving incentives be most effectively utilized to foster participation in formal education and training activities among adults?

In order to respond to this question, government officials need to be able to predict with a certain degree of accuracy how various types of government assistance programs or financial incentives will affect the behaviour of the adult population. In the first instance, the effectiveness of a specific policy will depend very much on whether or not it meets the preferences of the target population. If the incentives are not generous enough, people will not change their behaviour and the impact of the policy will be negligible. On the other hand, if the incentives are too generous or if the assistance is not targeted well enough, the policy or program may end up costing much more than it should.

The type of financial assistance may also matter. Some individuals may respond favourably to incentives that would support them in the process of accumulating the savings necessary to take on further education. Others may react more favourably to encouragement like loans or grants that will enable them to immediately enrol in learning activities.

Another aspect that needs analysis in order to predict behaviour and design appropriate policies is the nature and role of factors that can act as barriers to participation in learning activities. For instance, is it true that some individuals, in particular low-income individuals, suffer from loan aversion as some economists have inferred (Andrews, 1999)? If so, this would greatly limit the efficacy of loans in encouraging additional education among population groups who demonstrate such aversion. Or is a lack of information on the benefits of education influencing the decision to participate?

USING EXPERIMENTATION TO INFORM POLICY

Experimental research provides a potentially fruitful approach to collecting information in order to fine tune policy design.[1] The Social Research and Demonstration Corporation (SRDC), in collaboration with the Center for Interuniversity Research and Analysis on Organizations (CIRANO), has designed a laboratory experiment that contributes to informing policy choices concerning the combination of loans, grants, and saving incentives

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[1]Roth (2002) makes the case for the use of experimental research in the design of market and non-market institutions. His discussion focuses on the use of experiments to estimate the response of markets and other institutions to changes in structure and parameters. Our approach focuses on the direct measurement of preferences.

that would best achieve the government's objective of increasing participation in adult education. Laboratory experiments use controlled settings and financial incentives to generate behavioural outcomes that closely approximate decisions in real life. In these experiments, participants are placed in identical settings and they typically make decisions involving real money. The experimental approach can be used to infer preferences or behavioural propensities.

Surveys and focus groups constitute other valuable means of collecting information on people's preferences and expected responses to policy initiatives. However, they suffer important caveats. Sceptical social scientists resist taking respondents' self-reported statements on attitudes and behaviour at face value, whether they are about patience or other attitudes and behaviour. Responses to survey questions may misrepresent the truth for several reasons. Respondents may misrepresent their attitudes or preferences because inaccurate attitudes may flatter their own self-image.[2] Respondents may also misrepresent their own characteristics because they may interpret the question in their own way, which may differ from the interpretation of the researchers or of other participants. In addition, respondents may bias their answers for "presentational" reasons, which is to look good in the eyes of the survey administrator or other people in the case of participation in a focus group.

In laboratory experiments, participants make decisions that reveal preferences that are of interest to researchers. For example, instead of asking an individual whether he or she is willing to save, an experimentalist will give participants $10 and the opportunity to save that money with a certain return. The participants' willingness to give up this income to realize higher gains in the future is one possible measure of willingness to save. This approach has several advantages over the traditional empirical tools. First, laboratory experiments control for situational variation by placing participants in identical settings. This eliminates much of the uncontrolled variation that plagues outcome-based behavioural measures of preferences. Second, because participants typically make decisions involving real money, it is costly to the participant to misrepresent true preferences. Ensuring anonymity can further minimize misrepresentation effects: if the experimenter is not able to link actions to particular individuals, then the participant has no incentive to misrepresent himself. Finally, the decisions made by participants are real, not hypothetical. A participant makes an actual choice among alternatives, and that choice can be used to infer preferences.[3]

Experimental economics provides an inexpensive method of enriching the design of new government policy and programs. For instance, in December 2000, SRDC and CIRANO conducted a laboratory experiment with 256 participants to shed light on the behaviour and preferences of the working poor with respect to saving for learning activities. Analysis of the experimental results showed that the relative generosity of grants, and individual characteristics such as time preferences and attitude towards risk play a significant role in the decision to invest in one's own education. In addition, the laboratory experiment was used to

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[2]This problem occurs with "hard" data as well — self-reported income is notoriously inaccurate, and self-reported housing values regularly overstate true resale prices. See Goodman and Ittner (1992).

[3]Many of the original economic experiments tried to measure the overall or average behavioural propensities of entire populations of subjects. Experimentalists compared these propensities with the predictions of economic theory. Economists are just beginning a second wave of experimental research, in which experiments are used increasingly to document behavioural differences across individuals and to identify the correlates of those differences: for sex differences, see Eckel and Grossman (1998, 2001, in press), Ansic and Powell (1997), and Schubert, Brown, Gysler, and Brachinger (1999); for children, see Harbaugh and Krause (2000); for drug users, see Blondel, Lohéac, and Rinaudo (2000).

determine point estimates of take-up rates for different levels of matching funds offered to potential savers (Eckel, Johnson, & Montmarquette, 2002).

The objective of this paper is to present preliminary results from a laboratory experiment on the incentives and barriers to participation in adult education. Section 2 outlines the research design. It provides a detailed description of the objectives of the experiment and the possible uses of the results to address relevant policy issues. It presents a model that looks at the determinants of individual learning decisions and discusses how the availability of grants, loans, and saving incentives may affect this individual decision. The section concludes with the experimental design and a brief description of the instruments used. Two of the three instruments used may be found in the Appendix. Section 3 describes the selection and recruitment of participants as well as the protocol of the experiment. Sections 4 and 5 report the analysis of the experiment organized according to its objectives. Section 4 summarizes the education preferences revealed by the participants and Section 5 uses the experimental data in a more in-depth analysis examining the barriers to education.

2. Research Design

OBJECTIVES

The primary objective of the experiment is to investigate what types of government assistance best serve the policy objective of increasing human capital investment among adults from different socio-economic backgrounds. The experiment also generates information on the barriers that may prevent adults from engaging in learning activities — such as access to credit, opportunity costs, time constraints, lack of information, fear of failure, loan aversion — and documents how these barriers combine with individual characteristics, attitudes, and preferences in determining one's decision to engage in further learning and education.

More specifically, the laboratory experiment is designed to inform several policy concerns expressed by Human Resources Development Canada (HRDC). These concerns can be translated into the following research questions:

Q.1   **Participation rates**: What would be the likely response (take-up rates) to different levels and types of financial incentives provided by the government to encourage adult learning? How do the response rates differ from one subgroup of the population to another?

Q.2   **Potential displacement effects**: Would the availability of grants or saving incentives for part-time studies discourage individuals from pursuing full-time studies?

Q.3   **Potential windfall gains** (individuals who would decide to invest in learning activities without any government assistance): What is the extent of windfall gain that may result under different levels and types of financial incentives?

Q.4   **Barriers to participation**: What are the barriers that prevent adults from investing in formal learning activities and what is their impact on the investment decision? Can financial incentives help overcome barriers such as the following?

- **Lack of time**: To what extent do daily responsibilities, family or work-related, represent a major barrier to education and training? When people claim that "lack of time" prevents them from taking up education are they simply concealing the low value they ascribe to education?

- **Loan aversion**: Does loan aversion exist? How does it influence the investment decision? Who is particularly affected? Can certain types of financial incentives help more than others?

- **Fear of failure**: Does lack of self-confidence or fear of failure play any role in the decision to participate in education or training? Who is particularly affected? Can certain types of financial incentives mitigate this factor?

- **Time preference**: To what extent does preference for the present affect investment decisions? Which groups are more affected? Are certain types of financial incentives more appropriate for individuals who are more impatient?

- **Readiness to learn**: Do individuals choosing to invest in education or training have the ability or sufficient qualifications to benefit from adult education?

- **Lack of information**: How do perceived rates of return on education (the expected increase in life-time earnings resulting from the investment) compare with actual rates of return? Does the availability of labour market information modify behaviour?

In order to address these research questions, a review was conducted of the elements that could influence an individual's decision to invest in education, and this knowledge was used to inform the design of the experiment.

UNDERSTANDING THE DECISION TO INVEST

Adults will engage in educational activities for job-related or career-related reasons if the perceived benefits of doing so exceed the perceived costs. Many factors will affect their decision to invest in learning activities. Factors that could impact on the decision of an adult to enrol in an education or training course are summarized on the following page. The various elements entering the decision process have been grouped under the headings "Costs" or "Benefits." Note that throughout this paper, education is treated as an investment decision motivated by the desire to increase one's living standard. Individuals are considered to be motivated primarily by the prospects of better employment opportunities or increased labour market earnings. We are not considering situations where individuals treat education as a consumption good, that is, situations where education is seen strictly as a source of intellectual enrichment or a form of leisure.

Costs of Educational Investment

In considering the *costs* of education, one has to factor in the direct costs (tuition fees and related expenses, like the purchase of books) and the indirect costs (any additional pocket expenses required to attend the courses, like transportation costs or expenses related to the acquisition of information to help select a field of study or to choose the appropriate education provider). If an individual needs to borrow funds to attend school, then interest charges on those loans must also be included in the overall cost.

More important, perhaps, are the opportunity costs of education or training — that is, the value of other alternatives or other opportunities that have to be foregone in order to engage in education and training activities. When training is provided during working time in connection with employment, the opportunity cost may be nonexistent. If someone enrols in a night course while working at a full-time day job, the opportunity cost may be relatively low and it will depend on the value ascribed by the individual to alternative activities. However, in situations where individuals have to take leave from their regular jobs to take training, the opportunity cost can be by far the most important factor in the decision to invest in education or training.

The Decision to Invest in Education

The **Costs** of additional educational investment (i.e. post-secondary) for an individual are a function of the following:

- The direct and indirect costs of education
  - Tuition fees
  - Supplies
  - Information costs (related to choosing field of education and finding provider)
  - Indirect costs related to access (transportation costs, child-care costs, etc.)
  - Interest paid on loan (if applicable)
- The opportunity costs of education and training
  - Loss in pay due to time away from paid employment
  - Forgone lifetime earnings (linked to promotions or on-the-job training) due to time spent in training
  - Missed leisure activities
  - Forgone interest on savings (if own savings are used to finance education)
- Intangibles
  - Loan or debt aversion (if student needs financial assistance)
  - Dispositional or psychological barriers

The **Benefits** of additional educational investment for an individual are mainly a function of the expected future payoffs of education. Specifically, the overall benefits are a function of the following:

- The estimated additional lifetime earnings resulting from the educational investment, which in turn will vary according to:
  - Perceived wages and benefits prevailing in the labour market by fields of study and occupations (perceptions shaped according to labour information available to the individual)
  - Assessment of an individual's own situation and potential relative to average labour market outcomes (work experience, ability, and other individual characteristics)
  - Uncertainties surrounding the education decision
    - Non-completion of educational goals
    - Success on the job market (probability of finding a job)
    - Quality of the education or training course
- Intangibles
  - Greater self-esteem
  - Time spent in school

The decision to invest will be based on the present value of the **net benefits**. The present value is largely determined by the discount rate of the individual.

Individual decisions will also be affected by intangible costs, such as the perception of others or past experience with school. A series of dispositional and psychological barriers come into play in the decision to enrol, and these add to the overall cost even tough it may be difficult to assign them a monetary value. For example, some individuals experienced humiliation or frustration during primary or high school years, and the thought of going back to a classroom adds an important psychological cost. If an individual needs to borrow to take a course, the cost may not be limited to interest charged on the loan. For some the thought of owing money or carrying a debt is simply not an option.

Benefits of Educational Investment

On the *benefits* side, the decision to invest is primarily influenced by an individual's perception of the future payoffs of education. The expected payoff can be split in several components. First, the individual will have a notion of the additional income that could result from the acquisition of the new knowledge, qualifications, or degree acquired through the chosen learning activity. The additional education may give access to new positions at the place of employment or could lead to better job opportunities with other employers. The payoff can be immediate or take a few years to materialize. It could impact future earnings for an individual's entire working life or make a difference in wages and employment opportunities only for a few years. Ultimately the decision to invest in education will be based on the perceived additional earnings that the investment will produce.

The prospects of additional lifetime earnings will vary according to an individual's perceptions of the labour outcomes generally associated with certain courses, fields of study or occupations, and the individual's assessment of his or her own potential and likely outcomes relative to average outcomes. An individual's perceptions of average outcomes will be shaped by anecdotal information as well as by more systematic sources of career and labour market information provided by educational institutions, non-governmental organizations, and government agencies. The individual's assessment of his or her own potential relative to the average outcomes will depend mostly on personal characteristics, such as age, gender, perceived ability to learn, work experience, social capital, and so on.

The decision to invest in education will also be influenced by some intangible benefits, such as increased self-esteem or simply the fact that sitting in a classroom may represent for some a more enjoyable activity than spending time at work.

Attitudes Towards Risk and Consumption

An individual's perception of the costs and benefits of an educational investment will also be affected by personal attitudes towards risk and consumption over time. Consideration of the role of these individual attitudes is not new in the human capital literature. Levhari and Weiss (1974) produced an early study on the role of risk and uncertainty in decisions to invest in human capital using a Fisherian two-period model. They showed that uncertainty is an important factor, but that the effect of increased risk is ambiguous and is both content and context dependent. For Chen (2002), reluctance of some young people to attend college is explained by the risks of college attendance that result from incomplete information about individual ability, the quality of education, and unanticipated changes in labour market conditions.

Chen suggests that when discussing investment in human capital, it is important to distinguish attitudes toward risk from the sources of risk. A risk-averse high school student might prefer taking more education to participating in the labour market if the student perceives the risk in the labour market to be greater than the risk of continuing with schooling. For such a person, the labour market is not only risky but also uncertain because of his or her lack of experience in that sector of activity. For a labour market participant, however, the situation is essentially reversed: an investment in human capital appears more risky or uncertain than what the individual might have experienced in the labour market. Therefore, with the same risk-averse attitude, a person of school age is more likely to continue with the investment in education, while an adult will prefer to remain in the labour market. Perception of lifetime earning benefits will also be influenced by the degree of risk and uncertainly surrounding the learning activity. There is no guarantee that the course will be successfully completed or that it will lead to a new or improved job.

Time preference is also a key factor in the decision to invest in human capital and in the assessment of the benefits of education investment. The decision to forego current for future consumption is fundamental in human capital theory, which relies heavily on the discounted utility model first proposed by Samuelson (1937). This model assumes that a person's preferences are time-consistent: that an individual will make the same choice no matter when he or she is asked. However, in a review of empirical and experimental studies of discount rates, Frederick, Loewenstein, and O'Donoghue (2002) noted evidence that suggests discount rates are not constant. They conclude that discount rates may decline over time, that gains are discounted more than losses, and that small amounts are discounted more than large amounts. Furthermore, explicit sequences of multiple outcomes are discounted differently than the same outcomes considered singly. This is known as subadditive time discounting: see Read (2001).

When an individual has formulated a personal estimate of the net benefits of investing in education, he or she will assign a present value to these future benefits. Individuals who strongly prefer present consumption to future consumption will tend to greatly discount any expected future benefits from education relative to upfront expenses for education. People with high discount rates tend to put less value on education because the promise of more substantial future gains in exchange of lower income today does not satisfy their strong taste for current consumption. If the present value of net benefits (benefits minus costs) is positive, the rational individual should invest in education when presented with the opportunity.

The Role of Financial Incentives

Investments in human capital differ from investments in other assets in two fundamental ways. Unlike investments in machines or real estate, it is not always possible for investors to borrow to acquire the asset. From the perspective of the lending institution, the non-appropriability of a human capital asset means there is no source of security against failure to repay a loan. Individuals who cannot offer other assets as material collateral will be unable to obtain private financing for the creation of human capital. This imperfection of capital markets has led governments to intervene and to offer financial assistance, such as student loans, to individuals who wish to enrol in education but do not have the financial means to do so.

Furthermore, investments in human capital differ from other types of investment in that they generate social benefits that exceed the private returns. This provides an additional rationale for government intervention. It becomes socially optimal for government to subsidize education, and one way this is done is through the provision of direct subsidies to individuals.

The availability of government assistance has been demonstrated to have an effect on the decision to invest. In a study of the Pell Grant education-funding program, Stefor and Turner (2002) show that changes in the availability of US federal aid have a significant effect on the schooling enrolment of adults. Bound and Turner (2002) find that the net effects of funding through the *GI Bill* led to substantial gains in the post-secondary educational attainment of Word War II veterans, comparable to recent estimates of enrolment responses to changes in tuition rates.

Different types of government financial assistance will affect the decision to invest in different ways. The current experiment considers four broad categories of financial assistance:

- Grants
- Loans
- Income-Sensitive Repayment Loans
- Saving Incentives

Each one of those financial assistance schemes can help those who want to invest in human capital but do not have access to the necessary funding to do so. But, in addition, certain forms of financial assistance reduce the cost of education and may therefore influence the decision to invest.

Some individuals will react differently to different types of financial assistance. For instance, it has been hypothesized that the working poor are loan averse. If this is the case, then the provision of educational loans may not sway the working poor towards educational investment as well as some other forms of support might do.

Grants

Grants are subsidies that act mainly to reduce the cost of education. (An exception is student financial assistance schemes that require the repayment of a grant if studies are not successfully completed.) Grants can act as an incentive to those who would not engage in learning activities otherwise. Grants may also provide the financial means to enrol for those who wanted to do so but did not have sufficient funds. In summary, grants perform two functions: they make access to education possible for some people who do not have the financial means and they reduce the costs of education, which may induce more people to enrol in education.

Loans

Loans are mainly meant to provide access to education to those who need financial assistance. For individuals who exhibit loan aversion, loans for education are a less-than-ideal form of financing. Loan aversion can be thought of as a combination of two aversions: loss aversion and debt aversion. Loss aversion occurs when individuals assign more

importance to losses than they assign to gains in decision-making. Debt aversion merely means that an individual prefers to avoid debt. Individuals who are loss-averse may not be prepared to accept a loan if they perceive a potential loss from their decision to invest in education. The perceived potential loss would come from the uncertainty associated with the human capital investment decision. If the average expected payoff from the additional education is modest and the variance of potential outcomes is large, loss-averse individuals may not be willing to incur the risk of potentially having to pay a loan off with a low salary. Another source of uncertainty is the risk associated with not finding employment in the desired field once the training or education is completed.

On the other hand, loans are attractive to individuals who have high discount rates. If an individual is willing to invest in education, that is, if the rate of return to schooling is high enough, and if that individual's discount rate is greater than the real interest rate on the loan, then that individual would much rather pay for schooling with borrowed funds. The loss of future earnings that would be devoted to loan repayment will be discounted by the individual at a high rate, making the loan a low-cost option for financing education. In extreme cases, for individuals with extremely high discount rates and low incomes, education may become a consumption good if the loan is generous enough. They may live better off loans than from their current jobs. However, there is a counterweight to the influence of high discount rate: those who discount the future heavily are also less likely to invest in anything, including education (Eckel et al., 2002).

Income-Sensitive Repayment Loans

Income-sensitive repayment (ISR) loans offer the same accessibility as loans. However, ISR loans reduce some of the risk associated with the uncertainty of human capital investment. Under an ISR loan scheme, borrowers are not required to make payments on the loan when their incomes fall below a certain threshold. This does not mean that the loan is forgiven. The payments are simply suspended until the financial situation of the individual improves. With an ISR loan, the risk of not finding a job or of finding one that yields low returns to education is not less likely, but it is less costly. The ISR option reduces the potential for absolute losses. From this discussion, we can see how loss aversion may be alleviated by the implementation of ISR loans. However, for those individuals who are truly debt averse, neither a regular nor an ISR loan would constitute an optimal form of financing.

Saving Incentives

Saving incentives generally consist of a matching grant applicable to personal savings. Each dollar that an individual saves is matched by a subsidy. The subsidy is available only if the total savings are used for educational purposes. Saving incentive programs include both features of government assistance programs: they provide a way to finance education and they act as an incentive to participate in learning by lowering the cost of education.

Saving incentives constitute an attractive form of financial assistance for individuals with low discount rates who are more likely to forego current consumption to save for education (Eckel et al., 2002). Individuals who have the capacity and willingness to save and who have a low internal discount rate are likely to respond well to this form of financial assistance. However, for someone who is loss-averse, this type of financial assistance will be less effective than grants in encouraging investments in education. Because individuals must

stake their own assets for human capital accumulation, loss aversion will limit an individual's willingness to risk one type of asset to gain another with a more uncertain return.

EXPERIMENTAL DESIGN

This experiment uses three core instruments to collect information from participants: (1) a series of individual decision questions that involve monetary compensation to experimentally capture true preferences; (2) a survey to collect data on relevant demographic and socio-economic characteristics, as well as behavioural and attitudinal measures; and (3) a numeracy assessment to measure the ability of each participant. In Section 4, the analysis uses the data from the compensated decision questions and demographic data to answer the first three research questions concerning participation rates, displacement effects, and windfall gains. The analysis presented in Section 5 combines data from all three instruments to address the policy questions about barriers to adult education.

Education Preferences

In order to estimate the response rate of a target population, displacement effects, and windfall gains, participants are invited to respond to a series of decision questions. Each involves making a decision of whether to enrol in an education or training course with the support of various levels and types of financial assistance. Each participant is compensated according to how he or she responded to *one* of the decision questions. Through their choices, subjects reveal their

- preference for education when financed by grants;

- preference for education when financed by loans;

- preference for education when financed by ISR loans; and

- preference for education when financed by subsidized savings.

Figure 1 provides an example of three of the compensated decision questions used in the experiment. Table 1 summarizes the educational investment choices that each participant faced during the experiment. Subjects simply mark Choice A or Choice B for each proposed decision. These decisions tell us how generous a financial assistance instrument would need to be in order to induce the participant to engage in learning activities. In each case, the participant must trade off cash against enrolling in education (specified as either full-time or at least part-time enrolment) with various levels of financial assistance. The cash alternative ensures that the choice has a cost to the respondent. According to the model of investment discussed above, individuals will choose to invest in education or training if they estimate the present value of the net benefit of the learning activity to be positive. For those who already perceive a positive net benefit, the financial assistance may make education more accessible. The answers to the choice questions also reveal the amount of financial support necessary to allow these individuals to proceed with their plans.

The initial experimental design included maximum loan and ISR loan amounts of $2,000. In general, there was no significant difference between the take-up of loans and ISR loans. In retrospect, a simple explanation could be offered. It could be that most participants in the study did not think it would be difficult to repay a $2,000 educational loan and, therefore, an

ISR loan seemed identical in risk to a regular loan. In an attempt to correct for this lack of perceived difference between the choices, two additional choices with $5,000 stakes were added to the experiment. These choices are summarized as decisions 101 and 102 in Table 1. Take-up of the $5,000 loans was found to be higher; the difference between the regular loan and ISR loan take-up is explored in Section 5.

Figure 1: Example of Compensated Decision Questions

You must choose A or B:
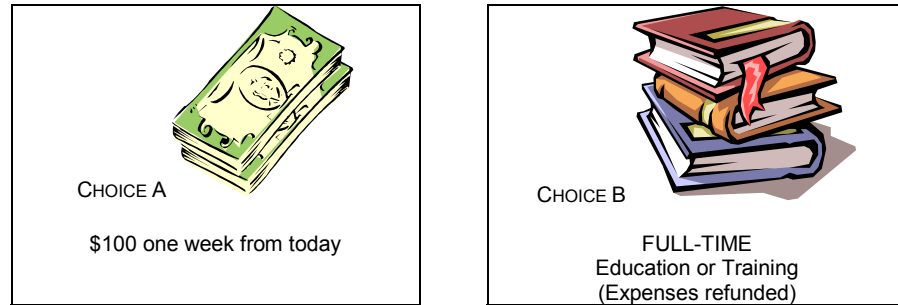
	CHOICE A	CHOICE B
	$100 one week from today	FULL-TIME Education or Training (Expenses refunded)
Decision 73	❏ $100	❏ $300 GRANT
Decision 74	❏ $100	❏ $600 GRANT
Decision 75	❏ $100	❏ $1,000 GRANT

During the experiment, participants chose between two alternatives for each decision. After all decisions were made, one decision was selected at random for each respondent and each respondent received the payoff that corresponded to the choice made for his or her selected decision. For instance, if a participant selected Choice B under Decision 75 in Figure 1, and Decision 75 was selected at random, he or she was entitled to receive a $1,000 grant for full-time education or training. Each choice question had an equal probability of being selected, making the choices independent of each other.

Using the data from these compensated decision questions in combination with socio-economic data collected in the survey, comparisons can be made among take-up rates across subgroups. Analyzing the elasticity of demand for education derived from the compensated decisions in the experiment provides a measurement of the potential windfall gains that could occur under different levels and types of assistance.

Table 1: Preference for Education

	Choice A: Cash Alternative	Choice B: Grants	Choice B: Loans	Choice B: ISR Loans	Choice B: Matching Grants
Decision 73	$100	$300			
Decision 74	$100	$600			
Decision 75	$100	$1,000			
Decision 76	$50	$1,000			
Decision 77	$200	$1,000			
Decision 78	$475	$1,000			
Decision 79	$100		$1,000		
Decision 80	$100		$2,000		
Decision 81	$100			$1,000	
Decision 82	$100			$2,000	
Decision 83	$100				20% matching grant[a]
Decision 84	$100				50% matching grant
Decision 85	$100				100% matching grant
Decision 86	$100				200% matching grant
Decision 101	$100		$5,000[b]		
Decision 102	$100			$5,000[b]	

Notes: [a]Exact wording for the matching grant: "For every $1 you save towards education, you will be granted an additional $0.20 towards educational expenses. You could receive up to $333 in MATCHING GRANTS when you save up $1,667 for a total of $2,000 in educational expenses."

[b]$5,000 student loans and ISR student loans were offered for at least part-time study and only for the final 220 participants in the initial experiment and all of the participants who took part in the Labour Market Information part of the experiment.

In order to determine the potential displacement effects that the availability of part-time grants or saving incentives may have for students who would otherwise pursue full-time studies, it is necessary to measure the variation in preferences for education financing when it is linked to either full-time or part-time education. To capture this variation, two sets of compensated decisions for education financing were presented to participants. The sets are identical and contain all of the choices summarized in Table 1, decisions 73–86. In the first set, the participants can obtain the grants, loans, or matching grants only if they engage in full-time education. In the second set, there is no restriction — the grants, loans, and matching grants may be used for both full-time and part-time studies.

Barriers to Education

While the choices between cash or financing for education are designed to reveal individuals' preferences for investment in education, additional information is required to uncover those factors that may inhibit an individual from pursuing an educational investment.

Separate from the choices between cash and educational financing, participants in the experiment completed two additional sets of compensated decisions: (1) decisions between cash to be received on a particular date and cash to be received at a later date, and (2) decisions between cash choices that have different levels of risk. As discussed earlier, individuals' discount rates and perceptions of risk may influence their decisions to invest. By indicating their preferences for cash today relative to receiving cash in the future with

different rates of investment return, individuals revealed their discount rates or time preferences. The choices that participants in the experiment had to make are summarized in Table 1.1. By choosing between different amounts of money with different levels of risk, participants also revealed their attitudes towards risk for monetary rewards. One risk instrument used extensively in the analysis was that of Holt and Laury (2002). Table 1.2 summarizes the 10 pairs of lottery choices offered to participants in the experiment.

The survey portion of the experiment consisted of 83 questions covering the socio-economic characteristics of the participants. The survey also collected information on the attitudes, behaviours, and experiences of participants that may be relevant to their decisions to invest in education — such factors as past experiences with education, knowledge of the labour market, attitudes towards educational investment, information on time-use, self-assessment of skills, and attitudinal scales for locus of control and orientation towards future planning. In combination with the revealed preferences for education provided by the compensated decision questions, these data are used to uncover other dispositional or situational factors, such as fear of failure or lack of time, which may inhibit an individual from investing in education.

Since loan aversion may be a possible barrier to the take-up of education, the instruments address the research questions of whether loan aversion exists and what affect it could have on take-up rates under different financial incentive programs. First, the compensated decisions and socio-economic data provided by the survey when used together allowed for a comparison of take-up rates for loans relative to other financial incentives across subgroups. Second, comparisons could also be made between the take-up of loans and the take-up of other different, but equally costly, financial incentives (e.g. a 20 per cent matching grant).

For many, the lack of basic literacy skills represents the most severe barrier to participation in education. It is important to know whether those who possess basic literacy capabilities are attracted by generous financial incentives to learn. However, it is equally important to know whether those attracted by financial incentives have the ability to engage successfully in education. Numeracy skills are often a gatekeeper for entrance into further education in many occupational areas and can critically affect employability and career options. The experiment used a numeracy assessment to provide a very simple proxy for participants' readiness to learn and to engage in educational activities. The numeracy assessment employed for this experiment is a subcomponent of the Educational Testing Service's Adult Literacy and Lifeskills Survey (ALLS) and was provided by Statistics Canada.[4] The assessment uses 31 questions involving the use of mathematics in real-life situations to evaluate numerate behaviour.[5] The results of this assessment provide a rough gauge of an individual's competencies and allow for investigation of the relationship between the readiness to learn and the decision to invest in learning. It is also possible to make comparisons between perceived and measured ability to learn.

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[4]The numeracy assessment is copyright-protected by Statistics Canada and is therefore not included with the two other instruments used in the Appendix of this report. More information about numeracy assessment can be found in Dingwall (2000).

[5]Numerate behaviour is observed when people manage a situation or solve a problem in a real context; it involves responding to information about mathematical ideas that may be represented in a range of ways; it requires the activation of a range of enabling knowledge, behaviours, and processes. See Gal (2000).

Table 1.1: Summary of 40 Time Preference Choices

| | Later Payoff Offered | |
Early Payoff of $65 Offered	With Annualized Rate of Return	With Wait Period
Today	10%	One month
	20%	
	50%	
	100%	
	200%	
Tomorrow	10%	
	20%	
	50%	
	100%	
	200%	
One month from today	10%	
	20%	
	50%	
	100%	
	200%	
One year from today	10%	
	20%	
	50%	
	100%	
	200%	
Today	10%	One year
	20%	
	50%	
	100%	
	200%	
Tomorrow	10%	
	20%	
	50%	
	100%	
	200%	
One month from today	10%	
	20%	
	50%	
	100%	
	200%	
One year from today	10%	
	20%	
	50%	
	100%	
	200%	

Table 1.2: 10 Choices Between Risky Gambles

	Option A		Option B	
Decision 42	1/10 of $40	9/10 of $32	1/10 of $77	9/10 of $2
Decision 43	2/10 of $40	8/10 of $32	2/10 of $77	8/10 of $2
Decision 44	3/10 of $40	7/10 of $32	3/10 of $77	7/10 of $2
Decision 45	4/10 of $40	6/10 of $32	4/10 of $77	6/10 of $2
Decision 46	5/10 of $40	5/10 of $32	5/10 of $77	5/10 of $2
Decision 47	6/10 of $40	4/10 of $32	6/10 of $77	4/10 of $2
Decision 48	7/10 of $40	3/10 of $32	7/10 of $77	3/10 of $2
Decision 49	8/10 of $40	2/10 of $32	8/10 of $77	2/10 of $2
Decision 50	9/10 of $40	1/10 of $32	9/10 of $77	1/10 of $2
Decision 51	10/10 of $40	0/10 of $32	10/10 of $77	0/10 of $2

In order to determine if providing more labour market information (from credible sources) can have an impact on the decision to invest in learning activities, the experiment offered a subset of participants a 90-minute information session on the actual labour market outcomes for those who pursued various fields of education. The design of the labour market information component of the experiment is summarized in Figure 2 on the next page. In the first survey, all the participants answered questions about their perceptions of the labour market. Those with relatively poor perception and who did not receive a payment linked to taking education during the initial experiment were assembled into a subsample. This subsample was divided randomly into two groups: treatment and comparison. Those in the treatment group were invited back to an information session. These sessions focused on locally available courses and local employment opportunities for different trades and occupations. One month following the information session, members of treatment and comparison groups were invited back to complete a short survey and another set of decision questions. The objective of this follow-up session was to determine whether preferences for education had been affected by exposure to the labour market information intervention.

Detailed descriptions of the analysis performed to estimate take-up rates, displacement effects, and windfall gains are presented in Section 4 followed by a similar description for the barriers analysis in Section 5.

Figure 2: Labour Market Information Design

Initial Experiment

More research? — No → No further action

Yes

Screen — Good general understanding of labour market or received educational compensation → No further action

Relatively poor understanding of labour market

Random Assignment

Treatment: LMI Session

Comparison: No Action

Follow-Up Experiment
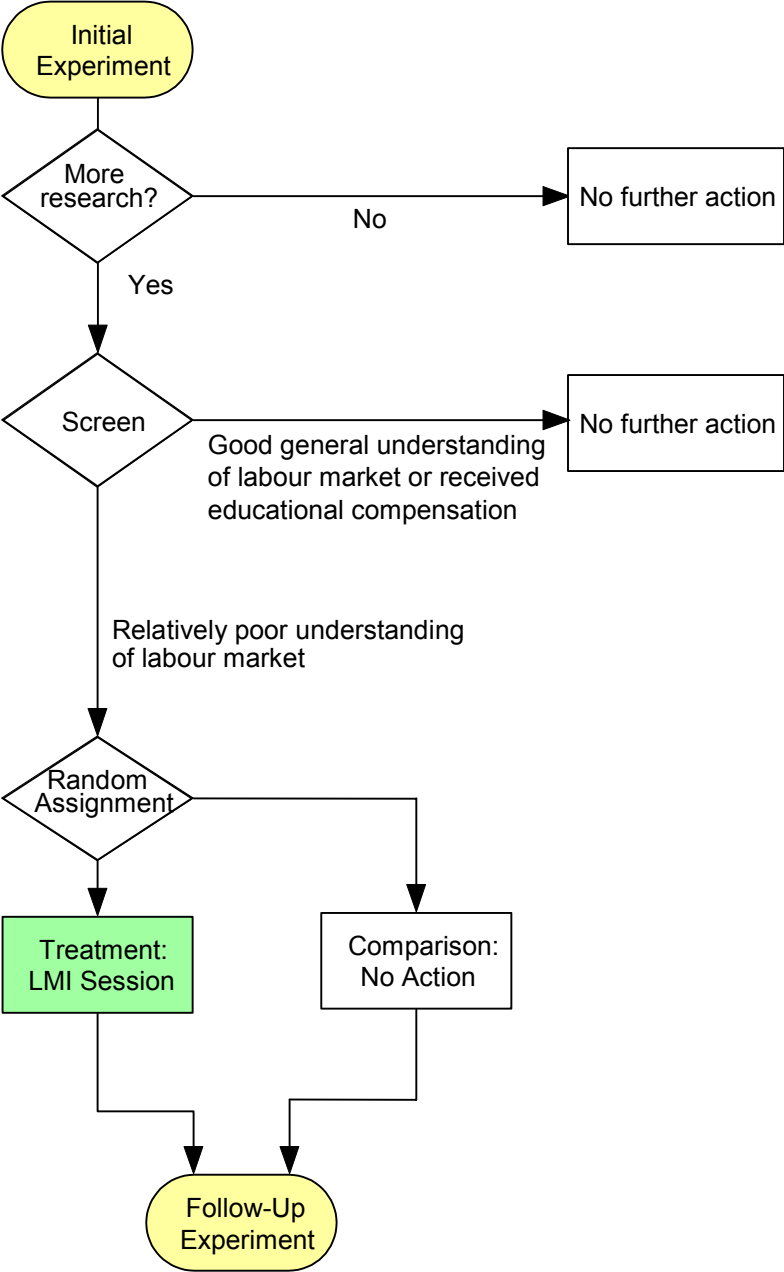
3. Implementation

From May 2002 to March 2003 nearly 900 Canadian residents, ranging in age from 17 to 55 years, participated in 102 experimental sessions. This sample was drawn from both urban and non-urban sites across Canada and was made up mainly of people who were already engaged in the labour force.

SAMPLE

The experiment participants included representatives from all age groups between 18 and 54 years grouped into three age categories. The first category of youth between the ages of 18 and 24 years includes at-work, non-full-time students whether they are independent or living with their family. In addition, since the question of how the availability of part-time benefits may influence the decision to invest in full-time studies is of interest, the experiment also included full-time post-secondary students and youths who were still in high school. The second age group includes participants between the ages of 25 and 44 who have some attachment to the labour force (they could be either unemployed or employed). Lastly, a small number of participants between the ages of 45 and 55 were included. Although the returns to additional education for older participants would be expected to be low, with the increasing duration of working life, a one- or two-month course may bring about significant benefits to an older worker. From a policy perspective, it would be interesting to know how many people in this older age group would actually respond to financial assistance incentives to foster participation in adult education.

To generate meaningful comparisons by age group; gender; labour force attachment; and low-, medium- or high-income status, the original project design called for a minimum sample size of 920 urban respondents. However, the final urban sample was 736; therefore, some subgroup comparisons are not feasible using this sample.

It was also essential to have a sample of non-urban residents to compare their behaviours to urban residents. People in non-urban areas may face particular barriers to learning: transportation costs, lack of access to education providers, or simply reluctance to leave a community that they are deeply attached to. For many individuals in non-urban areas the decision to pursue education may mean abandoning their social ties and a way of life that they cherish.

The project design called for 400 participants from non-urban areas to allow meaningful analysis and comparisons between non-urban and urban behaviour. For the purpose of the analysis, this sample size would allow subgroups to be created that included one characteristic in addition to the non-urban/urban characteristic. Unfortunately, however, the recruitment efforts, summarized in the next subsection, were able to attract only 149 non-urban participants.

Table 2: Sample Summary

	Urban Sample	Non-urban Sample
Age 18–24	144	26
Age 25–44	352	88
Age 45–55	160	35
Male	293	57
Female	363	92
PSE student	96	5
Unemployed	125	38
Part-time employed	137	33
Full-time employed	219	42
Subtotal	656	149
High school student sample	80	N/A
Total	736	149

SITE SELECTION

The experiment was conducted using pen-and-paper questionnaires and simple random draw devices like bingo balls and dice. Given the individual nature of the decisions, computers were not necessary. Therefore, the experiment was highly portable and accommodating to a variety of environments. Technically, there were no restrictions on the geographic locations of the experiment. Project cost considerations suggested that participants be drawn from locations with convenient travel connections from the Social Research and Demonstration Corporation (SRDC) office in Ottawa and the Center for Interuniversity Research and Analysis on Organizations office in Montreal where possible. Halifax, Ottawa, Toronto, and Vancouver were selected as urban sites. Calgary was added as an additional urban site to boost the sample size due to insufficient recruitment in the first four sites. These urban sites provide representation from the Pacific, Prairie, Central, and Atlantic regions of Canada.

In order to ensure enough diversity within the non-urban sample, the planned site selection included a minimum of five different non-urban areas in different parts of the country and with different concentrations of industrial activity. Given budgetary considerations, the non-urban sites selected were in close proximity (1–4 hour driving distance) to the urban sites.

Based upon the literature comparing rural and urban educational preferences, a set of criteria was established (Andres & Looker, 2001; Frenette, 2002; Dupuy, Mayer, & Morissette, 2000). Where possible, the selected non-urban sites have limited availability of post-secondary educational opportunities and are located a minimum of 80 kilometres from a four-year degree granting institution. The rural sites selected include Bridgewater, NS; Cornwall, ON; Pembroke, ON; Smiths Falls, ON; Red Deer, AB; Olds, AB; Powell River, BC; and Courtenay, BC.

Table 3: Number of Participants Per Site (Excluding Ottawa High School Students)

Site	Number of Participants
Halifax, NS	154
Ottawa, ON	123
Toronto, ON	180
Calgary, AB	95
Vancouver, BC	126
Bridgewater, NS	5
Cornwall, ON	24
Pembroke, ON	19
Smiths Falls, ON	23
Olds, AB	8
Red Deer, AB	16
Powell River, BC	12
Courtenay, BC	37

Note: The total number of participants in any site may vary from the final sample number. Some participant data was excluded on the basis of mental incapacity or intoxication during the experiment process or inability to complete all three instruments due to significant learning problems.

RECRUITMENT

Significant changes were made during the recruitment phase of the study in order to improve recruitment results and to ensure a large enough sample for subgroup comparisons. The initial recruitment strategy relied on the co-operation of business networks to provide access to staff as a recruitment pool. Upon closer inspection, it was found that many firms were already offering financial support for educational pursuits to their employees. Therefore, the recruitment strategy was adjusted to focus on recruitment from the general public and the questionnaire was modified to collect data on employer support available to respondents.

For sessions held between May and July 2002, participants were recruited by local Human Resource Centres of Canada (HRCC) staff and recruitment pamphlets placed in HRCC waiting areas, as well as newspaper advertising in popular daily newspapers. While these methods allowed for the recruitment of nearly 600 participants in this time period, additional recruitment strategies were added in September 2002 to improve response, particularly among youth and part-time workers. These included the design of new advertising, the addition of site visits to distribute recruitment materials more broadly in local businesses and public venues, and the use of community radio and TV announcements. Local community groups were also engaged to assist in the recruitment of specific subpopulations.

Recruitment advertising included the following information:

- A brief description of the research partners

- A statement acknowledging the support of the Government of Canada

- The time commitment involved

- The show-up fee

- The potential to earn additional income

- Assurance of confidentiality and privacy

Participants volunteered by calling a toll-free number or signing up through a Web page. Prior to scheduling, they completed a short demographic questionnaire to determine eligibility for participation according to the sample design.[6]

The scheduling staff contacted, by phone or e-mail, those participants who were deemed eligible to schedule the most convenient session time. Where possible, the scheduling team made reminder e-mails or phone calls to encourage high levels of attendance at the sessions. Sessions were also scheduled during work hours, evenings, and weekends to ensure the maximum availability of session times for participants with different backgrounds and time commitments.

In order to recruit high school students, application was made to the Ottawa–Carleton Research Advisory committee. Upon study approval, experiment staff were granted access to the high schools and co-operated with student services staff to recruit and schedule senior students. Sessions were held inside the schools immediately following the end of classes to encourage high levels of participation.

No details as to the nature of the experiment were released before the experiment in each locality. For showing up on time, each participant received a $20 show-up fee. This fee guaranteed that they would not leave the experiment empty-handed, allowed the experimenters to show the participants that they keep their word in terms of making promised payments, helped the participant to feel committed to finishing the experiment, and, most importantly, encouraged the participants to show up on time.

EXPERIMENT PROTOCOL

The experimental sessions were held in controlled environments including classrooms, boardrooms, and hotel conference facilities. The planned optimal number of participants per session was between 20 and 25, allowing the entire urban subject pool to be contained in 50 sessions. As the demand for different session times in different locations varied, a total of 102 sessions were conducted with 30 as the maximum number of participants in any session.

Upon arrival, the experimenter greeted participants. This greeting reminded participants that all information collected would be kept confidential and used for research purposes only. All participants received an identification number to protect their confidentiality, and all participants also signed a consent form. The consent form included a provision for confidential follow-up at a later, undetermined date. Follow-up contacts could include surveys and verifications of subsequent actions by participants. For instance, if in the future there is interest in finding out how many grant, loans, or saving incentives recipients actually completed education or training courses successfully, it would be possible to contact individuals to collect that information. It would also be possible to find out the reasons and barriers that prevented the recipients of the financial assistance from completing their studies or from paying back their loans.

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[6]The target population consisted of adults who were already engaged in the labour force and may benefit from additional training and education. The target sample included representatives from between 18 and 55 years of age, men, women, the employed, the unemployed, the part-time employed, current students, and people from varying income levels. The sample was constructed in an attempt to gain a large enough sample for meaningful comparisons between gender, labour force attachment, income level, and non-urban residents.

During the introduction to the experiment, participants were told that they could earn substantially more than their show-up fee by completing *three* instruments:

1. Compensated decision questions

2. An attitudinal, socio-economic, and behavioural survey

3. A numeracy assessment

The experimenter provided participants with appropriate details of the compensation available. This compensation included opportunities to receive both cash rewards and non-monetary rewards in the form of educational financing. All participants were provided with the following information regarding the educational financing:

Grants — Educational grants will be disbursed if a participant enrols in an institution for learning or training within two years from the date of experiment participation. The grant will cover direct and indirect costs related to the learning activity. For tuition fees, payments will be made directly to the education institution. Receipts will be required for the reimbursement of other costs.

Loans — Educational loans will be disbursed if a participant enrols in an institution for learning or training. These loans will be available up to two years from the date of the experiment. The loans are repayable upon the completion of study or if the participant drops out of the program of study. The interest rate floats and is set at the inflation rate, i.e. the loans will a carry a zero per cent real interest rate.

ISR loans — Income-sensitive repayment (ISR) educational loans were described as identical to the "loans" described above with the additional feature that repayment can be suspended, but not forgiven, if the income of the participant falls below the level of income before entering education or training. If the income contingency option is instituted and repayment is suspended, interest will continue to accumulate.

Matched savings — Matched savings will be disbursed if a participant enrols in an accredited institution for learning or training within two years of the date of the experiment. Participants receive matching funds at a given percentage (20 per cent, 50 per cent, 100 per cent, or 200 per cent) for every dollar of their own savings that they spend up to a combined maximum of $2,000.

In general, participants were advised that all the types of support must be for direct or indirect expenses related to a program of study at an authorized institution. The financial support would only be awarded if the participant, not a family member or friend, enrolled during the two years following the experimental session. Additionally, monies from this study could not be disbursed to pay for past educational investments.

To be easily understood by the participants, the compensated decision instrument needed some explanation and demonstration. Thirteen practice examples, one of each kind of compensated decision, were demonstrated to the participants before they began completing any of the instruments. It was essential that they understood the nature of the questions and how payment would be made.

In completing the compensated decision questions, participants chose between A or B for each decision, and after all decisions were made, one decision was selected at random for each participant and the participant received the payoff corresponding to the choice made for

the selected decision. For instance, if a participant chose B in a decision between (A) $100 cash, or (B) $1,000 grant and that decision question was randomly selected, the participant would be eligible for a $1,000 grant for education or training. The random selection of the compensated decision was completed using a bingo ball cage where each decision question number was matched with one corresponding bingo ball number. Each decision question had an equal probability of being selected, making decisions independent of each other.

The first two instruments, the compensated decisions and the survey, were checked by the experimenters for completeness prior to the random selection of the compensated question. Where necessary, participants were informed of missed questions or illegible answers so that they could answer all questions prior to the random selection process. This process of checking was instituted primarily to ensure that all compensated decisions were answered and to prevent the possibility of randomly selecting a decision for compensation where no choice had, in fact, been made.

After all three instruments were completed, the participants met in private with the experimenter in order to be paid for his or her randomly selected question from the compensated decision questions. The Appendix to this report includes a copy of the compensated decision questions and the questionnaire. Statistics Canada provided the numeracy assessment.

The overall experience for each participant was scheduled to take two hours. Some participants finished in as little as 1 hour 20 minutes, others took up to three hours to complete all three parts. Approximately 30 minutes was scheduled for instruction, 15 minutes for the compensated decision questions, 30 minutes for the questionnaire, and approximately 30 minutes for the literacy assessment. This left approximately 15 minutes at the end of each session in which to individually pay each participant. Although the numeracy assessment was estimated to take 30 minutes to complete, explicit instructions were provided to the experiment delivery team that participants should not be rushed to finish the experiment within the two hours scheduled. Therefore, some participants took up to three hours to complete the three instruments.

Approximately five months after the initial experiment, the labour market information treatment was conducted. A subsample of participants was selected and divided into treatment and control groups. Each treatment participant was paid $40 for arriving on time for a labour market information session. The sessions were conducted in Halifax, Toronto, Ottawa, Calgary, and Vancouver. One month following the information session, treatment and control participants were invited back to complete a small survey and another set of decision questions, called the "follow-up." The follow-up protocol was identical to the initial session protocol with the exception of a different introduction and the absence of the numeracy assessment. Participants were asked to sign an informed consent, asked to participate in the demonstration of the 13 practice questions, and were paid privately after they completed the two instruments: compensated decision questions and a brief survey. The follow-up sessions took up to one and a half hours to complete.

4. Revealed Behaviours

The answers to the first three research questions — dealing with participation rates, displacement effects, and windfall gains — are detailed in this section.

Behavioural measures of time preferences and risk are used in the analysis of displacement effects. As discussed earlier, among the compensated decisions made by participants were (1) choices between cash at a particular date and cash at a later date, and (2) choices between cash alternatives with different levels of risk. The analysis of the responses to these questions shows that participants are heterogeneous with regard to time and risk preference measures, and that variations in participants' demographic and socio-economic characteristics do little to explain this variability.

TIME PREFERENCE

By indicating their preferences for smaller returns sooner (SRS) or larger returns later (LRL), participants reveal their time preferences. In the experiment, participants were presented with 40 such choices with different initial pay dates, wait times, and rates of return. The early payment, or SRS, was $65 for all questions and was paid on the day of the experiment, or the following day, or a month, or a year from the experiment date. Wait times for the later payments, or LRL, were either one month or one year after the early payment date. The rates of return for LRL varied from annualized 10 per cent to 200 per cent. The measure of patience for monetary payoffs is simply an index count of the number of times a participant was willing to wait for LRL. This sum will be referred to as the behavioural index of patience for monetary rewards or *willingness to save*.

Overall, approximately 3 per cent of the participants waited for the larger returns every time and approximately 5.6 per cent never waited, choosing the earliest payoff at every opportunity. To investigate how observable characteristics are correlated with this behavioural measure, the summary results of an Ordinary Least Squares regression on *willingness to save* is presented in Table 4. Non-urban participants and current post-secondary students showed greater patience, favouring the later choices more frequently. The fact that post-secondary students reveal more willingness to delay consumption is consistent with their willingness to invest in human capital. However, there is no particular reason why non-urban residents would show a greater patience for delayed rewards. Those participants who reported that they felt burdened by debt were less patient for monetary payoffs. Those with the lowest mathematical competency scores were less patient, on average choosing to accept the earlier cash alternative in four more decisions when compared to those with a mathematical competency score within one standard deviation of the median. All other factors, such as sex, age, family status, and labour market attachment, did not appear to affect patience. Overall, given the low R^2, as is often the case with cross-sectional data, the variation that is present in *willingness to save* is not well explained by the socio-economic and demographic variables. The analysis now turns to an examination of the experimental parameters of each time preference question and how those question characteristics may impact behaviour.

Table 4: Determinants of the Number of Patient Choices for Each Individual (Ordinary Least Squares, Willingness to Save)

Variable	Coefficient	t-statistic
Age 18–24	*ref*	*ref*
Age 25–44	-0.59	-0.57
Age 45 and older	1.32	1.10
Male	-0.68	-0.98
Female	*ref*	*ref*
Household income low	-0.72	-0.85
Household income medium	*ref*	*ref*
Household income high	1.27	1.51
Married	-1.16	-1.42
Has children under 5 years of age	1.51	1.27
Non-urban resident	**1.76**	1.90
Hold diploma	-0.07	-0.13
Part time employed	1.84	1.50
Full-time employed	1.77	1.49
Unemployed	1.34	1.07
Post-secondary student	**4.38** **	2.83
High school student	2.53	1.40
Neither in the labour market nor a student	*ref*	*ref*
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	**4.44** ***	4.68
Mathematical competency high	**7.67** ***	6.32
Leisure TV	-2.18	-0.79
Burdened by debt	**-2.04** **	-2.96
Constant	**13.75** ***	6.66

Notes: R^2= 0.078; 881 observations.

Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates a 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table 5 summarizes the effect that the time preference experimental parameters had on the choices participants made. The dependent variable for this analysis was, by time preference decision, the proportion of participants who chose the later payoff for that decision. Delaying the later payoff had no effect on the incentive to pick the later payoff. However, increasing the rate of return did induce more patient behaviour from the subjects. It is interesting to note that in addition to the relative difference, the absolute difference between payoffs encouraged the participants to delay their rewards. The variable "Today" was included in this regression to test whether participants were especially attracted by payoffs that were made on the day of the experiment. They were not.

Table 5: Factors Affecting the Proportion of Participants Choosing the Earliest Payoff Choices for Each Time Preference Question (Logistic Specification)

Variable	Coefficient	t-statistic
Constant	**-1.489** ***	-7.43
Wait a month[a]	0.1319	0.48
Today[b]	-0.2059	-0.95
Absolute return[c]	**-0.008843** *	-1.98
Rate of return[d]	**-0.01270** ***	6.18

Notes: $R^2 = 0.8095$, 40 observations.

Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

[a]"Wait a month" is a dummy to signify that participants had to wait a month for the later payment. All later payments were either a one-month wait period or a one-year wait period.

[b]"Today" is 1 if payoff is the day of the experiment, 0 otherwise.

[c]"Absolute Return" is the absolute difference between payoffs (Later Payoff – Early Payoff).

[d]"Rate of Return" is the annualized rate of return for waiting for a later payoff.

RISK PREFERENCE

Choices among lotteries with different payoffs and probabilities provide a measure of risk attitude for monetary payoffs from each participant. Participants were asked to make 10 decisions between two alternative lotteries as summarized in Table 1.2. A risk neutral participant, one who chooses lotteries with higher expected outcomes and is indifferent between lotteries with the same expected outcome, would choose Option A, the safe outcome, for the first four choices and Option B, the risky outcome, for the remaining six decisions described in Table 1.2. The median behaviour for participants in this experiment was Option A, the safe outcome, for the first seven choices. This relatively risk-averse behaviour is typical and is also found in experiments conducted with university subject pools (Holt & Lowry, 2002). However, here, with a more diverse subject pool, it is possible to examine the observable characteristics of the participants in conjunction with risk-seeking behaviour.

Risky decisions is a simple count of the number of risk-seeking decisions (i.e. choices of Option B) by each participant. To investigate how observable characteristics are correlated with this behavioural measure, the summary results of an Ordinary Least Squares (OLS) regression on *risky decisions* is presented in Table 6. When compared with their younger counterparts, those participants who were over 25 were slightly more willing to engage in risky monetary gambles, and men were more willing to take a monetary risk than women. Those who had part-time jobs were more risk seeking than those who were in and out of the labour force. The only negative factor to appear in the analysis is that participants who had a diploma were slightly less willing to endure monetary risk. Overall, as with *willingness to save*, the variation that is present in *risky decisions*, as indicated by an extremely low R^2, is not well explained by the socio-economic and demographic variables.

Table 6: Determinants of Participants Choosing More Risky Lotteries (Ordinary Least Squares, Risky Decisions)

Variable	Coefficient	t-statistic
Age 18–24	*ref*	*ref*
Age 25–44	**0.36**	1.83
Age 45 and older	**0.38**	1.68
Male	**0.43** **	3.28
Female	*ref*	*ref*
Household income low	0.07	0.42
Household income medium	*ref*	*ref*
Household income high	0.05	0.31
Married	-0.24	-1.53
Has children under 5 years of age	0.41	1.83
Non-urban resident	0.09	0.53
Hold diploma	**-0.18**	-1.73
Part time employed	**0.43**	1.86
Full-time employed	0.29	1.30
Unemployed	0.13	0.54
Post-secondary student	0.23	0.78
High school student	0.28	0.83
Neither in the labour market or a student	*ref*	*ref*
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	-0.13	-0.73
Mathematical competency high	-0.26	-1.14
Leisure TV	0.37	0.70
Burdened by debt	0.07	0.50
Constant	**3.19** ***	8.16

Notes: R^2 = 0.012, 881 observations.
   Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates a 0.1 per cent level.
   "*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

We now turn our attention to the first three questions outlined in Section 2 concerning participation rates, displacement effects, and windfall gains, all of which will be addressed through the participants' preference for education.

EDUCATION PREFERENCE

Participants made 28 choices involving different financial incentives for education. Figure 3 below sketches out the relative attractiveness of $1,000 possible by means of each of the four types of financing compared with receiving $100 cash. In general, for both full-time and at least part-time study, grants were the preferred means of financing education,

with 100 per cent matching grants a close second, and loans a distant third. This is not surprising; in fact, it would be odd to have any other order of preference. Participants are expected to prefer financing that is less costly to them.

Figure 3: Proportion of Uptake for $1,000 in Educational Financing
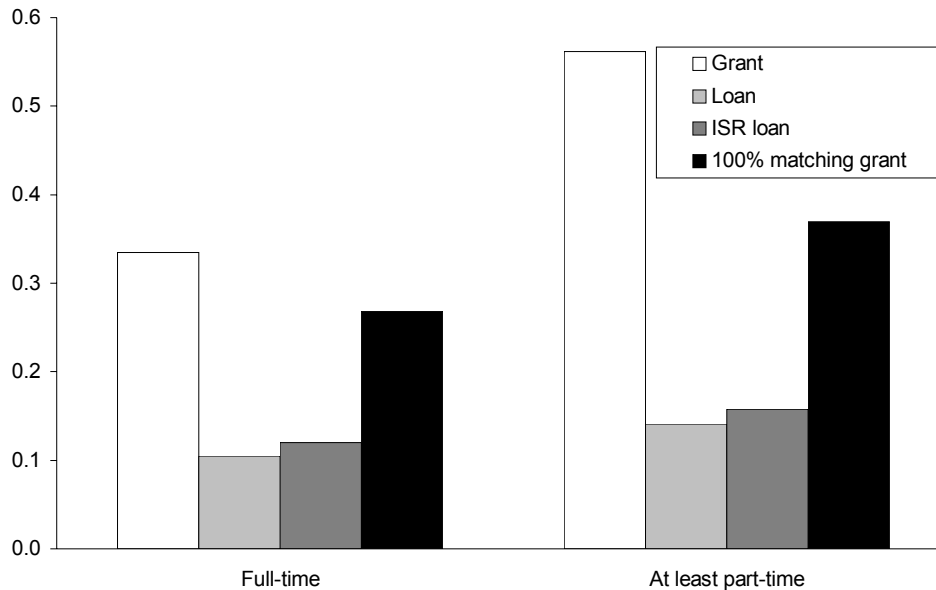
Aggregate results for the investment decisions are shown in tables A.1 and A.2, and A3 in the Appendix. Table A.1 summarizes all the participants, and tables A.2 and A.3 summarize the urban and non-urban sub-samples. Relevant subgroups are listed across the top of each table with the sample sizes for each shown in parentheses. The investment decisions are numbered with an abbreviated reminder of the decision. The alternative to all investment decisions is $100 one week from the day of the experiment unless otherwise noted. All the decision questions in their entirety can be found in the Appendix.

Participation Rates

What would be the likely response (take-up rates) to different levels and types of financial incentives provided by the government to encourage adult learning? How do the response rates differ from one subgroup of the population to another?

Because the compensated decisions are real, costly, and contextual for the participants, these measures are indicative of what the participants would do when faced with similar choices in real life. The proportion of respondents who accepted the educational investment option under the various financial assistance schemes, at the various levels of generosity, is calculated for each subgroup. While the proportion of responses from each subgroup is summarized in tables A.1, A.2, and A.3, the most notable results are presented in Figures 3 to 9.

The sample used is this study is not representative of the Canadian population; the sample displays a higher level of literate and numerate behaviour than the Canadian average, only draws upon only four Canadian regions, does not represent older Canadians and some disadvantaged groups, and also has a higher proportion of females. However, this does not prevent comparisons among subgroups and the informative conditional analyses to follow in Section 5. The information gathered here could be used to develop a shortened, more policy-specific experiment using one decision distributed to a representative sample. This would generate far more reliable point estimates of the policy response.

Figure 4 presents the proportion of participants who choose a $1,000 grant for full-time education over cash. These values are taken from Table A.1, decisions 76, 75, 77, and 78. The figure highlights the prevalent behaviour of all participant subgroups. As the cost of financing education increases, the percentage of participants investing in education falls. Figure 5 compares the complementary at least part-time decisions to the full-time decisions in Figure 4. Participants on the whole are significantly more willing to engage in education when funding for at least part-time study is available (p-value = 0.0001). However, even under the most generous conditions ($1,000 grant for at least part-time study versus $50 cash, Decision 90), 41 per cent of all participants choose not to take funding for education.

Figure 4: Proportion of Participants Who Chose a $1,000 Grant for Full-Time Study With Cash Alternatives
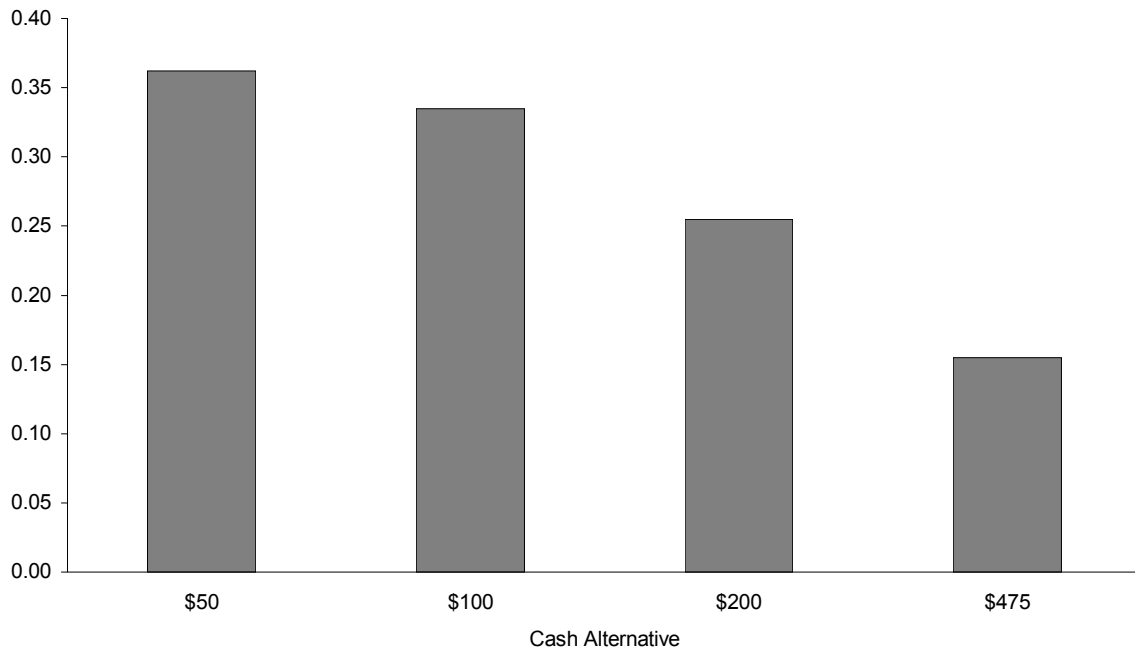
Figure 5: Proportion of Participants Choosing a $1,000 Grant Over a Cash Alternative
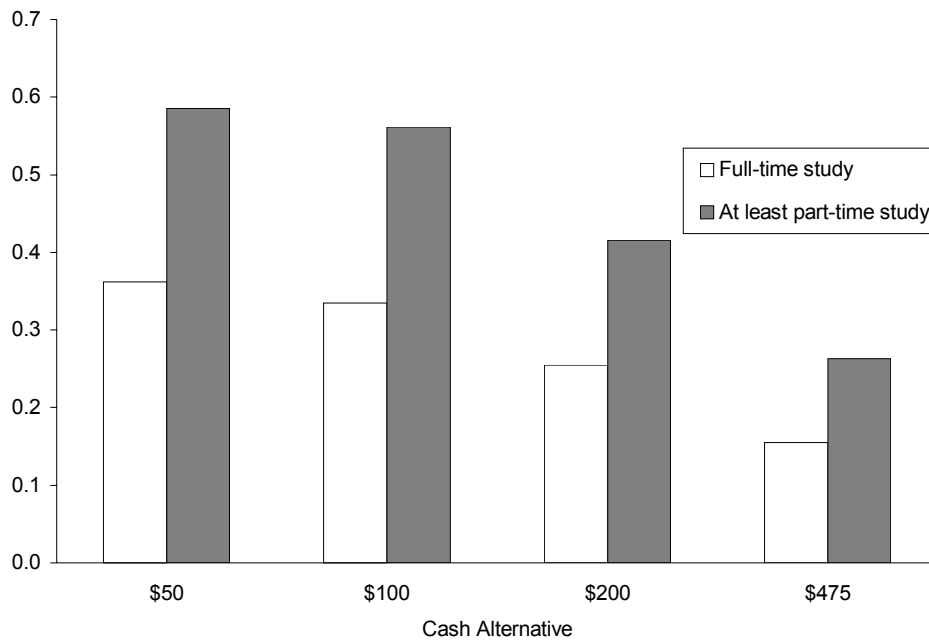
Figure 6: Proportion of Participants Choosing a $1,000 Grant for Full-Time Study Over a Cash Alternative
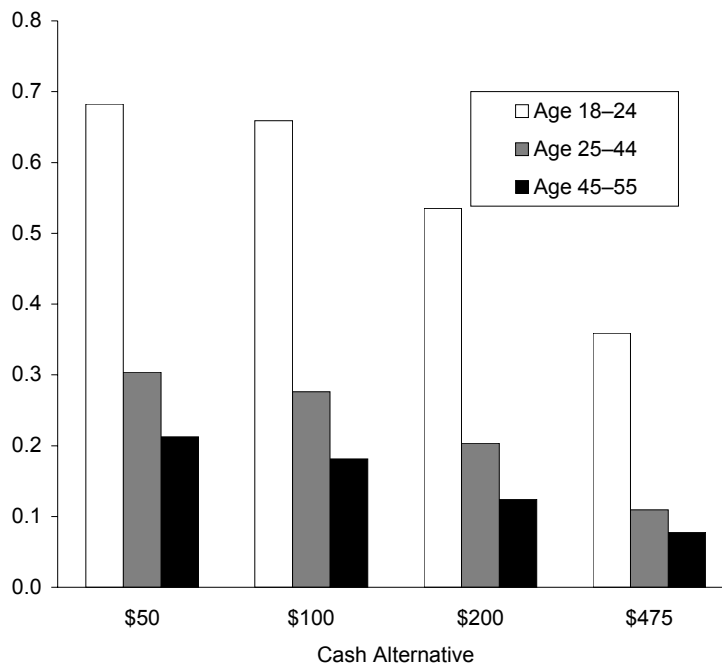
High school students exhibit the highest propensity to take up education. Overall, participants under age 25 were significantly more likely to choose education than those over age 25, as depicted in Figure 6 with regard to $1,000 grants for full-time study. Providing funding for at least part-time study does not significantly change the decisions of very young people, but does encourage more investment on the part of adults over age 25 (Figure 7).

Figure 7: Proportion of Participants Who Chose a $1,000 Grant for at Least Part-Time Study Over a Cash Alternative
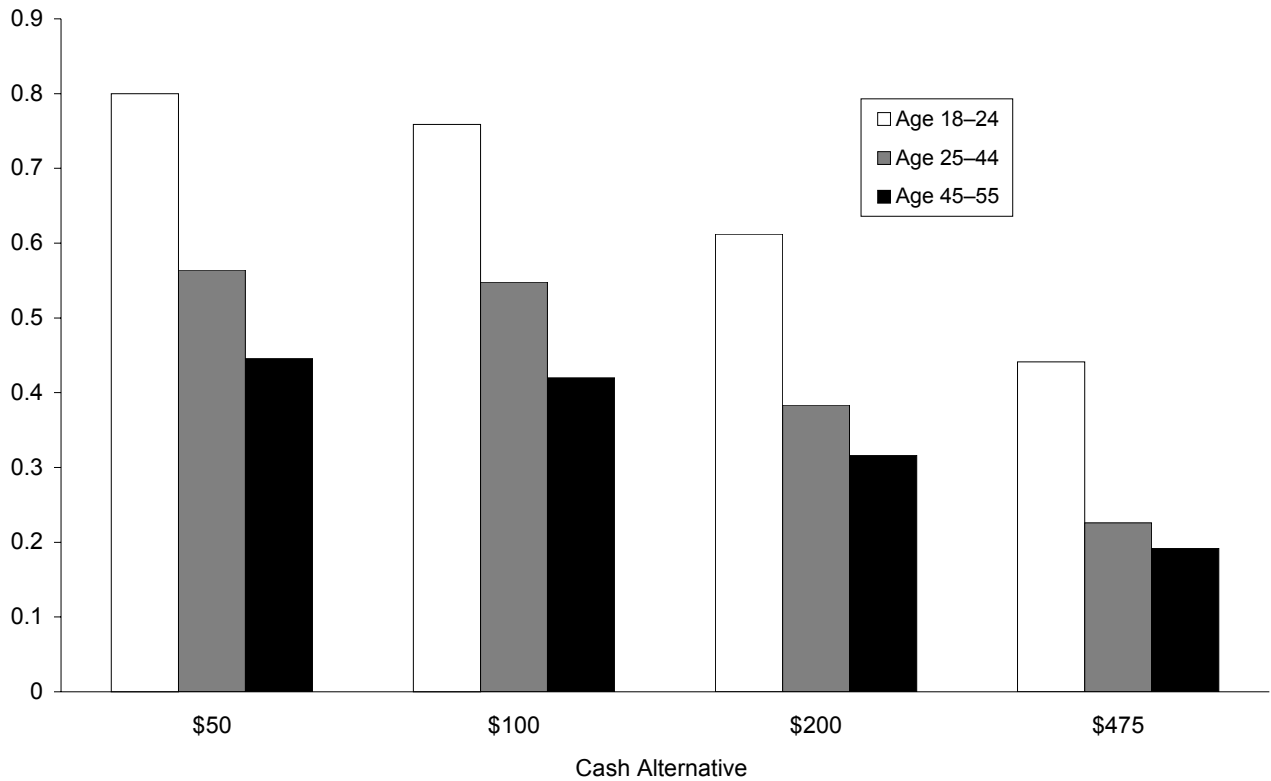
There was no significant difference between the urban and non-urban dwellers when it came to choosing $1,000 grants, except when the alternative was $100. All the other differences shown in Figure 8a are statistically insignificant. However, if we examine the proportions accepting a grant according to the sex of the participant in each of the sub-samples, there is a difference between urban and non-urban participants. Figure 8b illustrates the significant differences between the urban male and non-urban male participants.[10] In general, proportionately more males accepted full-time grants than non-urban males. The same is true when the form of financing for full time study is loans (Figure 9). Non-urban males differ significantly from urban males by choosing education far less when financed by loans (p-value = 0.05) In Section 5, "Barriers to Education," several regression models are considered to examine the relationship between educational investment and individual characteristics. Non-urban status does play a role in the preference for loans.

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[10]All differences are significant at the 0.05 level except for one non-significant difference for the $200 cash alternative.

Figure 8a: Proportion of 18–25 Year Olds Who Chose a $1,000 Grant For Full-Time Study Over a Cash Alternative
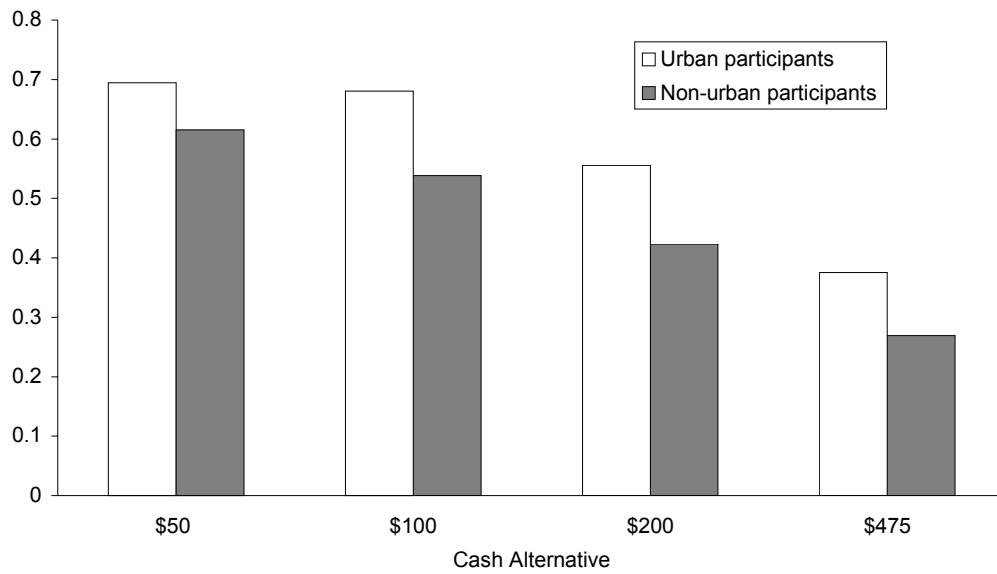
Figure 8b: Proportion of Men Who Chose $1,000 in Full-Time Grant Funding
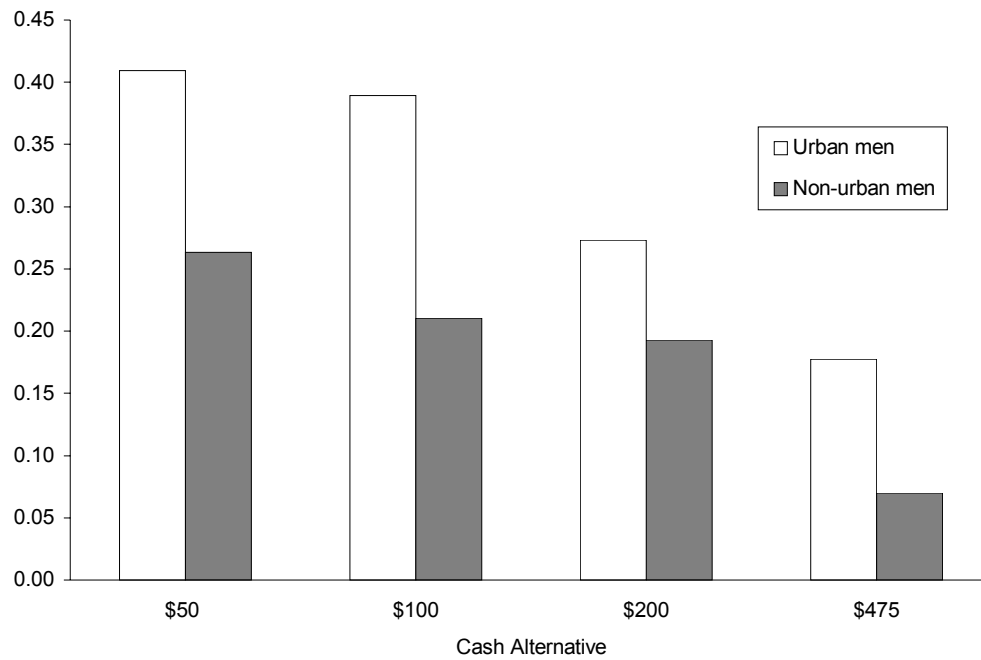
Figure 9: Proportion of Participants Who Accepted a Full-Time Loan Over $100 Cash
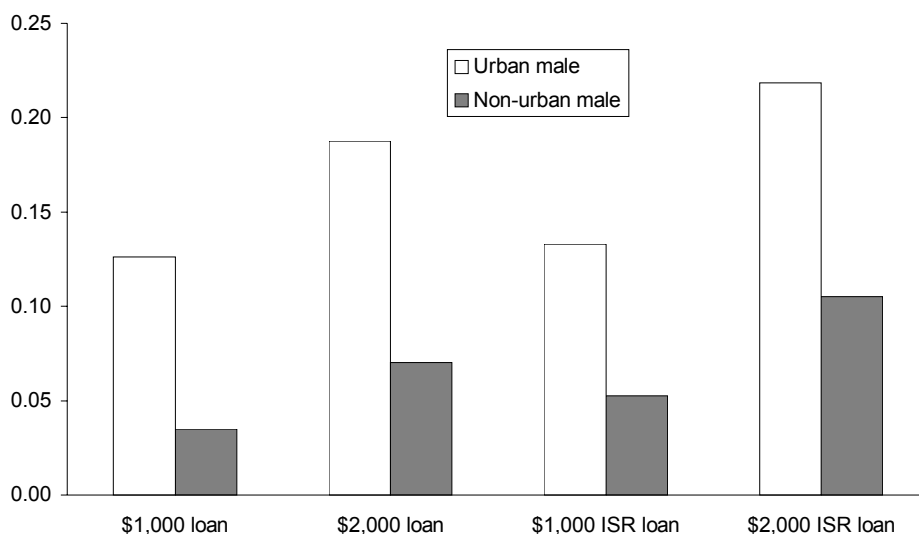
Lastly, Figure 10 compares the choices made by urban participants with different types of labour force attachment with respect to two particular education decisions. The 20 per cent matching grant entails the highest cost grant to the individual participant — in order to receive $333.34 in an educational matching grant, a participant must pay $1,666.66 in educational expenses. Therefore, it provides the best relative cost comparison to the most generous loan choice, a $2,000 income-sensitive repayment (ISR) loan. There is a significant difference in behaviour between post-secondary students and those with some labour force attachment. Post-secondary students prefer matching grants over loans while the unemployed, part-time, and full-time employed prefer loans for education to 20 per cent matching grants. These differences in preferences are explored further in Section 5 in an examination of loan aversion.

While the above comparisons among subgroups provide some illumination of the factors that may affect the decision to invest in education, this analysis does not control for other, non-demographic factors that may affect participant response. The same subgroups identified above were used as independent variables in regression analysis to investigate what characteristics may explain differences in participation rates. The results are reported in Section 5.

Figure 10: Proportion of Urban Participants Who Chose Education Financing Over $100 Cash

Labour Force Attachment of Participant
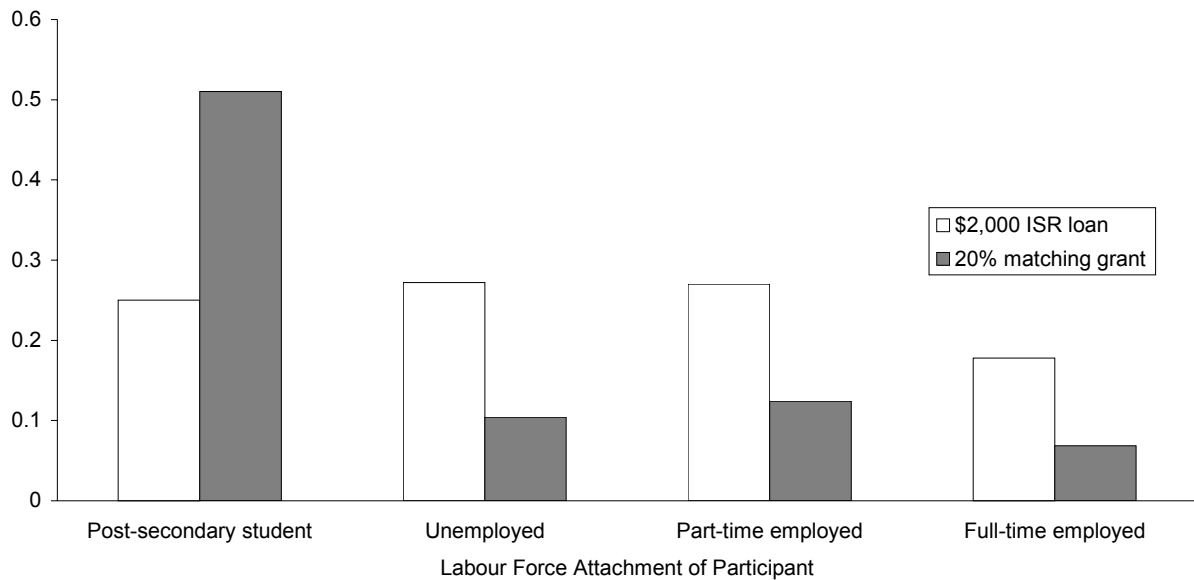
Potential Displacement Effects

Would the availability of grants for part-time studies discourage individuals from pursuing full-time studies?

In summary, we find that adults over 25 years of age are far more likely than their younger counterparts to accept at least part-time funding that is less generous than full-time funding. This does not mean that younger participants were not tempted by at least part-time funding. We found a sizable minority of students, high school and post-secondary, who were more likely to accept at least part-time funding for study given that they had revealed a preference for full-time funding.

Participants in the experiment were asked to make two sets of decisions: (1) choosing between cash and financing for *full-time* education, and (2) choosing between cash and financing for *at least part-time* education. We allowed participants to use at least part-time education funding for full-time studies. If a participant makes the same number of at least part-time educational choices as full-time, it is assumed he or she will use the funds for full-time study. If a participant makes more at least part-time choices than full-time choices, it is assumed that he or she has two sets of plans, one for full-time study and one for part-time study. In our study, 299 participants made no choices to take full-time education. Of the 582 participants who did choose some educational subsidy, 320 chose funding for at least part-time education more often than funding for full-time education indicating that they had two sets of plans. These are the individuals of interest. Those who have two sets of plans are more ready to take advantage of available part-time funding and perhaps would be discouraged from full-time commitment when part-time monies are available. We use a bivariate probit with selection bias to model the decision to invest for individuals with one or two sets of plans.

Consider an individual *i* who must choose between a series of two alternatives: receive different levels and types of financing for full-time education or receive cash. For a given

individual i, $i = 1, ..., N$, the net utility of choosing any full-time education over the cash alternative can be expressed as a sum of two components:

$$E_{FT}^* = \beta' X_{FT} + \varepsilon_{FT},$$

(1)

where X_{FT} denotes the observed component which is a known function of the characteristics and socio-economic background of the individual, as well as some environmental variables, and ε_{FT} is an unobserved random component. Of course, this utility is unobservable. However, the choice of full-time study is observable. Define the binary outcome of some full-time education over cash as

$$E_{FT} = \begin{array}{l} 1, \text{ if } E_{FT}^* > 0 \\ \qquad 0, \text{ otherwise} \end{array}$$

(2)

Thus, full-time study is chosen over cash if the net utility of full-time study is positive. In the next decision, conditional on having chosen at least some full-time study, individual i decides to take at least part-time education over cash with a higher frequency than he or she takes full-time studies over cash. The individual has two different sets of education plans. Formally

$$E_{DUAL} = \begin{array}{l} 1, \text{ if } E_{DUAL}^* > 0 \\ \qquad 0, \text{ otherwise} \end{array}$$

(3)

Again, $E_{DUAL}^* = \alpha' X_{DUAL} + \varepsilon_{DUAL}$, is the net utility of choosing the at least part-time education options more often than full-time options. It is likely that the unobserved components ε_{FT} and ε_{DUAL} are correlated. However, data for the second decision should be observed only when the participant has chosen full-time study at least once. In other words, the observed dual plan data are non-randomly selected from the set of participants choosing full-time education. Thus, the pair E_{DUAL}, X_{DUAL} is observed only when $E_{FT} = 1$. And while ε_{FT} is defined over the population of all participants, ε_{DUAL} is defined only on the subpopulation for which $E_{FT} = 1$. To deal with this problem, it assumed that the error components are drawn from a bivariate normal distribution, with a correlation coefficient $\eta : \varepsilon_{FT}, \varepsilon_{DUAL} \sim N(0,0,1,1,\rho)$.

The three categories of observation are made with unconditional probabilities: where Φ_2 is a bivariate normal standard cumulative distribution function and Φ is univariate standard normal cumulative distribution function.

$$E_{ft} = 1, E_{dual} = 1 : \Pr ob\left(E_{ft} = 1, E_{dual} = 1\right) = \Phi_2\left[\beta' X_{ft}, \alpha' X_{dual}, \rho\right]$$
$$E_{ft} = 1, E_{dual} = 0 : \Pr ob\left(E_{ft} = 1, E_{dual} = 0\right) = \Phi_2\left[\beta' X_{ft}, -\alpha' X_{dual}, -\rho\right]$$
$$E_{ft} = 0 : \Pr ob\left(E_{ft} = 0\right) = \Phi\left[-\beta' X_{ft}\right]$$

(4)

The corresponding log-likelihood function is summing over all individuals in the sample:

$$\sum_{E_{ft}=1,E_{dual}=1} \ln \Phi_2[\beta' X_g, \alpha' X_l, \rho]$$
$$+ \sum_{E_g=1,E_l=0} \ln \Phi_2[\beta' X_{ft}, -\alpha' X_{dual}, -\rho] \qquad (5)$$
$$+ \sum_{E_{ft}=0} \ln \Phi[-\beta' X_{ft}].$$

Equation (5) is maximized with respect to the parameters β, α and ρ to obtain maximum likelihood estimates.

The diagram below gives a picture of the three categories of observation. Those individuals who exhibit a willingness to accept part-time funding more readily than full-time funding, but who still have revealed some preference for full-time funding, would fall into the behaviour category depicted by the lower left leg of Figure 11, $E_{DUAL} = 1$. Those participants who have only full-time plans would be represented by the lower right leg of Figure 11, $E_{DUAL} = 0$.

Figure 11: Relationship Between Categories of Behaviour: Part-Time Plans in Addition to Full-Time Plans (E_{DUAL} = 1), Full-Time Study Only (E_{DUAL} = 0), and No Preference for Full-Time Study (E_{FT} = 0)
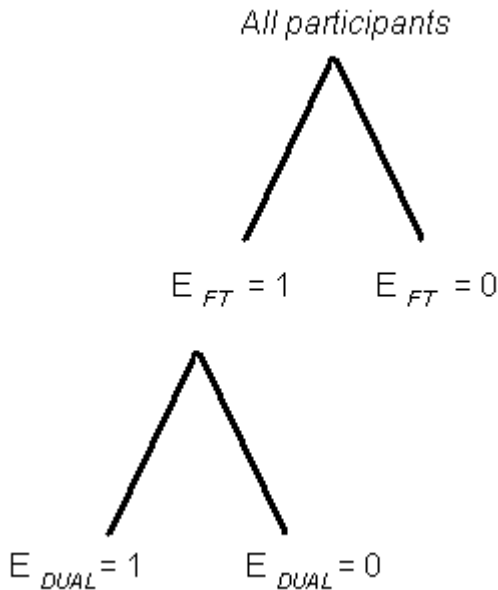
The coefficients listed in the second part of the specification, those for full-time funding (E_{FT}), are relevant for those individuals who have *at least one set of plans*, namely, full-time education and training. The sign of the coefficients indicates the direction of the likelihood of that characteristic of having one set of plans. Table A.3 in the Appendix summarizes the complete specification; here Table 7 presents the significant coefficients. Probabilities, given the specification in Table A.3, are calculated and presented in Table A.4. Table 8 is an abbreviated form of Table A.4.

Table 7: Determinants of Alternative Part-Time Education Plans (Bivariate Probit With Selection Bias, Full-Time Study (E_{FT}), Dual Plans (E_{DUAL}))

Variable	Coefficient	t-statistic
Dual Plans		
Age 18–24	*ref*	*ref*
Age 25–44	**0.39** *	2.14
Age 45 and older	**0.68** **	2.61
Male	**-0.45** ***	-3.21
Has obtained a high school equivalency	**-0.93** **	-2.57
Post-secondary student	**-1.64** ***	-4.38
High school student	**-1.33** **	-2.64
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	**0.43**	2.22
Mathematical competency high	**0.57**	2.24
Constant	**1.88**	2.03
Full-time funding		
Age 18–24	*ref*	*ref*
Age 25–44	-0.21	-1.36
Age 45 and older	**-0.60** ***	-3.31
Married	**-0.20**	-1.69
Immigrant	**1.05** ***	3.78
Part time employed	**0.78** ***	4.37
Full-time employed	**0.32**	1.87
Unemployed	**0.53** **	3.00
Post-secondary student	**1.04** ***	4.15
High school student	**1.19** ***	3.61
Participants not currently a student or in labour market	*ref*	*ref*
Employer pays	**-0.44** **	-2.64
Willingness to save	**0.03** ***	5.80
Positive attitude about education and labour market	**0.05**	1.79
Temporal orientation scale	**-0.01** *	-2.36

Notes: Log likelihood = -751.1275, ρ = -0.26539, 881 observations.

Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.3 in the Appendix.

The probability that an individual had full-time education plans depended positively on his or her current attachment to the labour market. An individual who had any attachment, whether it was full-time or part-time employed or unemployed, was more likely to have full-time education plans than participants who were not currently in the labour market. This also applied to those who were currently enrolled in schooling, either high school or post-secondary education. Those who were willing to save in the experiment and those who had a positive attitude about education were more likely to invest in education. Individuals who have access to generous employer-paid training are less likely to have full-time-only education plans, as are older (over age 45) and married individuals.

Table 8: Calculated Probabilities of Taking at Least Part-Time Educational Funding More Frequently Than Full-Time Educational Funding (Bivariate Probit With Selection Bias Specification, 881 Observations, 299 Censored Observations)

	Probability (Part-Time Funding Chosen More Frequently / Full-Time Choice)	
	Mean	**STD**
Age 18–24	0.3201	0.2349
Age 25–45	0.6964	0.1991
Age 45 and older	0.7313	0.1815
Male	0.5223	0.2636
Female	0.6568	0.2611
High school student	0.2004	0.0931
Not high school student	0.6369	0.2496
Post-secondary student	0.1274	0.0834

Given that a participant has some preference for full-time studies, the top half of Table 7 indicates the direction of the probability of having an additional, different set of plans for part-time study. Participants over 25 years of age were more likely to have two sets of plans than their younger counterparts. And those participants with a relatively higher level of mathematical competency had a higher probability of having a second set of part-time education plans. The negative statistically significant coefficient for high school students, post-secondary students, and those with a high school equivalency indicates that they are less likely to have two sets of plans. Therefore, we can conclude that they are not at a higher risk to be more encouraged by part-time funding than their older counterparts. Men, more so than women, are more likely to have only one set of full-time plans.

The probabilities, based on the entire specification, are shown in the Appendix; a small subset of those probabilities is presented here in Table 8 to complete the discussion. Noting that these probabilities are conditional on the participants revealing a preference for full-time education, older participants were more than twice as likely to have a set of part-time education plans; the mean probability for the youngest participants was 32 per cent whereas older participants had a mean probability of 70 per cent (those aged 25–44) or 73 per cent (those aged 45 and older) to have an alternative part-time schooling plans. One important result is that 20 per cent of high school students with full-time plans and 13 per cent of post-secondary students with full-time plans could be induced to pursue part-time studies.

Potential Windfall Gains

What is the extent of the windfall gain that may result under different levels and types of financial incentives?

The success or failure of a new program or government incentive to foster learning activities should not be assessed solely in terms of the number of individuals who will benefit from the assistance. Some adults engage in education or training without any government

support. For these adults, the availability of grants, loans, or saving incentives would be a source of improvement in income and well being, but it would not change their behaviour. From the perspective of taxpayers and government budgets, subsidizing individuals for what they would do anyway is a waste of public funds. The object of the government financial assistance is to induce behavioural change and increase the level of participation over and above the level that would prevail without the assistance.

In order to evaluate the potential contribution of additional or new financial incentives in encouraging participation, it is necessary to be able to distinguish between those individuals who would change their behaviour as a result of the incentives and those who would have participated in learning activities without the *new* government assistance. If the proportion of the population who engages in education without the assistance of grants, subsidized loans, or saving incentives is known, it is possible to make comparisons with the proportion that subsequently enrols in education and training when the government offers various levels of assistance. Such a comparison would provide information on the number of people benefiting from windfall gains as a result of a new financial incentive program and would enable the calculation of the amount of government spending that contributes to these windfall gains. These types of comparisons can also be used to compare how windfall gains change when the level of generosity of a financial incentive is changed.

The experiment addresses this issue in two ways. The first is relatively simple. Assuming that those who chose a $300 grant for full-time study (Decision 73) have already committed to full-time study over the next two years, and assuming that each subgroup of our sample is a reasonable representation of the same subgroup in the Canadian population, the proportion of participants by each subgroup who are already committed to full-time education is calculated. When these subgroups are aggregated according to their weights in the Canadian population, this indicates the level of participation that would be windfall gain. The level of those committed to full-time study can be compared with the proportion who take grants when they are offered at the more generous level of $1,000.

There are three problems with the assumption that each subgroup of the sample is a reasonable representation of the same subgroup in the Canadian population. The census, from which the population weights were drawn, allows individuals to choose more than one main activity. The ramification for our study is that approximately 30 per cent of those who reported on the census that they were part-time workers also reported that they were students. It can be assumed that some of the students in our sample were also part-time employed, but here they all are counted in the "Other" category (neither full-time employed nor part-time employed, nor unemployed). The result is that this sample has more students in the "Other" category than the Canadian population does. The second problem, which was mentioned earlier, is that our participants were on average of higher mathematical competency than the Canadian population. This will bias the results upwards, indicating a higher uptake for full-time study than would a fully representative sample. A further complication is added when considering high school students; they have not been included. Given the number of high school students in the sample, and the difference in their behaviour from the rest of the sample, it was decided to keep them out of the 18–24 age category of "Other." They have been treated separately in the analysis and not included in the weighted observations.

Table A.5 in the Appendix summarizes the proportion of all participants choosing educational compensation by age group, sex, and labour market attachment. Using the

weights for the Canadian population, summarized in Table A.6 for these subgroups, the proportion of the Canadian population committed to education, as indicated by acceptance of a $300 grant for full time studies, is 14.75 per cent. Comparing this with an estimated take-up of 29.19 per cent for a $1,000 grant, increasing the grant in this fashion, increases the proportion that would choose it by 97.9 per cent. Ignoring the problems associated with weighting the sample in the manner described above, 14.75 per cent of the out-of-high-school population would enjoy a $700 windfall if grants were increased from $300 to $1,000. In short, offering a grant three times as generous as the original grant doubles the take-up rate of the grant and increases the amount granted sixfold.

The second method of addressing this issue is to calculate the elasticity of demand for a $1,000 full-time education grant using the prices from decisions 75 through 78 ($100, $50, $200, and $475, respectively) and the weighted proportion of participants who took the grants. Tables A.5 and A.6 have all the relevant values to make this calculation. Those participants who give up the most, in this case $475, indicate a willingness to endure much of the cost of education themselves. Because there were four data points for each subgroup, it is possible to estimate three different elasticities for each subgroup. Between each pair of prices and corresponding quantities, rough elasticities are calculated by the midpoint method.[11] Table A.7 in the Appendix summarizes all of these elasticities. The values from Table A.6 are used to weight elasticities in Table A.7; the resulting calculated elasticities for the total population are summarized in Table 9.

Table 9: Weighted Elasticities of Demand for $1,000 Grants for the Entire Population (Excluding High School Students)

Decision	Grant Amount	Price of $1,000 Grant	Weighted Elasticity
76	$1,000	$50	
			-0.105
75	$1,000	$100	
			-0.740
77	$1,000	$200	
			-0.829
78	$1,000	$475	

Remembering that the elasticity is simply the percentage change in demand given the percentage change in price, an elasticity of zero means that demand is not affected by changes in price. Elasticities greater than one mean that demand is very responsive to changes in price, meaning that a small percentage change in price will trigger a relatively larger percentage change in quantity demanded. Demand with elasticities of less than one, which is the case here, means that the percentage change in the price is answered by a relatively smaller percentage change in the demand. This means that continued increases in subsidy will be met with smaller percentage increases in demand.

The weighted elasticities in the last column of Table 9 indicate that elasticity shrinks as the funding becomes more generous. The elasticity that most simulates the demand facing a standard grant scheme would be the elasticity calculated between corresponding quantities and prices for decisions 76 and 75. Here the participants have to give up $50 (Decision 76) or

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[11]The elasticity of demand by the midpoint method: $\eta = \%\Delta Q / \%\Delta P = ((Q_2-Q_1)/(Q_2+Q_1)/2) / ((P_2-P_1)/(P_2+P_1)/2)$.

$100 (Decision 75) to receive a $1,000 grant for full-time study. The elasticity of -0.105 means that a decrease in price of 10 per cent would increase the quantity demand by only 1.05 per cent. Further down the demand curve, where education is more expensive, the relationship is still one of relative inelasticity, but the values are less extreme. For an elasticity of -0.83, for every 10 per cent reduction in the price of the grant, the quantity demanded of $1,000 grants would increase 8.3 per cent.

Elasticities calculated using data from the sample of high school students are summarized in Table 10. They follow much the same pattern of the adults. The male students seem to be less responsive to price than the female students in the low price ranges, and more responsive than the females in the higher ranges. However, as there are only 80 high school students in the sample, this behaviour may not be representative of most high school students.

Table 10: Elasticities of Demand for the High School Population

Decision	Grant Amount	Price of $1,000 Grant	Price of Grant	Weighted Elasticity	
				Male	Female
76	$1,000	$50	$ 1/20		
				-0.042	-0.148
75	$1,000	$100	$ 1/10		
				-0.134	-0.702
77	$1,000	$200	$ 1/5		
				-0.509	-0.307
78	$1000	$475	$ 475/1,000		

These generated values are limited in their application because students do not usually pay for grants. In this study, the cash alternatives to the grants were offered to allow participants to reveal how much they were willing to forgo to obtain educational funding. In this sense, these elasticity measures are general sensitivity measures. They illustrate that participants were responsive, but not overly responsive, to large changes in the price of relatively small grants.

The next section addresses the last question posed of the study. Do barriers — lack of information, lack of time, fear of failure, impatience, risk aversion, readiness to learn, and loan aversion — prevent adults from investing in formal learning activities, and what is their impact on the investment decision?

5. Barriers to Education

While many Canadian adults participate in formal education activities, many more do not participate. The factors that promote or inhibit adult participation in education have been the subject of significant research over several decades. Those factors that inhibit participation can be termed as barriers, constraints, deterrents, impediments, or obstacles. The term barrier will be used throughout this report.

BARRIER FRAMEWORK

Research on barriers to adult education participation in Canada has enumerated a large number of possible obstacles to participation. A variety of conceptual frameworks have been used to model the decision to invest in education and the barriers to that decision (National Center for Education Statistics, 1998). In her influential work, *Adults as Learners*, Patricia Cross (1981) classifies barriers to adult education in three categories:

1. Situational barriers: those arising from one's situation in life at a given time, for example, home responsibilities, work, income.

2. Institutional barriers: all those practices and procedures that exclude or discourage working adults from participating in educational activities, for example, requirement to begin the program, inconvenient schedule, or location.

3. Dispositional barriers: those related to attitudes and self-perceptions about oneself as a learner, for example, attitudes towards education, past learning experience, enjoyment of learning activities.

This framework has proved useful in assessing the relative importance of groups of barriers. In analysis of the Adult Education and Training Survey (AETS), one of Canada's most important sources of data on individual participation in formal adult education and training, this framework has been utilized to analyze barriers to participation and has highlighted the importance of situational and institutional barriers such as lack of time and the cost of education (Rubenson, 2001). The AETS and other survey approaches to barriers are limited, however, in their assessment of the dispositional barriers that can impede the investment decision. The real importance of dispositional barriers is probably underestimated in survey data. In contrast, the present experiment provides greater capacity to assess the dispositional barriers to adult participation and shed light on the true, relative importance of these barriers.

Analysis of data from the experiment uses the three core instruments — the compensated decision questions, the questionnaire, and the numeracy assessment — to compile a listing of barriers to participation assessed during the experiment. These are then classified according to situational, institutional, and dispositional barriers. While the majority of barriers can be grouped under these three headings without difficulty, some could easily fall in more than one category. While in such cases assignment of items to categories may be rather arbitrary, consideration has been given to placing each barrier in the category that seems most direct

and straightforward. Table 11 summarizes the barriers measured in the three experiment instruments, which can be considered for analysis.

Table 11: Barriers to Education

Barrier Type	Variable	Data Source
Basic/Control	Employer pays for education	Survey
	Age	Survey
	Sex	Survey
	Mathematical competency low[a]	Numeracy assessment
	Mathematical competency median[b]	Numeracy assessment
	Mathematical competency high[c]	Numeracy assessment
Dispositional	Willingness to save (40 choices of time preference)	Experimental measure
	Risky decisions (10 choices of monetary risk)	Experimental measure
	Planning ability[d]	Survey
	Locus of control[e]	Survey
	Saved for PSE — Someone in family has saved for post-secondary education	Survey
	Parent HS/Tech — 1 parent has completed high school, college, or technical school	Survey
	Parent University — 1 parent has completed university	Survey
	Positive attitude about education and labour market[f]	Survey
	Claudia — Positive attitude to education for others[g]	Survey
	School performance — Self-reported past academic success	Survey
	Peers liked in school	Survey
	Likes school	Survey
	Wanted to take a course in past 12 months	Survey
Situational	No children	Survey
	Married	Survey
	Non-urban resident	Administrative data
	Unemployed	Survey
	Part-time employed	Survey
	Full-time employed	Survey
	Not working (parental leave, disability, etc.)	Survey
	PSE experience — Has been enrolled in post-secondary education in the past	Survey
	Recent student — Engaged in education in past 12 months	Survey
	Current post-secondary education student	Survey
	Has student debt	Survey
	Feels burdened by debt	Survey
	Current debt — Current household spending exceeds income	Survey
	Household income low — Household income under 30K	Survey
	Household income medium — Household income between 30K and 75K	Survey
	Household income high – Household income over 75K	Survey
	Language — preferred language of use is English	Survey
	Immigration status	Survey
	Young children at home — has children under 5 years of age in care	Survey
	Aboriginal	Survey
	Disability	Survey
	High market understanding — Labour market understanding	Survey

Table 11: Barriers to Education (Cont'd)

Barrier Type	Variable	Data Source
	Leisure TV — Amount of time spent on leisure activities	Survey
Institutional	Possesses educational prerequisites (high school diploma or high school equivalency)	Survey
	Province of residence (AB, BC, NS, ON)	Administrative data
	Knowledge of financial assistance (Knows government aid)	Survey

Notes: [a]Score lower than one standard deviation below median score.
[b]Score within one standard deviation of median score.
[c]Score higher than one standard deviation above median score.
[d]Measure derived from 21 questions concerning temporal orientation, future or present. Planning ability is defined so that a higher value indicates the participant is willing to forego current enjoyment for future enjoyment.
[e]Locus of control measure so defined that a lower value indicates that the participant has strong feelings of self-efficacy.
[f]Measure based on four questions regarding participant's attitude towards education and outcomes in the labour market. Higher values indicate that the participant believes, in general, that investment in education increases expected life-time earnings.
[g]Measure based on a series of questions in which participants indicated their beliefs about a third party's educational investment.

Of the barriers considered in the design of the experiment, almost all, to some degree — lack of time, fear of failure, time preference, readiness to learn, lack of information — can be incorporated in the following analysis using the results of a series of decisions to invest in education with grants. [11] Loan aversion requires a different orientation, however, and will be analyzed separately. The "lack of information" barrier, although touched on here, will also be analyzed separately later in this section. All of this analysis will be summarized in the final section of the report according to the research questions originally established for this research project (as summarized in Section 2).

As a reminder, the questions to be addressed in this section using the variables listed in Table 11 are

- **Lack of time**: To what extent do daily responsibilities, family or work-related, represent a major barrier to education and training?

- **Loan aversion**: Does loan aversion exist? How does it influence the investment decision? Can certain type of financial incentives help more than others?

- **Fear of failure**: Does lack of self-confidence or fear of failure play any role in the decision to participate in education or training?

- **Time preference**: To what extent does preference for the present affect investment decisions? Are certain types of financial incentives more appropriate for individuals who are more impatient?

- **Readiness to learn**: Do individuals choosing to invest in education or training have the ability or sufficient qualifications to benefit from adult education?

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[11]A modified, shortened time-use survey was incorporated in the design of the survey to capture the elements necessary to determine if "lack of time" was indeed a significant barrier. The data from this probe require far more work before they can be incorporated into any analysis. One piece of this data that did not require extensive cleaning was the amount of time spent watching TV (Leisure TV), so it is included here. A few of the situational variables — for instance, full-time employed, unemployed, young children at home — point to the amount of time a participant has for education and training.

- **Lack of information**: How do perceived rates of return on education (the expected increase in life-time earnings resulting from the investment) compare with actual rates of return? Does the availability of labour market information modify behaviour?

In the analysis of general barriers to education, high school students were analyzed separately. In the experiment, participants had the opportunity to reveal their preference for education through 28 independent decisions. The first analysis focuses on the most straightforward of these decisions, the decision to invest in education when financed by a grant.

Consider five categories of investment preference for human capital: *no* preference for investment, *little* preference for investment, *some* preference for investment, *strong* preference for investment, and *very strong* preference for investment. The latent variable IE_i^* captures the preference of individual i to invest in his or her own education. The following ordered probit has been estimated in a stepwise fashion using a number of barrier characteristics, grouped by barrier type, listed in Table 11 as independent variables:

$$IE_i^* = X_i\beta + \varepsilon_i$$

The preference for human capital investment is not directly observed; but whether the subjects have chosen education when faced with three different trade-offs between cash and educational expenses has been observed. As a reminder, each subject made these four choices during the experiment: $50 in cash or $1,000 in full-time educational expenses, $100 in cash or $1,000 in full-time educational expenses, $200 in cash or $1,000 in full-time educational expenses, and $475 in cash or $1,000 in full-time educational expenses. Let the observed counterpart of the latent variable IE_i^* be defined as

$IE_i = 0$ if a participant never chose education for any trade-off;

$IE_i = 1$ if education was chosen when $50 was the cash alternative;

$IE_i = 2$ if education was chosen by the participant when $100 was the cash alternative;

$IE_i = 3$ if $200 was the cash alternative; and finally,

$IE_i = 4$ if education was always the revealed choice of the participant for any offer of cash.

Assuming the error term is standard normally distributed, $\varepsilon_i \sim N(0,1)$, then the probability of participant i never choosing education is

$$\Pr(IE_i = 0) = \Pr(IE_i^* \le \delta_0) = \Pr(\varepsilon_i \le \delta_0 - X_i\beta) = \int_{-\infty}^{\delta_0 - X_i\beta} f(\varepsilon)d\varepsilon$$

The probability of participant i choosing a $1,000 human capital investment only when a $50 cash alternative is offered is

$$\Pr(IE_i = 1) = \Pr(\delta_0 \le IE_i^* \le \delta_1) = \Pr(\delta_0 - X_i\beta \le \varepsilon_i \le \delta_1 - X_i\beta) = \int_{\delta_0 - X_i\beta}^{\delta_1 - X_i\beta} f(\varepsilon)d\varepsilon$$

The probability of choosing education only when there is a $100 cash alternative is

$$\Pr(IE_i = 2) = \Pr\left(\delta_1 \le IE_i^* \le \delta_2\right) = \Pr\left(\delta_1 - X_i\beta \le \varepsilon_i \le \delta_2 - X_i\beta\right) = \int_{\delta_1 - X_i\beta}^{\delta_2 - X_i\beta} f(\varepsilon)d\varepsilon$$

Similarly, the probability of choosing education only when there is a $200 cash alternative is

$$\Pr(IE_i = 3) = \Pr\left(\delta_2 \le IE_i^* \le \delta_3\right) = \Pr\left(\delta_2 - X_i\beta \le \varepsilon_i \le \delta_3 - X_i\beta\right) = \int_{\delta_2 - X_i\beta}^{\delta_3 - X_i\beta} f(\varepsilon)d\varepsilon$$

And finally, the probability of participant i always choosing education is

$$\Pr(IE_i = 4) = \Pr\left(\delta_3 \le IE_i^*\right) = \Pr\left(\delta_3 - X_i\beta \le \varepsilon_i\right) = \int_{\delta_3 - X_i\beta}^{\infty} f(\varepsilon)d\varepsilon$$

For all probabilities to be positive, there must be $\delta_0 < \delta_1 < \delta_2 < \delta_3$. The δs are unknown parameters to be estimated with β. The estimation results for the ordered probit are reported in Table 12 for the adult sample and in Table 13 for the high school sample. Full specification results are summarized in tables A.9 and A.11 in the Appendix.

The ordered probit results are presented in a stepwise fashion, categories of barriers to participation are added one at a time, log likelihood tests are performed. The results for the adult participants (Table 12) show that each category of barriers added explanatory power to the analysis except the institutional category (although it should be noted that few institutional factors are measured or accounted for in this analysis). However, we can conclude that dispositional and situational barriers do indeed play a major role in the determination of preference for education.

Among the basic variables, individuals who have subsidized educational expenses in the workplace are less likely to accept a $1,000 grant for full-time study. Older individuals have a lower probability of investing in education than the younger adults in the study. The dispositional factors, such as willingness to save, saved for education, and positive attitude, are very robust and are associated with a greater likelihood of investing in education. Individuals who are married are less likely to pursue full-time studies.

High school students are simpler to examine because many of the situational factors that affect adult behaviour are much less likely to exist for them in general (e.g. being married, full-time employed). Note in Table 13, which summarizes the high school ordered probit, that both the situational and institutional variables have no significance. This is partly because many situational and institutional variables that describe adults do not apply to most high school students.[12] High school students who perform relatively well on the numeracy assessment have a higher probability of preference for education. This effect dissipates, however, as other factors are added to the analysis. (This relationship will be revisited at the end of the section.) As in the adult population, two dispositional factors — willingness to save and having a positive attitude — increases the likelihood of investing in education. High schoolers who plan for the future are more likely to invest in education. Likewise, having a positive attitude about a third party's educational investment, as elicited from questions about Claudia's investment in a university degree, increases the likelihood of investment.

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[12]For example, the only institutional variable with any meaning for high school students was Knows government aid.

Table 12: Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Basic/Control variables[a]								
Employer pays	**-0.738** ***	**-4.23**	**-0.799** ***	-4.43	**-0.597** **	-3.04	**-0.587** **	-3.00
Age 18–24	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Age 25–44	**-0.912** ***	-8.63	**-0.895** ***	-8.09	**-0.459** ***	-3.42	**-0.464** ***	-3.41
Age 45 and older	**-1.250** ***	-9.43	**-1.301** ***	-9.26	**-0.841** ***	-5.06	**-0.843** ***	-4.97
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	-0.088	-0.70	**-0.313** *	-2.33	**-0.266**	-1.87	**-0.292** *	-2.04
Mathematical competency high	0.028	0.18	**-0.395** *	-2.31	**-0.348**	-1.89	**-0.383** *	-2.06
Dispositional variables[b]								
Willingness to save			**0.025** ***	5.23	**0.025** ***	5.11	**0.024** ***	4.87
Saved for post-secondary education			**0.325** **	3.03	**0.319** **	2.81	**0.312** **	2.73
Positive attitude about education and labour market			**0.084** **	2.98	**0.079** **	2.68	**0.077** **	2.60
Liked school			**0.242** *	2.26	0.147	1.32	0.143	1.28
Situational variables[c]								
Married					**-0.226**	-1.95	**-0.225**	-1.93
Post-secondary student					**1.154** ***	5.54	**1.175** ***	5.58
Institutional variables[d]								
AB							**-0.409**	-1.81
δ_0	-0.520	-3.54	1.118	2.14	1.253	2.10	1.108	1.75
δ_1	-0.409	-2.79	1.234	2.36	1.379	2.31	1.235	1.95
δ_2	-0.127	-0.87	1.537	2.94	1.712	2.87	1.571	2.48
δ_3	0.275	1.88	1.976	3.76	2.210	3.69	2.072	3.27
Log likelihood	-843.117		-811.329		-765.294		-762.838	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.9 in the Appendix.

[a]Never significant: Male.

[b]Never significant: Risky decisions, Planning ability, Locus of control, Parent HS/Tech, Parent University, School performance, Peers liked school.

[c]Never significant: Post-secondary education experience, Hold diploma, No children, Non-urban resident, Unemployed, Part-time employed, Full-time employed, Current student debt, Burdened by debt, Household Income low/medium/high, Immigrant, Has children under 5 years of age, Disabled, Good market understanding, Leisure TV.

[d]Never significant: High school diploma, High school equivalency, ON, BC, NS, Knows government aid.

Table 13: Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 80 Observations, High School Students)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Basic/Control variables[a]								
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	**0.673** *	2.30	-0.049	-0.13	-0.111	-0.27	-0.142	-0.34
Mathematical competency high	0.901	1.46	0.251	0.36	0.244	0.33	0.222	0.29
Dispositional variables[b]								
Willingness to save			**0.063** **	2.99	**0.074** ***	3.26	**0.076** ***	3.23
Planning ability			**0.043** ***	3.72	**0.043** ***	3.51	**0.043** ***	3.49
Positive attitude about education and labour market			**0.155**	1.68	**0.185**	1.80	**0.198**	1.81
Claudia			**0.590** *	2.04	0.473	1.43	0.455	1.36
Situational variables[c]								
Institutional variables[d]								
δ_0	-0.449	-1.60	5.053	2.80	5.013	2.56	5.045	2.56
δ_1	-0.295	-1.07	5.261	2.91	5.228	2.67	5.260	2.67
δ_2	0.313	1.13	6.140	3.36	6.135	3.10	6.171	3.10
δ_3	0.860	2.97	7.035	3.77	7.090	3.51	7.128	3.51
Log likelihood	-108.898		-83.083		-80.005		-79.952	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.11 in the Appendix.

[a]Never significant: Male.

[b]Never significant: Risky decisions, Saved for PSE, Locus of control, Parent HS/Tech, Parent university, School performance, Peers liked school.

[c]No variables significant: Burdened by debt, Current debt, Household income low/medium/high, Good market understanding, leisure TV

[d]One variable not significant: Knows government aid.

For both samples, the threshold parameters δ_1, δ_2 and, δ_3 are mostly statistically significant and positive after the dispositional factors have been introduced. This means that different relative costs of the $1,000 grant induce different response rates. If these coefficients were not significant, that would imply that the target population is insensitive to differences in relative costs.

A subset of the probabilities generated from the full specifications (Tables A.9 and A.11) is listed in Tables 14 and 15. A full set of probabilities for the adult and high school samples can be found in the Appendix in Tables A.10 and A.12. Adults who are most willing to save have a 47 per cent average probability of *never* investing in education, while those who are least willing to save have a 74 per cent average probability of *never* investing in full-time studies.

Table 14: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students)

		Mean Prob($IE_i = 0$)	Mean Prob($IE_i = 1$)	Mean Prob($IE_i = 2$)	Mean Prob($IE_i = 3$)	Mean Prob($IE_i = 4$)
Employer pays		0.8414	0.0228	0.0481	0.0447	0.0430
Employer does not pay		0.6018	0.0376	0.0912	0.1071	0.1622
Age 18–24		0.3319	0.0362	0.1005	0.1506	0.3808
Age 25–44		0.6790	0.0377	0.0880	0.0947	0.1007
Age 45 and older		0.7699	0.0322	0.0714	0.0695	0.0570
Least willing to save	save≤9	0.7426	0.0310	0.0702	0.0729	0.0833
Less than average willing to save	10≤save≤19	0.6587	0.0372	0.0879	0.0978	0.1185
More than average willing to save	20≤save≤29	0.5715	0.0384	0.0947	0.1142	0.1812
Most willing to save	30≤save	0.4672	0.0367	0.0944	0.1252	0.2765
Saved for post-secondary education		0.5683	0.0376	0.0929	0.1133	0.1880
Not saved for post-secondary education		0.7492	0.0329	0.0737	0.0740	0.0702
Positive attitude about education and labour market — low	posatt≤7	0.6771	0.0355	0.0834	0.0922	0.1118
Positive attitude about education and labour market — medium	8≤posatt≤9	0.6154	0.0369	0.0891	0.1043	0.1543
Positive attitude about education and labour market — high	10≤posatt	0.6094	0.0353	0.0854	0.1009	0.1691

Note: All probabilities are summarized in Table A.10 in the Appendix.

The effect is even more dramatic for high schoolers. High school students who are most willing to save have only a 1 per cent average probability of *never* investing and a 74 per cent average probability *always* investing. Positive attitude tells a similar story. Those with a good attitude are more than twice as likely to always invest in full-time education — 57.6 per cent (positive attitude high) compared with 24.5 per cent (positive attitude low).

Table 15: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (80 Observations, High School Students)

		Mean Prob(IE$_i$ = 0)	Mean Prob(IE$_i$ = 1)	Mean Prob(IE$_i$ = 2)	Mean Prob(IE$_i$ = 3)	Mean Prob(IE$_i$ = 4)
Least willing to save	save≤9	0.3643	0.0607	0.2678	0.2013	0.1059
Less than average willing to save	10≤save≤19	0.1948	0.0422	0.2188	0.2409	0.3032
More than average willing to save	20≤save≤29	0.0726	0.0185	0.1225	0.2058	0.5807
Most willing to save	30≤save	0.0094	0.0058	0.0648	0.1753	0.7448
Planning ability low	pa≤89	0.2752	0.0520	0.2490	0.2284	0.1954
Planning ability medium	90≤pa≤99	0.0634	0.0188	0.1359	0.2458	0.5362
Planning ability high	100≤pa≤109	0.0636	0.0157	0.1026	0.1907	0.6273
Planning ability very high	110≤pa	0.0392	0.0139	0.0889	0.1404	0.7175
Positive attitude about education and labour market — low	posatt≤7	0.2922	0.0440	0.2051	0.2135	0.2451
Positive attitude about education and labour market — medium	8≤posatt≤9	0.1727	0.0382	0.1949	0.2078	0.3865
Positive attitude about education and labour market — high	10≤posatt	0.0483	0.0179	0.1297	0.2281	0.5761

Note: All probabilities are summarized in Table A.12 in the Appendix.

Perhaps a more relevant question with regard to the adult population is what factors affect the willingness to participate in part-time studies. Table 16 summarizes the same ordered probit specification for intensity of preference for part-time education that was used for full-time education above. As before, the full specification can be found in the Appendix.

Table 16: Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Basic/Control variables[a]								
Employer pays	**-0.453*****	-3.38	**-0.506*****	-3.66	**-0.412****	-2.76	**-0.419****	-2.79
Age 18–24	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Age 25–44	**-0.569*****	-5.62	**-0.536*****	-5.05	**-0.313***	-2.47	**-0.324***	-2.53
Age 45 and older	**-0.817*****	-6.80	**-0.872*****	-6.87	**-0.602*****	-4.00	**-0.621*****	-4.04
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	**0.303****	2.61	0.060	0.48	0.074	0.57	0.069	0.52
Mathematical competency high	**0.516*****	3.62	0.046	0.29	0.039	0.23	0.036	0.21

(continued)

Table 16: Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Dispositional variables[b]								
Willingness to save			**0.037*****	8.45	**0.038*****	8.36	**0.036*****	7.97
Saved for post-secondary education			**0.174**	1.88	0.135	1.39	0.132	1.35
Planning ability			-0.004	-1.31	**-0.006**	-1.74	-0.005	-1.60
Parent high school/tech			**0.159**	1.84	0.142	1.62	0.136	1.53
Positive attitude about education and labour market			**0.063***	2.47	**0.065***	2.45	**0.066***	2.50
Situational variables[c]								
Post-secondary education experience					0.228	1.64	**0.252**	1.71
No children					**0.337****	2.68	**0.309***	2.42
Married					**-0.222***	-2.19	-0.208	-2.04
Unemployed					**0.411****	2.63	**0.421****	2.68
Post-secondary student					**0.801*****	4.08	**0.827*****	4.18
Part-time employed					**0.620*****	4.07	**0.642*****	4.19
Full-time employed					0.187	1.23	0.206	1.35
Neither in labour market nor student					*ref*	*ref*	*ref*	*ref*
Immigrant					**0.450****	2.46	**0.442***	2.41
Has children under 5 years of age					0.331	2.12	**0.333***	2.11
Disabled					0.140	1.53	**0.206**	1.87
Institutional variables[d]								
High school equivalency							**-0.394**	-1.76
ON							**-0.346**	-1.78
AB							**-0.516***	-2.47
δ_0	-0.587	-4.21	0.354	0.75	1.013	1.89	0.651	1.15
δ_1	-0.439	-3.16	0.510	1.08	1.177	2.20	0.818	1.44
δ_2	-0.054	-0.39	0.924	1.97	1.613	3.01	1.258	2.22
δ_3	0.410	2.95	1.433	3.04	2.149	3.99	1.798	3.17
Log likelihood	-1,114.330		-1,064.768		-1,031.769		-1,025.485	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.13 in the Appendix.

[a]Never significant: Male.

[b]Never significant: Risky decisions, Locus of control, Parent university, School performance, Peers liked school, Liked school.

[c]Never significant: Hold diploma, Non-urban resident, Full-time employed, Current student debt, Burdened by debt, Current debt, Household income low/medium/high, Good market understanding, Leisure TV.

[d]Never significant: High school diploma, BC, NS, Knows government aid.

Overall, for adults, more factors come into play for part-time education decisions than for full-time education decisions. As with full-time studies, having access to an employer subsidy for training and being in an older age group are associated with lower preferences for part-time study. Comparing the probabilities of pursuing full-time and part-time education, Tables 14 and 17, those participants 25–44 years old have an average probability of 67.9 per cent of never accepting funding for full-time education, and 41.3 per cent of never accepting funding for part-time education. This age group is also 60 per cent more likely to accept grants for part-time study than for full-time study.

Table 17: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (801 Observations, No High School Students)

		Mean Prob($IE_i = 0$)	Mean Prob($IE_i = 1$)	Mean Prob($IE_i = 2$)	Mean Prob($IE_i = 3$)	Mean Prob($IE_i = 4$)
Employer pays		0.5568	0.0546	0.1313	0.1217	0.1357
Employer does not pay		0.3728	0.0529	0.1434	0.1617	0.2692
Age 18–24		0.2061	0.0425	0.1308	0.1787	0.4419
Age 25–44		0.4131	0.0557	0.1473	0.1584	0.2255
Age 45 and older		0.5091	0.0563	0.1403	0.1367	0.1575
Least willing to save	save≤9	0.5839	0.0546	0.1294	0.1162	0.1159
Less than average willing to save	10≤save≤19	0.4320	0.0580	0.1509	0.1570	0.2020
More than average willing to save	20≤save≤29	0.2837	0.0519	0.1501	0.1840	0.3302
Most willing to save	30≤save	0.1945	0.0399	0.1235	0.1722	0.4699
Positive attitude about education and labour market — low	posatt≤7	0.4497	0.0534	0.1392	0.1476	0.2101
Positive attitude about education and labour market — medium	8≤posatt≤9	0.3844	0.0535	0.1440	0.1600	0.2580
Positive attitude about education and labour market — high	10≤posatt	0.3637	0.0521	0.1415	0.1607	0.2820

Note: All probabilities are summarized in Table A.14 in the Appendix.

As with the high school students, math competency is a basic factor influencing adults' preference for part-time studies. Several situational variables increase the likelihood of participation (e.g. previous post-secondary education experience, having no children over 5 years of age, having no spouse, being disabled, being unemployed, and being employed part-time).

It is important to note that other factors, mentioned in the footnotes to Table 16, did not strongly influence the probability of investing in education. Those factors include household income, being a non-urban resident, and parental education. These data do not contradict previous findings that income and parental education are strongly correlated to educational choice. Those correlates exist here as well, but they do not appear in this multivariate analysis. New measures of behaviour are included in these models in attempting to understand the relationship between intensity of preference for education and the determining factors. The relationship between these measures and other well-known determinants is still being investigated. In models to come, household income does come into play for the

preference for loans, as does being a non-urban resident. It is not inconsistent with other work that this model has no correlation between intensity of preference for $1,000 grants and being a non-urban resident. Frenette (2003) also finds that modest geographic distances do not necessarily affect the level of participation. Although Frenette does find that geographic distances can affect the type of post-secondary education taken, this distinction is beyond the scope of this study as we did not ask participants what their particular post-secondary plans were.

Before turning to the question of loan aversion it is useful to summarize the insights gained thus far:

- **Lack of time**: Those who do not have full-time commitment to work — those who are unemployed or part-time employed — have a higher probability of accepting grants for education than those who do not work (neither in the labour market nor a post-secondary education student). The preferences of those who are employed full-time are indistinguishable from those who do not work.

- **Fear of failure**: There is no evidence to support the belief that low self-efficacy (Locus of control) or avoiding risky monetary situations (Risky decisions) play a role in the decision to participate in education or training.

- **Time preference**: An individual's willingness to forego current consumption for future gain (Willingness to save) is a significant factor for high school students as well as for adults in the determination of the probability of investing in education and training.

  Also, to a lesser extent for adults, their attitude about planning, appointments, and commitment (Planning ability) also played a significant part in the decision.

- **Readiness to learn**: Table 13 shows that mathematical competency for high schoolers is a significant factor in the decision to invest in education. When willingness to save is incorporated into the model of investment for high schoolers and adults, the impact of this factor changes. In the high school model, numeracy no longer plays a role once willingness to save is introduced, and in the adult model, the impact is actually negative. More work is warranted to understand better the relationships between these variables.

- **Lack of information**: Individuals, adults, and high schoolers, who perceive a positive rate of return to education are far more likely to invest in education than those who do not. This variable as well as a treatment that attempts to modify labour market information is investigated further in the last subsection of this section.

Loan Aversion

Does loan aversion exist? How does it influence the education investment decision? Who is particularly affected? Can certain types of financial incentives help more than others?

There is contradictory evidence on the influence of loan aversion on the human capital investment decision (Andrews, 1999). As stated earlier, loan aversion stems from two distinct aversions: loss aversion and debt aversion. Debt aversion is the tendency to avoid debt in financial decision-making and loss aversion is the tendency in decision-making to be more sensitive to losses than to gains.

Two sets of loan questions were used in an attempt to disentangle debt aversion from loss aversion. They are presented in Table 1. The loan and ISR loan choice questions are identical except for the income-sensitive repayment option in the ISR loans. In other words, the only difference between the two loan options is the way that ISR loans insure participants against having to make loan payments if their post-education income levels are too low. The two sets of questions were so designed as to distinguish behaviour between those who were only loss-averse and those who were debt-averse. There would be a tendency for loss-averse persons, who were not also debt averse, to select ISR loans more frequently than regular loans.

The experiment did not reveal that individuals were more willing to take ISR loans than regular loans at the $1,000 and $2,000 levels of debt. That is, the proportion of participants who took regular loans was indistinguishable from the proportion of participants who took ISR loans. In short, this line of inquiry does not help distinguish between those who were only loss-averse. If anything, the lack of results indicate that for low levels of loans, any loss aversion related to taking a loan is negligible or that the loss aversion is not distinguishable from any debt aversion that may or may not exist.

To examine further if there is any evidence of debt aversion, three types of analysis were performed. The first was to investigate those who took up loans to see how they differed from those who took only grants. A bivariate probit was used for this purpose. Because of the relative price differences between loans and grants, it is difficult for this analysis to speak directly to the question about loan aversion. These results could confirm that some individuals are more price-sensitive than others, not that an individual is loan-averse. To address the problem of relative price differences, the second type of analysis was to compare the responses to offers of ISR loans with the responses to offers of a 20 per cent matching grant for both full-time and part-time study. Already, as shown in Figure 9, some participants tended to pick matching grants much more readily than ISR loans for comparable levels of support. As these two decisions are more comparable in terms of relative prices, this analysis has the potential to point to the presence of debt aversion. In addition, the survey included a series of questions that attempted to measure the respondents' willingness to endure debt, the self-reported level of existing debt, and income levels. These data were used to perform further analysis of the relationship between debt and the preference for education financed by loans. Lastly, in an attempt to examine behaviour at higher debt levels, the choices of a small subset of participants who were asked to make two additional decisions, both with $5,000 in debt as an option, were examined.

Grant and Loan Behaviour

The analysis begins with those participants who accept grants, and those who accept loans conditional on their grant behaviour. Formally, consider an individual i who must choose between two alternatives: a grant of $1000 or a cash alternative of $50. For a given individual i, $i = 1, ..., N$, the net utility of choosing the grant over the cash alternative can be expressed as a sum of two components:

$$E_g^* = \beta' X_g + \varepsilon_g, \tag{6}$$

where X_g denotes the observed component which is a known function of the characteristics and socio-economic background of the individual, as well as some environmental variables; and ε_g is an unobserved random component.

Of course, this utility is unobservable. However, the choice of education or cash is observable. Define the binary outcome of education over cash as

$$E_g = \begin{cases} 1, & \text{if } E_g^* > 0 \\ \\ 0, & \text{otherwise} \end{cases} \tag{7}$$

Thus education is chosen over cash if the net utility of education is positive. In the next decision, conditional on having chosen the educational grant or not, individual i chooses a loan over the cash alternative. Formally

$$E_l = \begin{cases} 1, & \text{if } E_l^* > 0 \\ \\ 0, & \text{otherwise} \end{cases} \tag{8}$$

Again, $E_l^* = \alpha' X_l + \varepsilon_l$ is the net utility of choosing the loan option over cash.

It is likely that the unobserved components ε_g and ε_l are correlated. To deal with this problem, the error components are assumed to be drawn from a bivariate normal distribution, with a correlation coefficient η : ε_g , $\varepsilon_l \sim N(0,0,1,1,\rho)$.

Four categories of observation are made with unconditional probabilities, where Φ_2 is a bivariate normal standard cumulative distribution function.

$$\begin{aligned} E_g = 1, E_l = 1 &: \Pr{ob}(E_g = 1, E_l = 1) = \Phi_2\left[\beta'X_g, \alpha'X_l, \rho\right] \\ E_g = 1, E_l = 0 &: \Pr{ob}(E_g = 1, E_l = 0) = \Phi_2\left[\beta'X_g, -\alpha'X_l, -\rho\right] \\ E_g = 0, E_l = 1 &: \Pr{ob}(E_g = 0, E_l = 1) = \Phi_2\left[-\beta'X_g, \alpha'X_l, -\rho\right] \\ E_g = 0, E_l = 0 &: \Pr{ob}(E_g = 0, E_l = 0) = \Phi_2\left[-\beta'X_g, -\alpha'X_l, \rho\right] \end{aligned} \tag{9}$$

The corresponding log-likelihood function is summing over all individuals in the sample:

$$
\begin{aligned}
&\sum_{E_g=1, E_l=1} \ln \Phi_2 \left[\beta'X_g, \alpha'X_l, \rho \right] \\
&+ \sum_{E_g=1, E_l=0} \ln \Phi_2 \left[\beta'X_g, -\alpha'X_l, -\rho \right] \\
&+ \sum_{E_g=0, E_l=1} \ln \Phi_2 \left[-\beta'X_g, \alpha'X_l, -\rho \right] \\
&+ \sum_{E_g=0, E_l=0} \ln \Phi_2 \left[-\beta'X_g, -\alpha'X_l, \rho \right]
\end{aligned}
\tag{10}
$$

Equation (10) is maximized with respect to the parameters β, α and ρ to obtain maximum likelihood estimates.

The interpretation for the bivariate probit is the same as for the simple probit. The benefit of using this specification is that the bivariate probit ensures the coefficients are correctly estimated without biases.

Table 18 summarizes the bivariate probit. The coefficients in the first portion of Table 18 indicate the direction of the probability of investing in any education when financed by grant. The participants in the experiment study were less likely to invest in education when financed by grant if they were 25 years of age or older or were men from non-urban areas. They were more likely to accept grants if they demonstrated a willingness to save, had labour force attachment other than full-time employed (i.e. were unemployed or employed part time), or were already post-secondary students as compared with those participants who were not in the labour force or were already engaged in schooling.

Participants were more likely to use loans to finance education if they were in the lower income group of the study (income < $30,000), were willing to save, had a history of slow payment (two months or more behind on bills), and had co-signed a loan for someone else. Factors that decreased the likelihood of using loans to finance education were being a non-urban male and having a relatively large number of credit cards.

Although high school students were included in the analysis summarized in Table 18, a separate analysis, not included here, was performed on the high school student sample alone. As with adults, being from a household with lower income also made these students more likely to accept loans as a form of financial assistance.

Table 19 shows some of the joint probabilities of interest generated from the bivariate probit of grant and loan behaviour. Notice that the mean probabilities of accepting a loan and not accepting a grant are close to zero. Those with the lowest income are equally likely to finance their education by grant or by grant and loan. Those with higher income were twice as likely to accept grants only rather than grants and loans. Non-urban male residents (mean Prob(g=1, l=1) = 14 per cent) are 42 per cent less likely than urban males (mean Prob(g=1, l=1) = 24 per cent) to use loans and grants to finance education. As stated earlier, although these results offer some intuition, because of the large relative price differences, they cannot directly address the question about debt aversion.

Table 18: Determinants of Loan Behaviour Given Preference for Grants (Bivariate Probit ($1,000 Grant, Any Loans), 881 Observations)

Variables	Coefficients	t-stat
At least one grant is preferred over cash[a]		
Age 18–24	*ref*	*ref*
Age 25–44	**-0.338** *	-2.41
Age 45 and older	**-0.617** ***	-3.79
Non-urban resident x male	**-0.535** *	-2.20
Part-time employed	**0.505** ***	3.25
Full-time employed	0.206	1.36
Unemployed	**0.310** *	2.00
Post-secondary student	**0.713** ***	3.28
High school student	0.607	1.50
Neither in labour market nor student	*ref*	*ref*
Employer pays	**-0.475** **	-2.93
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	**0.267**	1.94
Mathematical competency high	**0.383** *	2.07
Willingness to save	**0.030** ***	6.15
Positive attitude about education and labour market	**0.053** *	1.99
At least one loan is preferred over cash[b]		
Household income low	0.290 *	2.40
Household income medium	*ref*	*ref*
Household income high	-0.020	-0.15
Non-urban resident x male	-0.617 **	-2.83
Willingness to save	0.024 ***	4.66
Number credit cards	-0.331 **	-3.12
Slow to pay	0.324 **	3.09
Co-signer	0.422 *	2.02
Constant	-1.255 ***	-4.86
Rho	0.759	18.36
Log likelihood	-878.540	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.17 in the Appendix.

[a]Not significant: Male, Household income, Married, no children, Non-urban resident, Hold diploma, No high school diploma or equivalency, Full-time employed, high school student, high school student x household income, Risky decisions, Planning ability, Parent High school/Tech, Parent university, Saved for post-secondary education, Recent student, Good market understanding, Leisure TV, Constant.

[b]Not significant: Male, Hold diploma, HS student, HS student x household income, Employer pays, Math competency, Risky decisions, Leisure TV.

Table 19: Calculated Probabilities of Loan Behaviour Given Preference for Grants (Bivariate Probit ($1,000 Grant, Any Loans), 881 Observations)

		Mean prob(grant=1, loan=1)	Mean prob(grant=1, loan=0)	Mean prob(grant=0, loan=1)	Mean prob(grant=0, loan=0)
Household income low		0.2923	0.3070	0.0350	0.3657
Household income medium		0.1940	0.3818	0.0139	0.4103
Household income high		0.2114	0.4436	0.0081	0.3369
Non-urban male resident		0.1393	0.3064	0.0231	0.5313
Urban male resident		0.2403	0.3795	0.0192	0.3610
Least willing to save	save≤9	0.1468	0.2774	0.0285	0.5473
Less than average willing to save	10≤save≤19	0.2194	0.3680	0.0221	0.3905
More than average willing to save	20≤save≤29	0.2688	0.4250	0.0135	0.2927
Most willing to save	30≤save	0.3387	0.4439	0.0109	0.2065

Note: All probabilities are summarized in Table A.18 in the Appendix.

20 Per Cent Matching Grant and Loan Behaviour

The take-up rate depicted in Figure 9 points to the presence of some loan avoidance. Some participants (post-secondary students and high school students) tend to choose low-valued matching grants much more readily than ISR loans for comparable levels of support. The second examination of debt aversion considers the behaviour of all participants, adults and high school students, using two separate analyses, one for funding of full-time education and the other for funding of at least part-time education to allow for a difference between funding choice and commitment to education.

When considering the matching grant and loan options available to the participants, the decisions can be separated into five mutually exclusive sets of choices:

1. Both types of loan and the 20 per cent matching grant

2. 20 per cent matching grant but no loans

3. Loans but no 20 per cent matching grant

4. A regular grant but neither a 20 per cent matching grant nor a loan

5. None of these forms of educational support

Define U_{ij} as the expected level of indirect utility for individual i choosing the alternative j, expressed as a linear function of observed variables (W), and an unobserved random component (ε) that reflects the idiosyncrasies of this individual's preferences for alternative:

$$U_{ij} = \alpha'_j W_i + \varepsilon_{ij}$$

U_{ij} is unobserved. However, the choice A_{ij} made by the individual is observed:

$A_{ij} = 1,$ if $U_{ij} \geq U_{ik}$ for all $j \neq k;$ $A_{ij} = 0,$ otherwise.

From random utility models and, if the residuals ε are independently and identically distributed with the Type 1 extreme-value (or Gumbell) distribution, a model of the discrete choice of the probability P_{ij} for individual i choosing alternative j can be derived:

$$P_{ij} = \Pr(A_{ij} = 1) = \frac{\exp(\alpha'_j W_i)}{\sum_{k=1}^{5} \exp(\alpha'_j W_i)}$$

The coefficients α differ for each alternative and a different constant term for each alternative is assumed. Given a new individual with specified characteristics, the probability that the individual will choose one of the five alternatives can be predicted. The significance of the α coefficient estimates must be interpreted with respect to a reference alternative. In these regressions, the reference alternative is choosing no educational funding, or the alternative five in the list above.

Certain coefficients form the multinomial analysis summarized in Table 20 merely confirm what was found in earlier results: older participants are less likely to make an education investment; students, those willing to save, and those with a positive attitude are more likely to invest.

Other factors, such as *risky decisions*, *planning ability*, and *burdened by debt* are significant depending on the behaviour chosen. Those participants who are willing to incur risk are less likely to finance their education through grants. Those with good planning ability are less likely to finance their education expenses through loans and grants exclusively. And those who are burdened by debt have a lower probability of using a matching grant. Unemployed and those employed full time are less likely to use the 20 per cent matching grant as a way of financing full-time education. Immigrants are more likely to use all forms of assistance. The three positive, statistically significant coefficients in Table 20 indicate that immigrants have a preference for loans and 20 per cent matching grants, loans and grants, and grants, but there is no indication of using the 20 per cent matching grant without also using loans (Alternative 2).

Note the mean probabilities summarized in Table 21. Those *burdened by debt* have only a 3 per cent probability of preferring the 20 per cent matching grant, while those *not* burdened by debt have a 12 per cent mean probability of preferring to finance education through a similarly priced non-debt instrument.

Table 20: Determinants of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations)[a]

	1. Loan and 20% Matching Grant		2. 20% Matching Grant and No Loans		3. Only Loans and No 20% Matching Grant		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Age 18–24	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Age 25–44	**-2.001*****	-4.03	**-2.196*****	-3.40	**-0.826***	-2.20	-0.271	-0.89
Age 45 and older	**-2.947*****	-4.54	**-3.453*****	-4.00	**-1.722*****	-3.58	**-0.852***	-2.45
Married	**-0.811**	-1.76	-0.662	-1.08	-0.174	-0.57	**-0.370**	-1.74
Immigrant	**1.623**	1.89	0.781	0.79	**1.771****	2.96	**1.625*****	3.23
Post-secondary education experience	0.793	1.08	**1.621**	1.65	-0.151	-0.35	0.018	0.06
Part-time employed	2.340	2.73	-0.629	-0.72	**0.930***	2.04	**1.563*****	4.63
Full-time employed	0.206	0.22	**-2.826****	-2.63	0.130	0.29	**0.901****	2.78
Disabled	0.614	1.28	0.309	0.55	**0.557**	1.69	0.348	1.47
Unemployed	1.418	1.59	**-1.631**	-1.68	0.457	1.01	**1.037****	3.06
Post-secondary student	**2.339***	2.37	**1.754***	1.98	**1.856****	3.08	**1.480****	2.87
High school student	2.403	1.79	2.237	1.57	1.218	1.27	1.021	1.32
Neither in labour market, disabled, nor student	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Employer pays	-0.520	-0.88	-0.986	-1.14	**-1.601***	-2.47	**-0.630***	-2.11
Risky decisions	0.003	0.03	-0.017	-0.14	0.081	1.22	**-0.086**	-1.75
Willingness to save	**0.119*****	6.49	**0.114*****	5.44	**0.051*****	3.71	**0.036*****	3.69
Positive attitude about education and labour market	**0.317****	2.92	0.103	0.84	**0.135**	1.77	0.062	1.09
Planning ability	0.005	0.36	0.021	1.43	**-0.016**	-1.70	**-0.014***	-2.08
Know government aid	0.184	1.25	-0.084	-0.48	0.160	1.46	**0.174***	2.27
Burdened by debt	0.462	1.29	**-0.806**	-1.65	0.196	0.73	0.305	1.58
ON	**-1.316**	-1.71	-0.191	-0.23	-0.488	-0.75	**-0.948***	-1.98
BC	-2.077	-2.20	-1.028	-1.07	-0.040	-0.06	**-1.137***	-2.17
NS	-0.641	-0.76	0.528	0.54	-0.422	-0.59	-0.700	-1.38
AB	**-1.498**	-1.76	**-1.972**	-1.89	-0.539	-0.80	**-1.610****	-3.16
QC/NF	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Constant	**-8.353*****	-3.51	**-5.368***	-1.98	**-2.849**	-1.73	0.322	0.27
Log likelihood	-936.702							

Reference: No education preference

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.19 in the Appendix.

[a]Never significant: Male, Household income, Has children under 5 years of age, Non-urban resident, Hold diploma, High school diploma, High school equivalency, High school student, Math competency, Risky decisions, Locus of control, Parent High school/Tech, Parent University, Saved for post-secondary education, Recent student, Good market understanding, Leisure TV, Current student debt, BC NS.

Table 21: Calculated Probabilities of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations)

	MeanP (Preference for Matching Grants and Loans)	MeanP (Preference for Matching Grants and Grants)	MeanP (Preference for Loans and Grants)	MeanP (Preference for Grants)	MeanP (Reference: No Preference for Education)
Age 18–24	0.1600	0.2160	0.1720	0.2920	0.1600
Age 25–44	0.0457	0.0251	0.1256	0.4201	0.3836
Age 45 and older	0.0363	0.0207	0.0829	0.3368	0.5233
Immigrant	0.0682	0.0455	0.2273	0.5227	0.1364
Non-immigrant	0.0765	0.0800	0.1243	0.3572	0.3620
Burdened by debt	0.0769	0.0282	0.1410	0.4000	0.3538
Not burdened by debt	0.0754	0.1181	0.1202	0.3381	0.3483

Note: All probabilities are summarized in Table A.20 in the Appendix.

A slightly enhanced story emerges when part-time education is examined. Again, age and willingness to save figure prominently as factors. Those with higher math competency are more likely to accept grants for education than those with lower scores. Good planning ability increases the likelihood that education will not be financed solely through grants, or loans and grants. Those burdened by debt are more likely to incur more debt for education and less likely to accept matching grants. The part-time employed accept all configurations of financing with higher probability, except for the short-term most expensive option — the 20 per cent matching grant.

Table 22: Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations)[a]

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Age 18–24	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Age 25–44	**-1.837** ***	-3.78	**-1.767** ***	-2.82	-0.367	-1.04	-0.334	-1.08
Age 45 and older	**-2.037** ***	-3.66	-37.283	0.00	**-1.172** **	-2.71	**-0.909** *	-2.54
Married	-0.407	-1.01	**-1.233**	-1.74	**-0.596** *	-2.13	-0.230	-1.05
Immigrant	1.251	1.49	1.009	0.96	**1.891** ***	3.32	**1.574** **	3.08
Part-time employed	**1.471** *	2.30	0.939	0.72	**1.125** **	2.72	**1.518** ***	4.36
Full-time employed	-0.022	-0.03	-0.650	-0.49	0.298	0.73	**0.840** **	2.51
Unemployed	0.706	1.06	0.203	0.15	0.458	1.11	**1.066** **	3.04
Post-secondary student	**1.678** *	2.07	**3.138** *	2.45	**1.294** *	2.20	**1.779** ***	3.46
High school student	1.494	1.32	**4.288** *	2.27	0.945	1.05	**1.505**	1.86
Neither in labour market, disabled, nor student	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*

(continued)

Table 22: Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations)[a] (Cont'd)

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Employer pays	-0.462	-0.87	-0.874	-1.13	-0.683	-1.63	**-0.874****	-2.69
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	-0.233	-0.52	-0.399	-0.63	-0.327	-1.04	**0.552**	1.91
Mathematical competency high	-0.449	-0.74	-0.258	-0.32	-0.311	-0.71	**0.711**	1.87
Willingness to save	**0.119*****	6.88	**0.118*****	5.35	**0.045*****	3.59	**0.033*****	3.20
Positive attitude about education and labour market	**0.259****	2.58	0.148	1.18	0.089	1.28	0.051	0.88
Planning ability	0.006	0.50	0.015	1.02	**-0.020***	-2.32	**-0.016***	-2.21
Recent student	0.092	0.24	**1.703**	1.92	0.221	0.86	0.189	0.91
Know government aid	0.174	1.26	-0.155	-0.86	0.045	0.46	**0.219****	2.73
Burdened by debt	0.312	0.93	**-1.091***	-2.13	**0.630****	2.59	0.231	1.15
ON	-1.339	-1.84	-0.376	-0.42	-0.750	-1.32	-0.826	-1.65
BC	**-2.075***	-2.26	-0.693	-0.73	-0.718	-1.15	-1.008	-1.86
NS	-0.456	-0.58	0.293	0.28	-0.654	-1.06	-0.557	-1.05
AB	**-1.982***	-2.40	-1.745	-1.64	-0.873	-1.46	**-1.311***	-2.48
QC/NF	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Constant	**-5.418****	-2.57	**-7.006***	-2.25	-1.139	-0.78	0.170	0.14
Log likelihood	-977.776							

Reference: No education preference

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.21 in the Appendix.

[a]Never significant: Male, Household income, Has children under 5 years of age, Non-urban resident, Hold diploma, Post-secondary education experience, High school diploma, High school equivalency, Disabled, Risky decisions, Locus of control, Parent High school/Tech, Parent university, Saved for post-secondary education, Good market understanding, Leisure TV, Current student debt, NS.

Overall, there is no strong evidence that entire subgroups have debt aversion. There is evidence that debt aversion is prevalent in some subgroups. High school students had a mean probability of 24 per cent to accept a 20 per cent matching grant and forego a $2,000 ISR loan for at least part-time study (Table 23, column 2). The post-secondary education students in the sample exhibited some debt aversion (Tables 20 and 22, column 2). The variable willingness to save is interesting in this context. There, behaviour is strong in each category. This is not contradictory. There are evidently some in the group of savers who see education as an investment option through borrowing and others that prefer to finance it themselves. There is evidence that certain subgroups are not debt-averse, for instance, the employed and unemployed (Table 20, columns 2 and 4) and part-time employed (Table 22, columns 1, 3,

and 4). In addition, there are some subgroups that could be classified as debt seeking. Those include immigrants (Table 20, columns 1 and 3), those with high planning ability (Table 20, column 3), and those who are already burdened by debt (Table 20, column 2).

High school students are far more likely to finance education using a 20 per cent matching grant than other participants. Table 23 shows that the mean probability for high school students preferring to use a 20 per cent matching grant (23.75 per cent) is much higher than for non-high school students (6.5 per cent).

Table 23: Calculated Probabilities of the Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations)

	MeanP (Preference for Matching Grants and Loans)	MeanP (Preference for Matching Grants and Grants)	MeanP (Preference for Loans and Grants)	MeanP (Preference for Grants)	MeanP (Reference: No Preference for Education)
Part-time employed	0.1012	0.0238	0.2024	0.4048	0.2679
Full-time employed	0.0500	0.0154	0.1538	0.3423	0.4385
HS Student	0.2125	0.2375	0.1500	0.3000	0.1000
Not HS student	0.0737	0.0649	0.1673	0.3246	0.3695
Burdened by debt	0.0795	0.0282	0.2077	0.3410	0.3436
Not burdened by debt	0.0916	0.1222	0.1324	0.3075	0.3462

Note: All probabilities are summarized in Table A.22 in the Appendix.

$5,000 Loan and ISR Loan Behaviour

A subset of participants (280) was asked to make two choices: $100 cash or a $5,000 loan for at least part-time education; and $100 cash or a $5,000 ISR loan for at least part-time education. Approximately one quarter of this subset chose the $5,000 loan over cash.

In this analysis, the focus is on those participants who do not accept a $5,000 loan, and those who did not accept an ISR loan conditional on their having not accepted a regular loan. Formally, consider an individual i who must choose between two alternatives: a loan of $5,000 or a cash alternative of $100. For a given individual i, $i = 1, ..., N$, the net utility of choosing the cash over the loan alternative can be expressed as a sum of two components:

$$L_0^* = \beta' X_{L0} + \varepsilon_{L0} \tag{11}$$

where X_{L0} denotes the observed component which are a known function of the characteristics and socio-economic background of the individual as well as some environmental variables, and ε_{L0} is an unobserved random component. Of course, this utility is unobservable. However, the choice of cash or loan is observable. Define the binary outcome of cash (No loan) over loan as

$$L_0 = \quad 1, \text{ if } L_0^* > 0 \tag{12}$$
$$\quad\quad 0, \text{ otherwise}$$

Thus cash is chosen over the loan if the net utility of cash is positive. In the next decision, conditional on having chosen the cash, individual i chooses cash over the ISR loan option. Formally

$$ISR_0 = \begin{array}{l} 1, \text{ if } ISR_0^* > 0 \\ 0, \text{ otherwise} \end{array} \quad (13)$$

Again, $ISR_0^* = \beta'X_{ISR0} + \varepsilon_{ISR0}$ is the net utility of choosing the cash option over the ISR loan. It is likely that the unobserved components ε_{L0} and ε_{ISR0} are correlated. The observed lack of ISR data is non-randomly selected from the set of participants choosing cash over the loan. To deal with this problem, the error components are assumed to be drawn from a bivariate normal distribution, corrected for sample selection, with a correlation coefficient $\eta : \varepsilon_{L0}, \varepsilon_{ISR0} \sim N(0,0,1,1,\rho)$.

It is easy to see that three categories of observation are made with unconditional probabilities: where Φ_2 is a bivariate normal standard cumulative distribution function and Φ is univariate standard normal cumulative distribution function.

$$\begin{aligned} L_0 = 1, ISR_0 = 1 &: \Pr ob(L_0 = 1, ISR_0 = 1) = \Phi_2[\beta'X_{L0}, \alpha'X_{ISR0}, \rho] \\ L_0 = 1, ISR_0 = 0 &: \Pr ob(L_0 = 1, ISR_0 = 1) = \Phi_2[\beta'X_{L0}, -\alpha'X_{ISR0}, -\rho] \\ L_0 = 0, &: \Pr ob(L_0 = 1, ISR_0 = 1) = \Phi[-\beta'X_{L0}] \end{aligned} \quad (14)$$

The corresponding log-likelihood function is summing over all individuals in the sample:

$$\begin{aligned} &\sum\nolimits_{L_0=1, ISR_0=1} \ln \Phi_2[\beta'X_{L0}, \alpha'X_{ISR0}, \rho] \\ &+ \sum\nolimits_{L_0=1, ISR_0=0} \ln \Phi_2[\beta'X_{L0}, -\alpha'X_{ISR0}, -\rho] \\ &+ \sum\nolimits_{L_0=0} \ln \Phi[\beta'X_{L0}] \end{aligned} \quad (15)$$

Equation (10) is maximized with respect to the parameters β, α and ρ to obtain maximum likelihood estimates.

The interpretation for the bivariate probit is the same as for the simple probit. The benefit of using this specification, is that the bivariate probit ensures the coefficients are correctly estimated without biases.

Table 24 summarizes the bivariate probit. The complete specification can be found in Table A.23. Examining the bottom half of the table first, the negative factors for taking cash can be interpreted as positive factors for taking the $5,000 loan. Men, low income participants, high school students, those with good math competency scores, those with a demonstrated preference for saving, and those who have been slow to pay in the past were more likely to take the loan than the cash. These results confirm the findings in the previous two sets of analysis.

The positive coefficients in the top half of Table 24 indicate a consistency in behaviour. Older participants, those participants with no children, and recent students were more likely to choose cash than an ISR loan conditional on choosing cash over a regular loan. In other

words, these individuals had a higher probability of not choosing ISR loans after refusing regular loans. Only those with the highest math skills were willing to take an ISR loan while refusing a regular loan. This indicates that some of the avoidance of loans for those individuals can be attributed to loss aversion rather than debt aversion. Calculated probabilities can be found in Table A.24 of the Appendix.

Table 24: Factors Related to Income-Sensitive Loan Behaviour With $5,000 in Debt (Bivariate Probit With Selection Bias, 280 Observations, 72 Censored Observations)

Variable	Coefficient	t-statistic
No preference for $5,000 ISR loan[a]		
Age 18–24	*ref*	*ref*
Age 25–44	**2.745**	1.82
Age 45 and older	**3.171** *	2.01
No children	**3.178** *	2.18
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	0.413	0.61
Mathematical competency high	**-2.024**	-1.86
Recent student	**1.455**	1.82
No preference for $5,000 loan[b]		
Male	**-0.499** **	-2.61
Female	*ref*	*ref*
Household income low	**-0.845** **	-2.88
Household income medium	*ref*	*ref*
Household income high	-0.008	-0.03
HS student	**-0.954** *	-2.32
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	**-0.538**	-1.87
Mathematical competency high	-0.491	-1.30
Willingness to save	**-0.044** ***	-4.08
Slow to pay	**-0.448**	-1.82
Constant	**3.664** ***	5.92
Rho	0.114	0.970
Log likelihood	-156.177	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.23 in the Appendix.

[a]Not significant: Male, Household income, Hold diploma, No high school diploma or equivalency, Part-time employed, Full-time employed, Unemployed, High school student, High school student x household income, Employer pays, Risky decisions, Willingness to save, Positive attitude about education, Planning ability, Parent High school/tech, Parent university, Saved for post-secondary education, Good market understanding, Leisure TV, Constant.

[b]Not significant: Hold diploma, High school student x household income, Employer pays, Risky decisions, Leisure TV, Credit cards, Co-signer.

Overall, there is some evidence present for loan aversion, loss aversion, debt aversion, and debt-seeking behaviour. For low levels of loans, any loss aversion related to taking a loan is negligible or that the loss aversion is not distinguishable from any debt aversion that may or may not exist.

There is no evidence that entire subgroups are debt-averse. However, both the high school and post-secondary education groups had sizeable probabilities of debt avoidance behaviour. There is evidence that certain subgroups are not debt averse, for instance those with labour market attachment. In addition, there are some subgroups that could be classified as debt seeking. Those include immigrants, those with high planning ability, and those who are already burdened by debt.

The analysis was able to indicate only one subgroup, those with the highest math skills who were loss-averse but not debt-averse. They had a higher probability of taking an ISR loan while refusing a regular loan than those with lower math skills.

The Lack of Information

How do perceived rates of return on education (the expected increase in life-time earnings resulting from the investment) compare with actual rates of return?

The decision model presented in Section 2 underlines the degree of subjectivity involved in the decision to invest in learning. Individuals will engage in additional learning activities if the perceived benefits exceed the perceived costs. Costs are not that difficult to predict: tuition fee schedules are easy to obtain from educational institutions and opportunity costs, especially foregone earnings, are not too difficult to estimate since most individuals have a clear notion of their current salary. However, estimating the benefits of additional education is a much more difficult task. Expected benefits materialize in the future and therefore are subject to much uncertainty. Successful outcomes will depend on the ability of the student, the quality of the course provided, and future labour market conditions. It should be clear from the discussion in Section 2 that there is considerable room for misperceptions in the decisions to invest, especially with respect to the returns to education and training. It may be the case that many people underestimate returns to education and therefore decide not to engage in learning activities.

Assuming that the rate of return to education is positive, the factors that are correlated with a positive attitude toward education can be examined. On the survey, four questions were included to indicate the participant's attitude about the returns to education Table 25 summarizes a simple ordered probit to illustrate what factors are related to a positive attitude toward education and the labour market for the participants in the experiment (excluding high schoolers). High school student attitude is summarized separately in Table 26. Recall that this factor, positive attitude, was a robust characteristic in most of the analysis carried presented in this report.

Table 25: Factors Related to a Positive Attitude of Education and the Labour Market (Ordered Probit, 801 Observations, No High School Students)

	Coefficient	t-statistic
Basic/Control variables		
Employer pays	**0.395** **	2.66
Age 18–24	*ref*	*ref*
Age 25–44	**0.257** *	2.01
Age 45 and older	**0.646** ***	4.24
Male	**0.193** *	2.17
Female	*ref*	*ref*
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	**0.255** *	2.02
Mathematical competency high	**0.531** ***	3.18
Dispositional variables[a]		
Saved for post-secondary education	**0.179**	1.82
Planning ability	**0.006**	1.87
Locus of control	**-0.061** ***	-4.83
Parent high school/tech	**-0.145**	-1.65
Situational variables[b]		
Hold diploma	**-0.155** *	-2.26
Current student debt	**-0.247** *	-2.36
Burdened by debt	**0.218** *	2.30
Good market understanding	**0.244** **	2.77
Institutional variables[c]		
High school equivalency	**0.374**	1.67
Delta1	0.092	0.18
Delta2	1.485	2.87
Log likelihood	-765.150	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.25 in the Appendix.

[a]Not significant: Willingness to save, Risky decisions, Parent university, School performance, Peers liked school, Liked school

[b]Not significant: Post-secondary education experience, No children, married, Non-urban resident, Unemployed, Post-secondary student, Part-time employed, Full-time employed, Current debt, Household income, Immigrant, Has children under 5 years of age, Disabled, Leisure TV.

[c]Not significant: HS diploma, ON, BC, NS, AB, Knows government aid.

**Table 26: Factors Related to a Positive Attitude of Education and the Labour Market
(Ordered Probit, 80 Observations, High School Students)**

	Coefficient	t-statistic
Basic/Control variables		
Male	**0.798** *	2.34
Female	*ref*	*ref*
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	**0.942** *	2.18
Mathematical competency high	0.618	0.79
Dispositional variables[a]		
Saved for post-secondary education	**0.795** *	2.17
Locus of control	**-0.141** *	-2.39
School performance	**0.768** *	2.16
Situational variables[b]		
Institutional variables		
Knows government aid	**0.394** **	2.90
Delta1	1.305	0.73
Delta2	3.009	1.66
Log likelihood	-63.246	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

All other insignificant variables are summarized in Table A.26 in the Appendix.

[a]Not significant: Willingness to save, Risky decisions, Planning ability, Parent high school/tech, Parent university, Claudia, Peers liked school.

[b]Not significant: Burdened by debt, Current debt, Household income, Good market understanding, Leisure TV.

Older participants are more likely to have a more positive attitude toward education, although from previous analysis we know that they are also less likely to invest in education. Men and those with medium or higher level math skills are likely to have a more positive attitude. Dispositional characteristics that increase the probability of a positive attitude are having a history of saving in the family for post-secondary education, having good planning ability, and having a more centred locus of control.[13] The only negative dispositional characteristic was having a parent with at most a high school diploma or a technical or college degree. Those who have a diploma and also have current student debt had a higher probability of having a negative attitude towards education. It is conceivable that those currently in repayment of their student loans would have a poorer attitude than those who are either out of repayment or had no repayment. Perhaps these individuals perceive a lower return because they are still incurring the cost of their educational investment. On the other hand, those who are burdened by debt, those who have a good understanding of the labour market, and those with a high school equivalency were more likely to have a positive attitude.

The high schoolers tell a similar story, although abbreviated. High school boys and those with good math competency scores were more likely to have a positive attitude about

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[13]Note that Locus of control is constructed in such a way that a negative coefficient means that individuals who have a stronger feeling of self-efficacy are more likely to have a positive attitude.

education. Those who are performing well in school, have a centred locus of control, and have some history of saving in the family for post-secondary education have an increased probability of having a good attitude towards education and the labour market.

Now the analysis turns to how individuals react to additional labour market information. To gauge the extent to which misperceptions concerning the returns to education constitute an important barrier to further investment in education, the experiment measured how participants' perceptions of the returns to education differed from actual rates of returns. In the survey administered to participants, each respondent was asked to estimate the average yearly earnings that result from different years of schooling (for example, obtaining a high school diploma, community college trade certificate, and bachelor degree). Human Resources Development Canada (HRDC) and provincial government departments, through the dissemination of various labour market information products, make this type of information publicly available. By scoring participants on their perception of the benefits of education as they relate to the labour market, it is possible to determine if some people have a tendency to systematically underestimate the returns on education. And to analyze the personal characteristics of those who do so. For instance, it may be that people who underestimate the benefits of education have a low level of confidence in their ability to learn.

Does the Availability of Labour Market Information Modify Behaviour?

HRDC and provincial governments invest substantial resources in collecting labour market data and generating labour market information (LMI) products. This information is intended to assist both youth and adults in their career and educational choices. Is this information at all useful? The results from this single treatment study indicate that it is.

In order to determine if more labour market information (from credible sources) can have an impact on the decision to invest in learning activities, the researchers offered, five months after the initial experience, a subset of participants a 90-minute information session at which the actual labour market outcomes for various fields of education were discussed.[14] These sessions used HRDC, readily available materials and focused on locally available courses and local employment opportunities for different trades and occupations. One month following the information session, participants were invited back to complete a short survey and another set of decision questions. The object was to document whether preferences for education were affected by exposure to this type of labour market information. Another group of participants was invited to redo the choice questions but without the benefit of the labour market information session. This latter group served as a comparison group.

Because educational choices were posed before and after the LMI session, for both the treatment and comparison group, we were able to identify participants who chose education more in the second round of questions than the first round. This is the dependent variable in the simple probit summarized in Table 24. Many characteristics remained unchanged for the participants. However, in an attempt to include factors that could affect an individual's capacity to take up education, changes in the individual's main activity that could have a negative or a positive impact on the demand for education were controlled for.

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[14]The participants who were invited back were those participants who exhibited, relative to the other participants, low accuracy in their perceptions about the labour market. The last section of the survey administered in the first experience was used for this task.

Table 27: Probability of Taking More Education After a Labour Market Information Session for All Participants, Treatment and Control (Probit, 156 Observations)

	Coefficient	t-statistic
LMI treatment x age 18–24	**0.7069**	1.92
LMI treatment x age 25–44	0.0143	0.05
Main activity change positive	0.0876	0.19
Main activity change negative	0.3259	1.00
Constant	**-0.934***	-6.08
Log likelihood = -78.125215		
R² = 0.0294		

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.
"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Overall, young persons, those under 25 years of age, who participated in the LMI sessions had a higher, significant probability of taking more education. Probabilities were calculated for each factor in the probit summarized in Table 27. Those under 25 years of age who did not participate in the information session had a probability of 42.9 per cent of taking more education; those who did participate had a probability of 57.1 per cent. In short, this 14.2 percentage point increase supports the position that labour market information can make a difference in influencing education decision making, at least for young people.

Why were the younger participants in the subsample more willing to increase educational activity after being exposed to the labour market information session than their older counterparts? This question cannot be answered from this single-treatment study. There are a number of possible explanations. Two immediate explanations are the context of the educational choices and the time period of adjustment.

Perhaps the context of the educational choices in the experiment was biased towards younger participants. What if the educational decisions were in the context of work-related training and upgrading rather than post-secondary education? In the context of work-related training, rather than using grants for education or training as a choice, the alternative to cash could be training to a specific level that, for instance, would be the minimum level needed for promotion.[15]

The analysis in the barrier section showed that the decision to invest in education for older adults is far more complicated than it is for younger adults. The participants in the LMI treatment were asked to make their second set of decisions one month after the labour market information session. Although participants were allowed to use their educational funding up to two years after their participation, one month may not be enough time for adults to adjust their preferences given the level of complexity of the decision to invest in education.

Further research is needed to understand the process by which adults absorb relevant information. Vital in the design of any future studies is attention to the environments and materials that help adults absorb information as well as the types of information that are more readily received. This study provided one type of information transmittal, one time period of adjustment, and one indicator of preference for training and education. With these

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[15]Ideally, an experiment of this nature could be offered in conjunction with a large employer with standardized job profiles.

restrictions, we find that younger adults can be influenced with labour market information to have a higher probability of participation in education and training.

Appendix Tables

Table A.1: Proportion of Total Participants Choosing Educational Funding Over Cash

Investment Decisions		High School (Urban) (80)	Entire Sample (801)	Age 18–24 (/High School) (170)	Age 25–44 (438)	Age 45–55 (193)	Male (/High School) (347)	Female (/High School) (454)	Post-secondary Student (101)	Unem-ployed (162)	Part-Time Employed (168)	Full-Time Employed (260)
Full-time education decisions												
$300 grant	D73	0.4750	0.1798	0.4353	0.1233	0.0829	0.1931	0.1696	0.6931	0.1111	0.1369	0.0885
$600 grant	D74	0.6375	0.2497	0.5412	0.1986	0.1088	0.2709	0.2335	0.7525	0.2037	0.2202	0.1462
$1,000 grant	D75	0.8000	0.3346	0.6588	0.2763	0.1813	0.3602	0.3150	0.8218	0.3395	0.3036	0.2115
$1,000 grant ($50)	D76	0.8500	0.3621	0.6824	0.3037	0.2124	0.3862	0.3436	0.8416	0.3580	0.3690	0.2231
$1,000 grant ($200)	D77	0.6250	0.2547	0.5353	0.2032	0.1244	0.2594	0.2511	0.7624	0.2407	0.2321	0.1192
$1,000 grant ($475)	D78	0.4375	0.1548	0.3588	0.1096	0.0777	0.1585	0.1520	0.5743	0.1358	0.1250	0.0615
$1,000 loan	D79	0.2250	0.1049	0.1941	0.0890	0.0622	0.1095	0.1013	0.2079	0.1173	0.1190	0.0654
$2,000 loan	D80	0.2875	0.1560	0.2647	0.1393	0.0984	0.1671	0.1476	0.2574	0.1667	0.1905	0.1038
$1,000 ISR loan	D81	0.2875	0.1198	0.2118	0.1073	0.0674	0.1182	0.1211	0.2277	0.1420	0.1488	0.0692
$2,000 ISR loan	D82	0.3500	0.1847	0.3059	0.1667	0.1192	0.1988	0.1740	0.3168	0.2099	0.2143	0.1269
20% matching grant	D83	0.4250	0.1273	0.3529	0.0708	0.0570	0.1383	0.1189	0.5050	0.0864	0.1250	0.0385
50% matching grant	D84	0.5375	0.1910	0.4412	0.1416	0.0829	0.1960	0.1872	0.6337	0.1358	0.2202	0.0846
100% matching grant	D85	0.7500	0.2684	0.5765	0.2192	0.1088	0.2911	0.2511	0.7525	0.2346	0.2857	0.1577
200% matching grant	D86	0.7625	0.3158	0.6235	0.2671	0.1554	0.3487	0.2907	0.7723	0.3272	0.3393	0.1808
Part-time education decisions												
$300 grant	D87	0.4875	0.2947	0.4882	0.2534	0.2176	0.2738	0.3106	0.6238	0.2593	0.3452	0.2000
$600 grant	D88	0.6875	0.4319	0.6235	0.4110	0.3109	0.4265	0.4361	0.7129	0.4321	0.5060	0.3538
$1,000 grant	D89	0.8250	0.5618	0.7588	0.5479	0.4197	0.5562	0.5661	0.8020	0.5864	0.6429	0.5000
$1,000 grant ($50)	D90	0.8375	0.5855	0.8000	0.5639	0.4456	0.5850	0.5859	0.8317	0.5741	0.6845	0.5269
$1,000 grant ($200)	D91	0.6750	0.4157	0.6118	0.3836	0.3161	0.3948	0.4317	0.7129	0.4259	0.4940	0.3231
$1,000 grant ($475)	D92	0.4500	0.2634	0.4412	0.2260	0.1917	0.2421	0.2797	0.5545	0.2593	0.3095	0.1808
$1,000 loan	D93	0.2125	0.1411	0.2176	0.1142	0.1347	0.1556	0.1300	0.1980	0.1543	0.1667	0.1154
$2,000 loan	D94	0.2875	0.1947	0.2882	0.1712	0.1658	0.2161	0.1784	0.2574	0.2099	0.2381	0.1577
$1,000 ISR loan	D95	0.3000	0.1573	0.2118	0.1370	0.1554	0.1700	0.1476	0.1980	0.2037	0.1845	0.1269
$2,000 ISR loan	D96	0.3500	0.2197	0.3000	0.2078	0.1762	0.2536	0.1938	0.2574	0.2469	0.2738	0.1769
20% matching grant	D97	0.4500	0.1386	0.3588	0.0799	0.0777	0.1441	0.1344	0.5050	0.0988	0.1250	0.0654
50% matching grant	D98	0.5500	0.2297	0.4706	0.1781	0.1347	0.2363	0.2247	0.6139	0.1852	0.2917	0.1269
100% matching grant	D99	0.7375	0.3695	0.6235	0.3402	0.2124	0.3718	0.3678	0.7327	0.3457	0.4464	0.2808
200% matching grant	D100	0.7625	0.4357	0.6765	0.4018	0.3005	0.4553	0.4207	0.7525	0.4259	0.5238	0.3538
Decision for subsample		(n = 79)	(n = 45)	(n = 13)	(n = 25)	(n = 7)	(n = 20)	(n = 25)	(n = 13)	(n = 5)	(n = 10)	(n = 10)
$5,000 loan	D101	0.3671	0.3778	0.5385	0.2800	0.4286	0.6500	0.1600	0.6154	0.6000	0.2000	0.1000
$5,000 ISR loan	D102	0.4684	0.4222	0.5385	0.3200	0.5714	0.6500	0.2400	0.6154	0.8000	0.2000	0.1000

Table A.2: Proportion of Urban Participants Choosing Educational Funding Over Cash

Investment Decisions		High School (80)	Entire Urban (656)	Age 18–24 (/High School) (144)	Age 25–44 (352)	Age 45–55 (160)	Male (/High School) (293)	Female (/High School) (363)	Post-secondary Student (96)	Unem-ployed (125)	Part-Time Employed (137)	Full-Time Employed (219)
Full-time education decisions												
$300 grant	D73	0.4750	0.1890	0.4583	0.1250	0.0875	0.2082	0.1736	0.6875	0.1120	0.1387	0.0868
$600 grant	D74	0.6375	0.2607	0.5694	0.2017	0.1125	0.2935	0.2342	0.7500	0.2080	0.2190	0.1416
$1,000 grant	D75	0.8000	0.3476	0.6806	0.2813	0.1937	0.3891	0.3140	0.8229	0.3520	0.2920	0.2055
$1,000 grant ($50)	D76	0.8500	0.3659	0.6944	0.2983	0.2188	0.4096	0.3306	0.8438	0.3520	0.3358	0.2146
$1,000 grant ($200)	D77	0.6250	0.2637	0.5556	0.2074	0.1250	0.2730	0.2562	0.7708	0.2400	0.2263	0.1096
$1,000 grant ($475)	D78	0.4375	0.1616	0.3750	0.1108	0.0812	0.1775	0.1488	0.5729	0.1360	0.1168	0.0594
$1,000 loan	D79	0.2250	0.1021	0.1875	0.0824	0.0688	0.1263	0.0826	0.1979	0.1200	0.1022	0.0685
$2,000 loan	D80	0.2875	0.1585	0.2500	0.1420	0.1125	0.1877	0.1350	0.2500	0.1760	0.1898	0.1050
$1,000 ISR loan	D81	0.2875	0.1174	0.2014	0.1023	0.0750	0.1331	0.1047	0.2083	0.1440	0.1387	0.0731
$2,000 ISR loan	D82	0.3500	0.1905	0.2986	0.1705	0.1375	0.2184	0.1680	0.3125	0.2240	0.2190	0.1279
20% matching grant	D83	0.4250	0.1387	0.3750	0.0767	0.0625	0.1570	0.1240	0.5104	0.0880	0.1314	0.0411
50% matching grant	D84	0.5375	0.2027	0.4722	0.1449	0.0875	0.2184	0.1901	0.6354	0.1360	0.2190	0.0868
100% matching grant	D85	0.7500	0.2820	0.5972	0.2273	0.1187	0.3174	0.2534	0.7604	0.2320	0.2847	0.1598
200% matching grant	D86	0.7625	0.3293	0.6458	0.2784	0.1563	0.3754	0.2920	0.7813	0.3200	0.3285	0.1872
Part-time education decisions												
$300 grant	D87	0.4875	0.3018	0.5139	0.2614	0.2000	0.2867	0.3140	0.6250	0.2640	0.3504	0.1918
$600 grant	D88	0.6875	0.4390	0.6389	0.4233	0.2937	0.4471	0.4325	0.7188	0.4480	0.4964	0.3425
$1,000 grant	D89	0.8250	0.5716	0.7639	0.5625	0.4187	0.5734	0.5702	0.8125	0.5840	0.6350	0.4932
$1,000 grant ($50)	D90	0.8375	0.5899	0.8125	0.5682	0.4375	0.6075	0.5758	0.8438	0.5680	0.6642	0.5251
$1,000 grant ($200)	D91	0.6750	0.4207	0.6250	0.3892	0.3063	0.4164	0.4242	0.7188	0.4320	0.4745	0.3105
$1,000 grant ($475)	D92	0.4500	0.2652	0.4444	0.2330	0.1750	0.2560	0.2727	0.5521	0.2480	0.3139	0.1689
$1,000 loan	D93	0.2125	0.1433	0.2153	0.1136	0.1437	0.1775	0.1157	0.1875	0.1680	0.1679	0.1187
$2,000 loan	D94	0.2875	0.1966	0.2708	0.1761	0.1750	0.2457	0.1570	0.2500	0.2320	0.2336	0.1553
$1,000 ISR loan	D95	0.3000	0.1570	0.2083	0.1307	0.1688	0.1877	0.1322	0.1875	0.2240	0.1825	0.1233
$2,000 ISR loan	D96	0.3500	0.2226	0.2847	0.2102	0.1937	0.2799	0.1763	0.2500	0.2720	0.2701	0.1781
20% matching grant	D97	0.4500	0.1479	0.3750	0.0881	0.0750	0.1638	0.1350	0.5104	0.1040	0.1241	0.0685
50% matching grant	D98	0.5500	0.2378	0.5000	0.1790	0.1312	0.2628	0.2176	0.6146	0.2000	0.2847	0.1233
100% matching grant	D99	0.7375	0.3826	0.6458	0.3494	0.2188	0.4061	0.3636	0.7396	0.3600	0.4453	0.2785
200% matching grant	D100	0.7625	0.4421	0.6875	0.4091	0.2937	0.4812	0.4105	0.7604	0.4320	0.5109	0.3379
Decision for subsample		(n = 79)	(n = 45)	(n = 13)	(n = 25)	(n = 7)	(n = 20)	(n = 25)	(n = 13)	(n = 5)	(n = 10)	(n = 10)
$5,000 loan	D101	0.3671	0.3778	0.5385	0.2800	0.4286	0.6500	0.1600	0.6154	0.6000	0.2000	0.1000
$5,000 ISR loan	D102	0.4684	0.4222	0.5385	0.3200	0.5714	0.6500	0.2400	0.6154	0.8000	0.2000	0.1000

Table A.3: Proportion of Non-urban Participants Choosing Educational Funding Over Cash

Investment Decisions		Entire Non-urban (149)	Age 18–24 (26)	Age 25–44 (88)	Age 45–55 (35)	Male (57)	Female (92)	Post-secondary Student (5)	Unem-ployed (38)	Part-Time Employed (33)	Full-Time Employed (42)
Full-time education decisions											
$300 grant	D73	0.1409	0.3077	0.1250	0.0571	0.1228	0.1522	0.8000	0.1053	0.1515	0.0952
$600 grant	D74	0.2013	0.3846	0.1932	0.0857	0.1579	0.2283	0.8000	0.1842	0.2424	0.1667
$1,000 grant	D75	0.2752	0.5385	0.2614	0.1143	0.2105	0.3152	0.8000	0.2895	0.3636	0.2381
$1,000 grant ($50)	D76	0.3423	0.6154	0.3295	0.1714	0.2632	0.3913	0.8000	0.3684	0.5152	0.2619
$1,000 grant ($200)	D77	0.2148	0.4231	0.1932	0.1143	0.1930	0.2283	0.6000	0.2368	0.2727	0.1667
$1,000 grant ($475)	D78	0.1275	0.2692	0.1136	0.0571	0.0702	0.1630	0.6000	0.1316	0.1818	0.0714
$1,000 loan	D79	0.1208	0.2308	0.1250	0.0286	0.0351	0.1739	0.4000	0.1053	0.2121	0.0476
$2,000 loan	D80	0.1477	0.3462	0.1364	0.0286	0.0702	0.1957	0.4000	0.1316	0.2121	0.0952
$1,000 ISR loan	D81	0.1342	0.2692	0.1364	0.0286	0.0526	0.1848	0.6000	0.1316	0.2121	0.0476
$2,000 ISR loan	D82	0.1611	0.3462	0.1591	0.0286	0.1053	0.1957	0.4000	0.1579	0.2121	0.1190
20% matching grant	D83	0.0805	0.2308	0.0568	0.0286	0.0526	0.0978	0.4000	0.0789	0.1212	0.0238
50% matching grant	D84	0.1409	0.2692	0.1364	0.0571	0.0877	0.1739	0.6000	0.1316	0.2424	0.0714
100% matching grant	D85	0.2081	0.4615	0.1932	0.0571	0.1579	0.2391	0.6000	0.2368	0.3030	0.1429
200% matching grant	D86	0.2550	0.5000	0.2273	0.1429	0.2105	0.2826	0.6000	0.3421	0.3939	0.1429
Part-time education decisions											
$300 grant	D87	0.2617	0.3462	0.2273	0.2857	0.2105	0.2935	0.6000	0.2368	0.3333	0.2381
$600 grant	D88	0.3960	0.5385	0.3636	0.3714	0.3158	0.4457	0.6000	0.3684	0.5455	0.4048
$1,000 grant	D89	0.5168	0.7308	0.4886	0.4286	0.4737	0.5435	0.6000	0.5789	0.6667	0.5476
$1,000 grant ($50)	D90	0.5570	0.7308	0.5455	0.4571	0.4561	0.6196	0.6000	0.5789	0.7576	0.5238
$1,000 grant ($200)	D91	0.3893	0.5385	0.3636	0.3429	0.2807	0.4565	0.6000	0.3947	0.5758	0.3810
$1,000 grant ($475)	D92	0.2550	0.4231	0.2045	0.2571	0.1754	0.3043	0.6000	0.2895	0.3030	0.2381
$1,000 loan	D93	0.1342	0.2308	0.1250	0.0857	0.0526	0.1848	0.4000	0.1053	0.1818	0.0952
$2,000 loan	D94	0.1879	0.3846	0.1591	0.1143	0.0702	0.2609	0.4000	0.1316	0.2727	0.1667
$1,000 ISR loan	D95	0.1611	0.2308	0.1705	0.0857	0.0877	0.2065	0.4000	0.1316	0.2121	0.1429
$2,000 ISR loan	D96	0.2148	0.3846	0.2045	0.1143	0.1404	0.2609	0.4000	0.1579	0.3030	0.1905
20% matching grant	D97	0.1479	0.3750	0.0881	0.0750	0.1638	0.1350	0.5104	0.1040	0.1241	0.0685
50% matching grant	D98	0.2378	0.5000	0.1790	0.1312	0.2628	0.2176	0.6146	0.2000	0.2847	0.1233
100% matching grant	D99	0.3826	0.6458	0.3494	0.2188	0.4061	0.3636	0.7396	0.3600	0.4453	0.2785
200% matching grant	D100	0.4421	0.6875	0.4091	0.2937	0.4812	0.4105	0.7604	0.4320	0.5109	0.3379

Table A.4: Determinants of Taking Part-Time Educational Funding More Frequently Than Full-Time Educational Funding (Bivariate Probit With Selection Bias Specification, 881 Observations, 299 Censored Observations)

Variable	Coefficient	t-statistic
Part-time funding more than full-time funding		
Age 18–24	*ref*	*ref*
Age 25–44	**0.389715** *	2.14
Age 45 and older	**0.677902** **	2.61
Male	**-0.4496** ***	-3.21
Female	*ref*	*ref*
Household income low	-0.18225	-1.16
Household income medium	*ref*	*ref*
Household income high	0.158416	0.98
Married	0.111556	0.67
No children	-0.21707	-1.01
Has children under 5 years of age	0.188673	0.70
Immigrant	-0.13832	-0.38
Non-urban resident	-0.25452	-1.44
Hold diploma	0.055827	0.53
Post-secondary education experience	0.177296	0.80
High school diploma	-0.21876	-0.89
High school equivalency	**-0.92702** **	-2.57
Part-time employed	-0.14204	-0.40
Full-time employed	0.11772	0.39
Unemployed	-0.20652	-0.66
Post-secondary student	**-1.63795** ***	-4.38
High school student	**-1.32856** **	-2.64
Neither in labour market nor student	*ref*	*ref*
Employer pays	0.358575	1.27
Mathematical competency low	*ref*	*ref*
Mathematical competency median	**0.430159** *	2.22
Mathematical competency high	**0.571852** *	2.24
Risky decisions	0.006646	0.18
Willingness to save	-0.00687	-0.69
Positive attitude about education and labour market	-0.04707	-1.18
Planning ability	-0.00956	-1.64

(continued)

Table A.4: Determinants of Taking Part-Time Educational Funding More Frequently Than Full-Time Educational Funding (Bivariate Probit With Selection Bias Specification, 881 Observations, 299 Censored Observations) (Cont'd)

Variable	Coefficient	t-statistic
Locus of control	-0.00852	-0.42
Parent high school/tech	0.006579	0.05
Parent university	0.118024	0.83
Saved for post-secondary education	-0.10887	-0.75
Recent student	0.07767	0.51
Knows government aid	-0.03987	-0.74
Leisure TV	0.488175	0.91
ON	-0.03328	-0.12
BC	-0.15224	-0.49
NS	-0.07365	-0.26
AB	-0.05778	-0.19
QC and NF	*ref*	*ref*
Constant	**1.88031** *	2.03
Full-time funding		
Age 18–24	*ref*	*ref*
Age 25–44	-0.21429	-1.36
Age 45 and older	**-0.60038** ***	-3.31
Male	-0.06182	-0.60
Female	*ref*	*ref*
Household income low	0.110135	0.88
Household income medium	*ref*	*ref*
Household income high	-0.09011	-0.72
Married	**-0.20206**	-1.69
No children	0.204967	1.45
Has children under 5 years of age	0.279862	1.48
Immigrant	**1.049577** ***	3.78
Non-urban resident	0.061358	0.45
Hold diploma	0.022376	0.28
Ever enrolled in post-secondary education	0.030362	0.17
High school diploma	-0.00069	0.00
High school equivalency	**0.780623** ***	4.37
Part-time employed	**0.324371**	1.87
Full-time employed	**0.528917** **	3.00
Unemployed	**1.044919** ***	4.15
Post-secondary student	**1.189594** ***	3.61

(continued)

Table A.4: Determinants of Taking Part-Time Educational Funding More Frequently Than Full-Time Educational Funding (Bivariate Probit With Selection Bias Specification, 881 Observations, 299 Censored Observations) (Cont'd)

Variable	Coefficient	t-statistic
Neither in labour market nor student	*ref*	*ref*
Employer pays	**-0.44359** **	-2.64
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	0.104883	0.74
Mathematical competency high	0.178381	0.93
Risky decisions	-0.02314	-0.87
Willingness to save	**0.029912** ***	5.80
Positive attitude about education and labour market	**0.054594**	1.79
Planning ability	**-0.00876** *	-2.36
Locus of control	-0.00745	-0.50
Parent high school/tech	0.029455	0.29
Parent university	0.009463	0.08
Saved for post-secondary education	0.102473	0.92
Recent student	0.139401	1.28
Leisure TV	-0.33324	-0.79
Constant	-0.0892	-0.15
Rho	-0.26539	-0.44
Log likelihood	-751.128	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.5: Calculated Probabilities of Taking Part-Time Educational Funding More Frequently Than Full-Time Educational Funding (Bivariate Probit With Selection Bias Specification, 881 Observations, 299 Censored Observations)

		Prob(Part-Time Funding Chosen More Frequently / Full-Time Choice)	
		Mean	Standard Deviation
Age 18–24		0.3201	0.2349
Age 25–44		0.6964	0.1991
Age 45 and older		0.7313	0.1815
Male		0.5223	0.2636
Female		0.6568	0.2611
Household income low		0.5335	0.2466
Household income medium		0.6507	0.2462
Household income high		0.6102	0.3059
Married		0.7291	0.1998
Not married		0.5264	0.2770
No children		0.5468	0.2744
Had children		0.7576	0.1808
Has children under 5 years of age		0.7620	0.1982
No children under 5 years of age		0.5838	0.2716
Immigrant		0.5830	0.3006
Not immigrant		0.5980	0.2690
Non-urban resident		0.6136	0.2009
Urban resident		0.5939	0.2825
Diploma = 1		0.5583	0.2768
Diploma = 2		0.7429	0.1890
Diploma = 3		0.7156	0.2014
Diploma = 4		0.7112	0.1880
Diploma = 5	(1 obs.)	0.8450	—
Post-secondary education experience		0.6409	0.2566
No post-secondary education experience		0.4320	0.2579
High school diploma		0.6490	0.2511
No high school diploma		0.4176	0.2587
High school equivalency		0.4248	0.1808
No high school equivalency or hold high school diploma		0.6072	0.2715
Neither in labour market or student		0.7045	0.1713
Unemployed		0.6252	0.1796
Post-secondary student		0.1274	0.0834
Part-time employed		0.7177	0.1479

(continued)

Table A.5: Calculated Probabilities of Taking Part-Time Educational Funding More Frequently Than Full-Time Educational Funding (Bivariate Probit With Selection Bias Specification, 881 Observations, 299 Censored Observations) (Cont'd)

		Prob(Part-Time Funding Chosen More Frequently / Full-Time Choice)	
		Mean	**Standard Deviation**
Full-time employed		0.7612	0.1421
High school student		0.2004	0.0931
Not high school student		0.6369	0.2496
Employer pays		0.7540	0.2197
Employer does not pay		0.5794	0.2700
Mathematical competency low		0.4814	0.2380
Mathematical competency median		0.6086	0.2704
Mathematical competency high		0.6645	0.2687
Risky decisions — Low	rd<=3	0.5983	0.2797
Risky decisions — Neutral	4<=rd<=5	0.5870	0.2715
Risky decisions — High	6<=rd	0.6165	0.2401
Least willing to save	save<=9	0.6219	0.2495
Less than average willing to save	10<=save<=19	0.5987	0.2654
More than average willing to save	20<=save<=29	0.5978	0.2772
Most willing to save	30<=save	0.5516	0.2983
Positive attitude about education and labour market — Low	posatt<=7	0.6294	0.2390
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.5933	0.2735
Positive attitude about education and labour market — High	10<=posatt	0.5810	0.2850
Planning ability — Low	pa<=89	0.6029	0.2565
Planning ability — Medium	90<=pa<=99	0.5965	0.2783
Planning ability — High	100<=pa<=109	0.6317	0.2551
Planning ability — Very High	110<=pa	0.5557	0.2879
Locus of control — Low	16 <=loc	0.5897	0.2592
Locus of control — Medium	14<=loc<=15	0.6155	0.2620
Locus of control — High	11<=loc<=13	0.5955	0.2681
Locus of control — Very High	loc<=10	0.5860	0.2983
Parent high school/tech		0.5969	0.2702
Parent university		0.5468	0.3048
Saved for post-secondary education		0.5760	0.2808
Not saved for post-secondary education		0.6422	0.2414
Recent student		0.6198	0.2815
Recent non-student		0.5681	0.2529
Know government aid		0.6253	0.2745

(continued)

Table A.5: Calculated Probabilities of Taking Part-Time Educational Funding More Frequently Than Full-Time Educational Funding (Bivariate Probit With Selection Bias Specification, 881 Observations, 299 Censored Observations) (Cont'd)

		Prob(Part-Time Funding Chosen More Frequently / Full-Time Choice)	
		Mean	**Standard Deviation**
Don't know government aid		0.5742	0.2652
Leisure TV — Low	Leisure TV < 0.33	0.5494	0.2985
Leisure TV — High	0.33<=Leisure TV	0.6090	0.2768
ON		0.6394	0.2438
BC		0.5511	0.2538
NS		0.6939	0.2009
AB		0.6446	0.2596
QC, NF		0.1942	0.2933

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.6a: Proportion of Participants by Subgroup Who Chose Educational Financing Over Cash — Male Participants

	Age 18–24						Age 25–44					Age 45 and Older				
	High School Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student
Sample:	43	30	17	11	16	2	11	78	25	48	17	4	35	15	24	14
Decision																
73	0.5581	0.7667	0.0588	0.0909	0.2500	0.0000	0.5455	0.0897	0.2400	0.1250	0.1176	0.7500	0.0857	0.2000	0.0417	0.0714
74	0.7209	0.8000	0.1765	0.5455	0.3125	0.0000	0.7273	0.1795	0.2800	0.2708	0.1765	0.7500	0.0571	0.2000	0.0417	0.1429
75	0.8140	0.9000	0.4706	0.6364	0.4375	0.0000	0.7273	0.2436	0.3600	0.3958	0.3529	0.7500	0.1429	0.2000	0.0833	0.1429
76	0.8372	0.9000	0.5294	0.6364	0.4375	0.0000	0.7273	0.2564	0.4000	0.4583	0.3529	0.7500	0.1429	0.4000	0.0833	0.1429
77	0.7442	0.8667	0.2941	0.1818	0.3125	0.0000	0.6364	0.1154	0.3200	0.3333	0.1176	0.7500	0.0571	0.2000	0.0000	0.1429
78	0.4884	0.6333	0.1176	0.0000	0.2500	0.0000	0.5455	0.0513	0.2800	0.1250	0.0000	0.5000	0.0571	0.0667	0.0000	0.1429
79	0.2093	0.1333	0.0588	0.0909	0.1250	0.0000	0.2727	0.1026	0.1600	0.1667	0.0588	0.5000	0.0571	0.1333	0.0000	0.0000
80	0.2326	0.2000	0.2353	0.1818	0.1250	0.0000	0.3636	0.1538	0.2000	0.2292	0.1176	0.5000	0.0571	0.3333	0.0000	0.0714
81	0.2791	0.1333	0.0588	0.1818	0.1250	0.0000	0.2727	0.1026	0.1600	0.1875	0.0588	0.5000	0.0571	0.2000	0.0000	0.0000
82	0.3488	0.2667	0.2941	0.1818	0.1875	0.0000	0.3636	0.1923	0.2400	0.2708	0.1176	0.5000	0.0571	0.3333	0.0417	0.0714
83	0.4651	0.6667	0.0588	0.0909	0.2500	0.0000	0.2727	0.0385	0.2000	0.0625	0.0000	0.2500	0.0571	0.2000	0.0000	0.1429
84	0.6047	0.7333	0.0588	0.1818	0.2500	0.0000	0.5455	0.1282	0.2400	0.1042	0.0588	0.5000	0.0571	0.3333	0.0000	0.1429
85	0.7907	0.8333	0.2353	0.4545	0.3750	0.0000	0.6364	0.2051	0.3600	0.2708	0.1176	0.7500	0.0857	0.4000	0.0000	0.1429
86	0.7907	0.8333	0.3529	0.6364	0.4375	0.0000	0.7273	0.2051	0.4800	0.3958	0.1765	0.7500	0.0857	0.4667	0.1250	0.1429
87	0.5581	0.7667	0.1765	0.1818	0.3750	0.0000	0.3636	0.1667	0.4400	0.1875	0.2941	0.5000	0.2286	0.3333	0.1250	0.0714
88	0.7442	0.8000	0.4706	0.6364	0.3750	0.0000	0.6364	0.3205	0.6000	0.4167	0.4118	0.5000	0.2857	0.4667	0.3333	0.1429
89	0.8372	0.8333	0.7059	0.8182	0.6250	0.0000	0.6364	0.4744	0.7200	0.6250	0.4706	0.5000	0.4571	0.4667	0.3750	0.2143
90	0.8372	0.9000	0.7059	0.8182	0.6875	0.0000	0.7273	0.4872	0.6800	0.6042	0.5294	0.7500	0.4857	0.7333	0.3750	0.2143
91	0.7442	0.8333	0.2941	0.4545	0.3750	0.0000	0.4545	0.2949	0.6000	0.4167	0.2941	0.5000	0.2857	0.5333	0.2500	0.1429
92	0.4884	0.6000	0.2941	0.0909	0.3125	0.0000	0.4545	0.1538	0.4400	0.1875	0.1176	0.5000	0.2286	0.2000	0.0833	0.0714
93	0.2093	0.1667	0.1765	0.1818	0.1250	0.0000	0.1818	0.1538	0.1600	0.1875	0.1176	0.5000	0.1429	0.2000	0.0833	0.0714
94	0.2326	0.2667	0.3529	0.1818	0.1250	0.0000	0.2727	0.1923	0.2000	0.2708	0.1765	0.5000	0.1714	0.4000	0.0833	0.1429
95	0.3023	0.1667	0.1765	0.1818	0.1250	0.0000	0.1818	0.1667	0.2000	0.2083	0.1176	0.5000	0.1143	0.3333	0.1250	0.0714

(continued)

Table A.6a: Proportion of Participants by Subgroup Who Chose Educational Financing Over Cash — Male Participants (Cont'd)

	Age 18–24						Age 25–44					Age 45 and Older				
	High School Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student
Sample:	43	30	17	11	16	2	11	78	25	48	17	4	35	15	24	14
Decision																
96	0.3721	0.2333	0.3529	0.2727	0.1250	0.0000	0.2727	0.2692	0.3200	0.3125	0.1765	0.5000	0.1429	0.5333	0.1250	0.1429
97	0.4884	0.7000	0.1176	0.0000	0.2500	0.0000	0.1818	0.0513	0.2000	0.0833	0.0588	0.2500	0.0857	0.2000	0.0000	0.0000
98	0.6047	0.7333	0.1765	0.3636	0.3125	0.0000	0.4545	0.1410	0.3600	0.1667	0.1176	0.2500	0.1429	0.4667	0.0000	0.0000
99	0.7907	0.8000	0.4118	0.6364	0.4375	0.0000	0.5455	0.2949	0.5600	0.3750	0.2353	0.5000	0.2286	0.4667	0.0417	0.0714
100	0.7907	0.8333	0.5294	0.8182	0.4375	0.0000	0.6364	0.3590	0.6400	0.5000	0.2353	0.5000	0.3143	0.6667	0.1250	0.2143
Sample:	43	6	0	1	0	1	2	5	1	1	1	0	0	0	0	2
Decision																
101	0.3953	0.8333		1.0000		0.0000	1.0000	0.2000	0.0000	1.0000	1.0000					1.0000
102	0.5116	0.8333		1.0000		0.0000	1.0000	0.2000	0.0000	1.0000	1.0000					1.0000

Table A.6b: Proportion of Participants by Subgroup Who Chose Educational Financing Over Cash — Female Participants

	Age 18–24						Age 25–44					Age 45 and Older				
	High School Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unemployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unemployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unemployed	Neither in Labour Market nor Student
Sample:	37	42	21	19	8	4	11	88	64	50	46	3	21	34	16	27
Decision																
d73	0.3784	0.7619	0.1429	0.3684	0.3750	0.0000	0.5455	0.0909	0.0625	0.0600	0.1304	0.0000	0.0476	0.0588	0.0625	0.0370
d74	0.5405	0.8095	0.1429	0.6316	0.5000	0.2500	0.5455	0.1591	0.0938	0.1400	0.1957	0.3333	0.0952	0.0882	0.1875	0.0370
d75	0.7838	0.8810	0.1905	0.7368	0.7500	0.5000	0.5455	0.1705	0.1719	0.3200	0.2609	0.6667	0.1905	0.2059	0.3125	0.0741
d76	0.8649	0.9048	0.2381	0.7368	0.7500	0.7500	0.6364	0.1705	0.2500	0.3200	0.2826	0.6667	0.1905	0.2647	0.3125	0.1111
d77	0.4865	0.7857	0.0952	0.6842	0.5000	0.2500	0.5455	0.1364	0.1406	0.2000	0.2174	0.6667	0.0476	0.1176	0.2500	0.1111
d78	0.3784	0.5952	0.0476	0.3158	0.5000	0.0000	0.4545	0.0795	0.0625	0.1000	0.0870	0.3333	0.0000	0.0882	0.1875	0.0370
d79	0.2432	0.2857	0.0952	0.3684	0.3750	0.2500	0.0000	0.0341	0.0469	0.1000	0.0870	0.0000	0.0476	0.0882	0.0625	0.0370
d80	0.3514	0.3095	0.0952	0.5263	0.5000	0.5000	0.0909	0.0682	0.0938	0.1400	0.1522	0.0000	0.0476	0.1176	0.1875	0.0370
d81	0.2973	0.3095	0.0952	0.4211	0.3750	0.2500	0.0909	0.0568	0.0781	0.1400	0.0870	0.0000	0.0000	0.0882	0.1250	0.0370
d82	0.3514	0.3810	0.0952	0.5263	0.5000	0.5000	0.0909	0.0909	0.1250	0.1800	0.1522	0.3333	0.0476	0.1471	0.2500	0.0370
d83	0.3784	0.5476	0.0952	0.2632	0.5000	0.0000	0.3636	0.0227	0.0781	0.0400	0.0870	0.0000	0.0000	0.0588	0.0625	0.0000
d84	0.4595	0.6905	0.0952	0.5789	0.5000	0.0000	0.4545	0.0795	0.1719	0.1400	0.0870	0.0000	0.0000	0.0588	0.1250	0.0370
d85	0.7027	0.8095	0.1429	0.6842	0.7500	0.5000	0.5455	0.1705	0.1875	0.2200	0.1087	0.3333	0.0000	0.0882	0.1250	0.0370
d86	0.7297	0.8333	0.1905	0.7368	0.7500	0.5000	0.5455	0.1932	0.1875	0.3000	0.1957	0.3333	0.0476	0.1471	0.1875	0.0741
d87	0.4054	0.6429	0.2381	0.6316	0.3750	0.5000	0.6364	0.2159	0.2813	0.3200	0.1957	0.0000	0.1905	0.2941	0.3125	0.1481
d88	0.6216	0.7143	0.3810	0.7895	0.6250	0.7500	0.6364	0.4091	0.4375	0.4800	0.2391	0.6667	0.2381	0.3824	0.4375	0.1481
d89	0.8108	0.8810	0.5238	0.7895	0.7500	1.0000	0.6364	0.5114	0.6406	0.6400	0.3261	1.0000	0.4286	0.5294	0.5000	0.2222
d90	0.8378	0.8810	0.6667	0.8947	0.6250	1.0000	0.6364	0.5341	0.6719	0.6200	0.3913	0.6667	0.4286	0.5294	0.5000	0.2222
d91	0.5946	0.7619	0.3810	0.7895	0.7500	0.5000	0.6364	0.3523	0.4219	0.4800	0.2391	0.3333	0.3333	0.3824	0.4375	0.1852
d92	0.4054	0.5476	0.1905	0.6316	0.6250	0.5000	0.6364	0.1818	0.2344	0.3400	0.1087	0.3333	0.0952	0.2941	0.2500	0.1481
d93	0.2162	0.2619	0.0952	0.3684	0.3750	0.5000	0.0000	0.0568	0.0938	0.1400	0.0652	0.0000	0.1429	0.1765	0.1250	0.0741
d94	0.3514	0.3095	0.0952	0.4737	0.5000	0.7500	0.0000	0.1136	0.1875	0.1800	0.1087	0.0000	0.0952	0.1765	0.2500	0.0741
d95	0.2973	0.2619	0.0952	0.3684	0.3750	0.2500	0.0000	0.1023	0.0938	0.2000	0.0652	0.0000	0.0952	0.1765	0.3125	0.0741

(continued)

Table A.6b: Proportion of Participants by Subgroup Who Chose Educational Financing Over Cash — Female Participants (Cont'd)

	Age 18–24						Age 25–44					Age 45 and Older				
	High School Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor Student	Post-secondary Student	Full-Time Employed	Part-Time Employed	Unem-ployed	Neither in Labour Market nor student
Sample:	37	42	21	19	8	4	11	88	64	50	46	3	21	34	16	27
Decision																
d96	0.3243	0.3333	0.0952	0.4737	0.5000	1.0000	0.0000	0.1250	0.1875	0.2200	0.1522	0.0000	0.0476	0.1765	0.3125	0.0741
d97	0.4054	0.5238	0.0952	0.2632	0.5000	0.2500	0.4545	0.0455	0.0781	0.0600	0.0435	0.0000	0.0952	0.0882	0.0625	0.0741
d98	0.4865	0.6667	0.0952	0.5789	0.5000	0.2500	0.5455	0.1136	0.1875	0.2000	0.1087	0.0000	0.0952	0.1765	0.1875	0.0741
d99	0.6757	0.8095	0.1905	0.7368	0.7500	0.7500	0.6364	0.3068	0.3906	0.3600	0.1522	0.3333	0.1905	0.2353	0.3750	0.1111
d100	0.7297	0.8095	0.3333	0.7895	0.7500	0.7500	0.6364	0.3523	0.4219	0.4400	0.2174	0.3333	0.2857	0.3235	0.4375	0.1481
Sample:	36	4	0	0	0	1	1	4	7	2	1	0	1	1	2	1
Decision																
d101	0.3333	0.2500				0.0000	0.0000	0.0000	0.1429	0.5000	0.0000		0.0000	0.0000	0.5000	0.0000
d102	0.4167	0.2500				0.0000	0.0000	0.0000	0.1429	0.5000	1.0000		0.0000	0.0000	1.0000	0.0000

Table A.7: Population Weights by Subgroup

	Under Age 25	Age 25–44	Age 45 and Older	
Female				
Full-time employed	0.0257	0.1333	0.0844	
Part-time employed	0.0289	0.0359	0.0287	
Unemployed	0.0073	0.0121	0.0064	
Other	0.0334	0.0420	0.0611	
Male				
Full-time employed	0.0352	0.1831	0.1285	
Part-time employed	0.0218	0.0094	0.0112	
Unemployed	0.0103	0.0151	0.0086	
Other	0.0321	0.0170	0.0286	
	0.1946	0.4479	0.3574	1.0000

Source: Statistics Canada, CANSIM II, Table 282-0002.

Table A.8: Elasticities of Demand for $1,000 in Grant Funding[a]

	Age 18–24					Age 25–44				Age 45 and Older			
	High School Student	Full-Time Employed	Part-Time Employed	Unemployed	Other[d]	Full-Time Employed	Part-Time Employed	Unemployed	Other	Full-Time Employed	Part-Time Employed	Unemployed	Other
Female participants													
Elasticity of demand (D76, D75)[b]	0.148	0.333	0.000	0.000	0.075	0.000	0.556	0.000	0.158	0.000	0.375	0.000	0.333
Elasticity of demand (D75, D77)	0.702	1.000	0.111	0.600	0.205	0.333	0.300	0.692	0.176	1.800	0.818	0.333	0.333[e]
Elasticity of demand (D77, D78)[c]	0.307	0.818	0.904	0.000	0.374	0.646	0.944	0.818	0.687	2.455	0.351	0.351	1.052
Male participants													
Elasticity of demand (D76, D75)[b]	0.042	0.176	0.000	0.000	0.000	0.077	0.158	0.220	0.000	0.000	1.000	0.000	0.000
Elasticity of demand (D75, D77)	0.134	0.692	1.667	0.500	0.057	1.071	0.176	0.257	0.652	1.286	0.000	3.000	0.000
Elasticity of demand (D77, D78)[c]	0.509	1.052	2.455	0.273	0.382	0.944	0.164	1.116	0.491	0.000	1.227	0.000	0.273

Notes: [a]Decision 76, price of $1,000 grant = 0.05
Decision 75, price of $1,000 grant = 0.10
Decision 77, price of $1,000 grant = 0.20
Decision 78, price of $1,000 grant = 0.475
Population of each subgroup and proportion of take-up of $1,000 grant summarized in Table A.5.
[b]Least expensive grants for participants to accept.
[c]Most expensive grants for the participants to accept.
[d]Does not include high school students.
[e]Elasticity of demand is positive for this subgroup and price range.

A.9: Description of Procedure Used to Produce Individual Mathematical Competency Scores From Numeracy Assessment

The data used to produce respondent individual ability scores contained dichotomous item scores indicating either right or wrong response to each question on the Numeracy assessment, which is one of the components of the Adult Literacy and Lifeskills Survey. An item response theory (IRT) two-parameter logistic model (Birnbaum, 1968), which takes into consideration item discrimination power and item difficulty, was employed to produce the ability scores for all respondents.

The ability scores were estimated using the existing item parameters that were obtained from the pilot International Life Skills Survey, Numeracy component, conducted in the first quarter of 2001. The expected a posteriori (EAP) estimation method was used to produce individual scale scores. This method was appropriate to use because it allows for estimation of scores for examinees with any response pattern (including a perfect score) and has a smaller average error in the population than any other method (Bock, 1972).

The obtained estimated ability scores were originally expressed in the theta metric with a mean of 0 and a standard deviation of 1. In order to facilitate the score interpretation the original theta scores were converted into T-scores with a mean of 50 and a standard deviation of 10 using linear transformation.

Table A.10: Factors Related to Intensity of Preference for $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Basic/Control variables								
Employer pays	**-0.738** ***	-4.23	**-0.799** ***	-4.43	**-0.597** **	-3.04	**-0.587** **	-3.00
Age 18–24	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Age 25–44	**-0.912** ***	-8.63	**-0.895** ***	-8.09	**-0.459** ***	-3.42	-0.464 ***	-3.41
Age 45 and older	**-1.250** ***	-9.43	**-1.301** ***	-9.26	**-0.841** ***	-5.06	-0.843 ***	-4.97
Male	0.109	1.22	0.131	1.40	0.125	1.25	0.128	1.28
Female	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	-0.088	-0.70	**-0.313** *	-2.33	**-0.266**	-1.87	**-0.292** *	-2.04
Mathematical competency high	0.028	0.18	**-0.395** *	-2.31	**-0.348**	-1.89	**-0.383** *	-2.06
Dispositional variables								
Willingness to save			**0.025** ***	5.23	**0.025** ***	5.11	**0.024** ***	4.87
Risky decisions			0.003	0.12	-0.004	-0.15	-0.008	-0.31
Saved for post-secondary education			**0.325** **	3.03	**0.319** **	2.81	**0.312** **	2.73
Planning ability			0.001	0.30	-0.002	-0.52	-0.002	-0.42
Locus of control			0.016	1.11	0.010	0.68	0.011	0.71
Parent high school/tech			0.068	0.71	0.079	0.81	0.073	0.74
Parent university			0.063	0.61	-0.051	-0.47	-0.062	-0.56
Positive attitude about education and labour market			**0.084** **	2.98	**0.079** **	2.68	**0.077** **	2.60
School performance			-0.011	-0.11	-0.051	-0.50	-0.061	-0.60
Peers liked school			0.011	0.10	-0.069	-0.63	-0.073	-0.66
Liked school			**0.242** *	2.26	0.147	1.32	0.143	1.28

(continued)

Table A.10: Factors Related to Intensity of Preference for $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Situational variables								
Post-secondary education experience					0.012	0.08	-0.045	-0.27
Hold diploma					0.029	0.37	0.033	0.42
No children					0.200	1.37	0.183	1.24
Married					**-0.226**	-1.95	**-0.225**	-1.93
Non-urban resident					0.068	0.53	0.073	0.55
Unemployed					0.173	1.01	0.180	1.04
Post-secondary student					**1.154** ***	5.54	**1.175** ***	5.58
Part-time employed					0.223	1.32	0.244	1.44
Full-time employed					-0.194	-1.13	-0.182	-1.06
Neither in labour market nor student					*ref*	*ref*	*ref*	*ref*
Current student debt					0.107	0.93	0.081	0.69
Burdened by debt					-0.014	-0.13	-0.006	-0.05
Current debt					**0.203**	1.88	**0.196**	1.81
Household income low					0.028	0.24	0.031	0.26
Household income median					*ref*	*ref*	*ref*	*ref*
Household income high					-0.119	-0.97	-0.115	-0.93
Immigrant					0.287	1.40	0.259	1.25
Has children under 5 years of age					0.099	0.57	0.094	0.53
Disabled					0.037	0.37	0.107	0.89
Good market understanding					0.105	1.05	0.091	0.90
Leisure TV					-0.387	-0.95	-0.353	-0.86
Institutional variables								
High school diploma							0.164	0.87
High school equivalency							0.226	0.90

(continued)

Table A.10: Factors Related to Intensity of Preference for $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
ON							-0.317	-1.53
BC							-0.255	-1.14
NS							-0.282	-1.24
AB							**-0.409**	-1.81
QC and NF							*ref*	*ref*
Knows government aid							0.030	0.72
Delta1	-0.520	-3.54	1.118	2.14	1.253	2.10	1.108	1.75
Delta2	-0.409	-2.79	1.234	2.36	1.379	2.31	1.235	1.95
Delta3	-0.127	-0.87	1.537	2.94	1.712	2.87	1.571	2.48
Delta4	0.275	1.88	1.976	3.76	2.210	3.69	2.072	3.27
Log likelihood	-843.117		-811.329		-765.294		-762.838	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.11: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students)

		Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Employer pays		0.8414	0.1729	0.0228	0.0121	0.0481	0.0318	0.0447	0.0448	0.0430	0.0994
Employer does not pay		0.6018	0.2436	0.0376	0.0114	0.0912	0.0312	0.1071	0.0519	0.1622	0.1975
Age 18–24		0.3319	0.2356	0.0362	0.0141	0.1005	0.0316	0.1506	0.0399	0.3808	0.2563
Age 25–44		0.6790	0.1887	0.0377	0.0113	0.0880	0.0323	0.0947	0.0499	0.1007	0.1180
Age 45 and older		0.7699	0.1520	0.0322	0.0123	0.0714	0.0337	0.0695	0.0461	0.0570	0.0662
Male		0.6083	0.2478	0.0370	0.0126	0.0897	0.0344	0.1055	0.0547	0.1595	0.1961
Female		0.6417	0.2480	0.0354	0.0122	0.0843	0.0334	0.0966	0.0544	0.1420	0.1905
Mathematical competency low		0.6437	0.2235	0.0374	0.0118	0.0891	0.0328	0.1007	0.0528	0.1291	0.1597
Mathematical competency medium		0.6315	0.2515	0.0356	0.0124	0.0853	0.0341	0.0989	0.0552	0.1487	0.1947
Mathematical competency high		0.5962	0.2555	0.0368	0.0126	0.0896	0.0340	0.1063	0.0542	0.1712	0.2116
Least willing to save	save<=9	0.7426	0.2117	0.0310	0.0126	0.0702	0.0346	0.0729	0.0526	0.0833	0.1361
Less than average willing to save	10<=save<=19	0.6587	0.2151	0.0372	0.0112	0.0879	0.0321	0.0978	0.0527	0.1185	0.1460
More than average willing to save	20<=save<=29	0.5715	0.2465	0.0384	0.0118	0.0947	0.0312	0.1142	0.0508	0.1812	0.2056
Most willing to save	30<=save	0.4672	0.2764	0.0367	0.0138	0.0944	0.0338	0.1252	0.0504	0.2765	0.2703
Risky decisions low	rd<=3	0.6368	0.2560	0.0349	0.0124	0.0832	0.0336	0.0960	0.0543	0.1491	0.2031
Risky decisions neutral	4<=rd<=5	0.6103	0.2438	0.0373	0.0123	0.0904	0.0337	0.1060	0.0544	0.1561	0.1897
Risky decisions high	6<=rd	0.6359	0.2357	0.0368	0.0123	0.0883	0.0347	0.1014	0.0555	0.1376	0.1709
Saved for post-secondary education		0.5683	0.2569	0.0376	0.0121	0.0929	0.0325	0.1133	0.0534	0.1880	0.2141
Not saved for post-secondary education		0.7492	0.1752	0.0329	0.0122	0.0737	0.0333	0.0740	0.0475	0.0702	0.1010
Planning ability low	pa<=89	0.6004	0.2199	0.0397	0.0107	0.0967	0.0308	0.1128	0.0520	0.1504	0.1642
Planning ability medium	90<=pa<=99	0.6453	0.2485	0.0352	0.0123	0.0837	0.0338	0.0959	0.0548	0.1398	0.1881
Planning ability high	100<=pa<=109	0.6542	0.2344	0.0359	0.0120	0.0851	0.0334	0.0961	0.0544	0.1288	0.1696
Planning ability very high	110<=pa	0.6060	0.2828	0.0337	0.0136	0.0816	0.0357	0.0979	0.0559	0.1808	0.2389
Locus of control low	16 <=loc	0.6222	0.2361	0.0375	0.0111	0.0904	0.0320	0.1048	0.0546	0.1451	0.1742
Locus of control medium	14<=loc<=15	0.6415	0.2385	0.0361	0.0127	0.0860	0.0349	0.0973	0.0539	0.1391	0.1882
Locus of control high	11<=loc<=13	0.6232	0.2390	0.0372	0.0119	0.0898	0.0335	0.1045	0.0554	0.1454	0.1746

(continued)

Table A.11: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

		Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Locus of control very high	loc<=10	0.6205	0.2843	0.0329	0.0134	0.0792	0.0346	0.0943	0.0545	0.1730	0.2363
Parent high school/tech		0.6178	0.2476	0.0365	0.0122	0.0878	0.0331	0.1018	0.0526	0.1561	0.2022
No parent high school/tech		0.6422	0.2490	0.0353	0.0125	0.0848	0.0352	0.0983	0.0579	0.1394	0.1774
Parent university		0.5524	0.2857	0.0352	0.0131	0.0883	0.0347	0.1122	0.0573	0.2118	0.2370
No parent university		0.6602	0.2223	0.0364	0.0120	0.0859	0.0336	0.0953	0.0527	0.1222	0.1630
Positive attitude about education and labour market — Low	posatt<=7	0.6771	0.2209	0.0355	0.0129	0.0834	0.0360	0.0922	0.0554	0.1118	0.1469
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.6154	0.2461	0.0369	0.0116	0.0891	0.0323	0.1043	0.0541	0.1543	0.1904
Positive attitude about education and labour market — High	10<=posatt	0.6094	0.2650	0.0353	0.0129	0.0854	0.0346	0.1009	0.0546	0.1691	0.2200
School performance high		0.6136	0.2580	0.0358	0.0126	0.0866	0.0340	0.1020	0.0549	0.1620	0.2068
School performance low		0.6426	0.2362	0.0363	0.0121	0.0867	0.0339	0.0987	0.0545	0.1357	0.1755
Peers' performance high		0.6263	0.2538	0.0356	0.0124	0.0856	0.0338	0.0996	0.0548	0.1530	0.1999
Peers' performance low		0.6302	0.2316	0.0374	0.0123	0.0898	0.0341	0.1032	0.0543	0.1394	0.1707
Liked school		0.5860	0.2579	0.0369	0.0124	0.0899	0.0327	0.1072	0.0519	0.1799	0.2215
Disliked school		0.6427	0.2430	0.0357	0.0123	0.0854	0.0343	0.0979	0.0555	0.1383	0.1801
Post-secondary education experience		0.6203	0.2544	0.0358	0.0125	0.0864	0.0342	0.1012	0.0552	0.1562	0.2002
No post-secondary education experience		0.6729	0.1988	0.0375	0.0114	0.0878	0.0325	0.0955	0.0511	0.1065	0.1294
Diploma = 1		0.6128	0.2623	0.0355	0.0125	0.0859	0.0341	0.1017	0.0558	0.1641	0.2091
Diploma = 2		0.6773	0.1888	0.0378	0.0114	0.0884	0.0328	0.0952	0.0502	0.1013	0.1181
Diploma = 3		0.6410	0.2067	0.0388	0.0123	0.0930	0.0346	0.1047	0.0532	0.1225	0.1350
Diploma = 4		0.7395	0.1390	0.0359	0.0148	0.0811	0.0375	0.0806	0.0443	0.0630	0.0446
Diploma = 5	(1 obs.)	0.8785		0.0236		0.0463		0.0350		0.0165	
No children		0.5824	0.2584	0.0370	0.0124	0.0909	0.0333	0.1098	0.0542	0.1799	0.2119
Has children		0.7527	0.1615	0.0334	0.0118	0.0748	0.0330	0.0743	0.0472	0.0648	0.0791
Married		0.7371	0.1830	0.0335	0.0125	0.0757	0.0346	0.0772	0.0496	0.0764	0.1090
Not married		0.5593	0.2590	0.0376	0.0120	0.0934	0.0317	0.1148	0.0527	0.1948	0.2183

(continued)

Table A.11: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

		Prob(IE_i = 0)		Prob(IE_i = 1)		Prob(IE_i = 2)		Prob(IE_i = 3)		Prob(IE_i = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Non-urban resident		0.6523	0.2093	0.0380	0.0111	0.0903	0.0329	0.1007	0.0540	0.1187	0.1376
Urban resident		0.6215	0.2562	0.0356	0.0126	0.0858	0.0341	0.1004	0.0549	0.1567	0.2030
Neither in labour market or student		0.7526	0.1462	0.0343	0.0110	0.0764	0.0307	0.0748	0.0434	0.0619	0.0689
Unemployed		0.6158	0.1727	0.0424	0.0086	0.1023	0.0275	0.1157	0.0482	0.1238	0.0979
Post-secondary student		0.1513	0.1243	0.0273	0.0131	0.0865	0.0322	0.1602	0.0349	0.5747	0.1903
Part-time employed		0.6274	0.1787	0.0415	0.0091	0.0996	0.0293	0.1120	0.0502	0.1196	0.1006
Full-time employed		0.7661	0.1480	0.0328	0.0130	0.0728	0.0352	0.0712	0.0462	0.0571	0.0577
Current student debt		0.5540	0.2650	0.0372	0.0126	0.0930	0.0337	0.1157	0.0555	0.2002	0.2208
No current student debt		0.6548	0.2361	0.0356	0.0122	0.0842	0.0337	0.0947	0.0533	0.1306	0.1780
Burdened by debt		0.6384	0.2363	0.0366	0.0118	0.0873	0.0334	0.0995	0.0543	0.1382	0.1785
Not burdened by debt		0.6174	0.2583	0.0356	0.0128	0.0860	0.0345	0.1013	0.0550	0.1597	0.2048
Current debt		0.5878	0.2491	0.0377	0.0119	0.0922	0.0329	0.1101	0.0542	0.1722	0.2033
No current debt		0.6430	0.2464	0.0354	0.0125	0.0844	0.0341	0.0966	0.0545	0.1406	0.1883
Household income low		0.5759	0.2505	0.0380	0.0116	0.0932	0.0311	0.1122	0.0522	0.1808	0.2097
Household income medium		0.6624	0.2288	0.0357	0.0124	0.0841	0.0337	0.0934	0.0518	0.1243	0.1722
Household income high		0.6524	0.2585	0.0338	0.0130	0.0808	0.0364	0.0935	0.0589	0.1394	0.1895
Immigrant		0.5651	0.2435	0.0391	0.0120	0.0964	0.0316	0.1164	0.0499	0.1830	0.2062
Not immigrant		0.6306	0.2483	0.0359	0.0124	0.0861	0.0340	0.0996	0.0548	0.1478	0.1923
Has children under 5 years of age		0.6988	0.1782	0.0371	0.0107	0.0858	0.0321	0.0904	0.0510	0.0879	0.0937
No children under 5 years of age		0.6217	0.2531	0.0359	0.0125	0.0865	0.0342	0.1011	0.0550	0.1548	0.1989
Disabled		0.6449	0.2400	0.0359	0.0122	0.0856	0.0340	0.0976	0.0548	0.1360	0.1779
Not disabled		0.5904	0.2614	0.0364	0.0126	0.0889	0.0337	0.1064	0.0541	0.1780	0.2191
Good market understanding		0.6095	0.2546	0.0363	0.0128	0.0877	0.0343	0.1031	0.0539	0.1634	0.2083
Poor market understanding		0.6385	0.2438	0.0359	0.0121	0.0859	0.0337	0.0988	0.0551	0.1408	0.1824
Leisure TV — Low	Leisure TV < 0.33	0.6559	0.2456	0.0347	0.0126	0.0820	0.0341	0.0925	0.0535	0.1349	0.1909
Leisure TV — High	0.33<=Leisure TV	0.6033	0.2483	0.0372	0.0121	0.0905	0.0333	0.1072	0.0548	0.1619	0.1942
High school diploma		0.6166	0.2552	0.0359	0.0126	0.0869	0.0343	0.1021	0.0553	0.1584	0.2012

(continued)

Table A.11: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

	Prob($IE_i = 0$)		Prob($IE_i = 1$)		Prob($IE_i = 2$)		Prob($IE_i = 3$)		Prob($IE_i = 4$)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
No high school diploma	0.6881	0.1945	0.0368	0.0109	0.0852	0.0317	0.0910	0.0501	0.0989	0.1262
High school equivalency	0.6688	0.1978	0.0380	0.0107	0.0894	0.0324	0.0979	0.0536	0.1060	0.1166
No high school equivalency or high school diploma	0.6246	0.2510	0.0359	0.0125	0.0865	0.0340	0.1006	0.0548	0.1524	0.1966
ON	0.6404	0.2426	0.0359	0.0121	0.0860	0.0338	0.0988	0.0553	0.1388	0.1785
BC	0.5516	0.2497	0.0388	0.0124	0.0970	0.0326	0.1202	0.0530	0.1924	0.2020
NS	0.6610	0.2113	0.0373	0.0112	0.0877	0.0320	0.0966	0.0510	0.1174	0.1515
AB	0.6694	0.2415	0.0343	0.0124	0.0808	0.0347	0.0906	0.0554	0.1248	0.1757
QC, NF	0.1069	0.1740	0.0170	0.0249	0.0517	0.0683	0.0928	0.0874	0.7316	0.3545
Know government aid	0.6217	0.2673	0.0347	0.0127	0.0838	0.0339	0.0991	0.0556	0.1607	0.2102
Don't know government aid	0.6693	0.2442	0.0341	0.0120	0.0800	0.0328	0.0893	0.0536	0.1273	0.1847

Table A.12: Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 80 Observations, High School Students)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Basic/Control variables								
Male	0.236	0.93	0.388	1.17	0.582	1.58	0.556	1.47
Female	ref	ref	ref	ref	ref	ref	ref	ref
Mathematical competency low	ref	ref	ref	ref	ref	ref	ref	ref
Mathematical competency medium	**0.673** *	2.30	-0.049	-0.13	-0.111	-0.27	-0.142	-0.34
Mathematical competency high	0.901	1.46	0.251	0.36	0.244	0.33	0.222	0.29
Dispositional variables								
Willingness to save			**0.063** **	2.99	**0.074** ***	3.26	**0.076** ***	3.23
Risky decisions			0.138	1.25	0.174	1.48	0.173	1.47
Saved for post-secondary education			-0.304	-0.84	-0.247	-0.64	-0.263	-0.67
Planning ability			**0.043** ***	3.72	**0.043** ***	3.51	**0.043** ***	3.49
Locus of control			-0.042	-0.72	-0.032	-0.52	-0.029	-0.47
Parent high school/tech			-0.534	-1.48	-0.480	-1.16	-0.470	-1.13
Parent university			-0.120	-0.35	-0.070	-0.19	-0.043	-0.11
Positive attitude about education and labour market			**0.155**	1.68	**0.185**	1.80	**0.198**	1.81
Claudia			**0.590** *	2.04	0.473	1.43	0.455	1.36
School performance			0.436	1.32	0.460	1.24	0.449	1.20
Peers liked school			0.261	0.77	0.172	0.47	0.165	0.45
Situational variables								
Burdened by debt					0.577	1.26	0.593	1.28
Current debt					-0.597	-1.50	-0.630	-1.53
Household income low					-0.105	-0.16	-0.114	-0.18
Household income medium					ref	ref	ref	ref
Household income high					-0.109	-0.27	-0.114	-0.28

(continued)

Table A.12: Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (Ordered Probit, 80 Observations, High School Students) (Cont'd)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Good market understanding					0.179	0.53	0.188	0.55
Leisure TV					-2.180	-1.29	-2.192	-1.30
Institutional variables								
Knows government aid							-0.046	-0.33
Delta1	-0.449	-1.60	5.053	2.80	5.013	2.56	5.045	2.56
Delta2	-0.295	-1.07	5.261	2.91	5.228	2.67	5.260	2.67
Delta3	0.313	1.13	6.140	3.36	6.135	3.10	6.171	3.10
Delta4	0.860	2.97	7.035	3.77	7.090	3.51	7.128	3.51
Log likelihood	-108.898		-83.083		-80.005			

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.13: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash
(80 Observations, High School Students)

		Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Male		0.1206	0.2235	0.0244	0.0272	0.1468	0.1230	0.2184	0.1229	0.4899	0.3308
Female		0.1907	0.2234	0.0414	0.0323	0.2059	0.1295	0.2133	0.1188	0.3487	0.3422
Mathematical competency low		0.2991	0.2682	0.0527	0.0331	0.2288	0.1347	0.1839	0.0946	0.2355	0.3188
Mathematical competency medium		0.1115	0.1949	0.0263	0.0271	0.1587	0.1229	0.2245	0.1302	0.4791	0.3331
Mathematical competency high		0.0520	0.0936	0.0192	0.0299	0.1347	0.1409	0.2482	0.0385	0.5459	0.2930
Least willing to save	save<=9	0.3643	0.2800	0.0607	0.0261	0.2678	0.1068	0.2013	0.1193	0.1059	0.1390
Less than average willing to save	10<=save<=19	0.1948	0.2294	0.0422	0.0297	0.2188	0.1177	0.2409	0.1063	0.3032	0.2865
More than average willing to save	20<=save<=29	0.0726	0.1640	0.0185	0.0244	0.1225	0.1185	0.2058	0.1323	0.5807	0.3261
Most willing to save	30<=save	0.0094	0.0137	0.0058	0.0080	0.0648	0.0762	0.1753	0.1347	0.7448	0.2301
Risky decisions — Low	rd<=3	0.1718	0.2432	0.0338	0.0317	0.1771	0.1319	0.2093	0.1223	0.4080	0.3502
Risky decisions — Neutral	4<=rd<=5	0.1489	0.2212	0.0322	0.0299	0.1761	0.1248	0.2237	0.1210	0.4191	0.3345
Risky decisions — High	6<=rd	0.0688	0.1051	0.0234	0.0314	0.1474	0.1461	0.2167	0.1211	0.5437	0.3527
Saved for post-secondary education		0.1429	0.2192	0.0309	0.0300	0.1735	0.1296	0.2210	0.1230	0.4317	0.3390
Not saved for post-secondary education		0.1799	0.2421	0.0356	0.0329	0.1757	0.1293	0.2030	0.1146	0.4058	0.3550
Planning ability low	pa<=89	0.2752	0.2595	0.0520	0.0273	0.2490	0.1066	0.2284	0.1155	0.1954	0.2277
Planning ability medium	90<=pa<=99	0.0634	0.1405	0.0188	0.0226	0.1359	0.1065	0.2458	0.1155	0.5362	0.2821
Planning ability high	100<=pa<=109	0.0636	0.1582	0.0157	0.0249	0.1026	0.1108	0.1907	0.1216	0.6273	0.3173
Planning ability very high	110<=pa	0.0392	0.0787	0.0139	0.0260	0.0889	0.1375	0.1404	0.1254	0.7175	0.3437
Locus of control low	16 <=loc	0.3058	0.3056	0.0465	0.0294	0.2083	0.1097	0.1997	0.1332	0.2397	0.2861
Locus of control medium	14<=loc<=15	0.0873	0.1007	0.0303	0.0293	0.1865	0.1434	0.2320	0.1290	0.4639	0.3547
Locus of control high	11<=loc<=13	0.0843	0.1208	0.0271	0.0295	0.1700	0.1291	0.2442	0.1059	0.4743	0.3142
Locus of control very high	loc<=10	0.0307	0.0888	0.0096	0.0237	0.0679	0.1027	0.1622	0.0846	0.7296	0.2591
Parent high school/tech		0.1811	0.2391	0.0365	0.0320	0.1869	0.1309	0.2109	0.1194	0.3846	0.3460
No parent high school/tech		0.1131	0.1994	0.0261	0.0280	0.1559	0.1253	0.2234	0.1230	0.4815	0.3317
Parent university		0.1617	0.2420	0.0312	0.0308	0.1631	0.1230	0.2100	0.1197	0.4340	0.3417

(continued)

Table A.13: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Full-Time Educational Grant Over Cash (80 Observations, High School Students) (Cont'd)

		Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
No parent university		0.1440	0.2080	0.0333	0.0309	0.1857	0.1351	0.2224	0.1221	0.4147	0.3453
Positive attitude about education and labour market — Low	posatt<=7	0.2922	0.3136	0.0440	0.0305	0.2051	0.1063	0.2135	0.1343	0.2451	0.2696
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.1727	0.2190	0.0382	0.0319	0.1949	0.1392	0.2078	0.1156	0.3865	0.3590
Positive attitude about education and labour market — High	10<=posatt	0.0483	0.0877	0.0179	0.0239	0.1297	0.1179	0.2281	0.1215	0.5761	0.2980
Claudia high (positive attitude in successful case)		0.1088	0.1695	0.0285	0.0303	0.1639	0.1300	0.2175	0.1244	0.4814	0.3450
Claudia low (negative attitude in successful case)		0.2020	0.2672	0.0364	0.0309	0.1854	0.1281	0.2144	0.1173	0.3618	0.3306
School performance high		0.0755	0.1290	0.0232	0.0277	0.1481	0.1277	0.2221	0.1233	0.5310	0.3281
School performance low		0.2268	0.2694	0.0408	0.0312	0.1989	0.1263	0.2102	0.1186	0.3233	0.3262
Peers' performance high		0.1191	0.1864	0.0293	0.0297	0.1683	0.1312	0.2226	0.1160	0.4606	0.3370
Peers' performance low		0.2620	0.2992	0.0415	0.0325	0.1927	0.1219	0.1949	0.1343	0.3088	0.3385
Burdened by debt		0.1449	0.1876	0.0368	0.0327	0.2000	0.1283	0.2369	0.1138	0.3814	0.3291
Not burdened by debt		0.1546	0.2325	0.0313	0.0304	0.1691	0.1292	0.2120	0.1219	0.4330	0.3455
Current debt		0.2818	0.3056	0.0447	0.0306	0.2131	0.1170	0.2132	0.1354	0.2473	0.2847
No current debt		0.1233	0.1928	0.0294	0.0302	0.1651	0.1305	0.2167	0.1177	0.4655	0.3422
Household income low		0.0879	0.1409	0.0268	0.0310	0.1660	0.1294	0.2304	0.1480	0.4889	0.3526
Household income medium		0.0899	0.2173	0.0179	0.0208	0.1292	0.1267	0.2127	0.1412	0.5502	0.3377
Household income high		0.1855	0.2336	0.0382	0.0321	0.1914	0.1277	0.2150	0.1100	0.3698	0.3338
Good market understanding		0.0784	0.1330	0.0236	0.0285	0.1438	0.1408	0.1975	0.1283	0.5567	0.3601
Poor market understanding		0.1911	0.2521	0.0366	0.0311	0.1896	0.1206	0.2255	0.1161	0.3573	0.3140
Leisure TV — Low	Leisure TV < 0.33	0.1694	0.2370	0.0342	0.0328	0.1764	0.1366	0.1989	0.1273	0.4211	0.3684
Leisure TV — High	0.33<=Leisure TV	0.1422	0.2182	0.0309	0.0295	0.1726	0.1247	0.2274	0.1153	0.4269	0.3262
Know government aid		0.1311	0.1912	0.0318	0.0329	0.1691	0.1468	0.2006	0.1070	0.4675	0.3705
Don't know government aid		0.2014	0.2847	0.0335	0.0303	0.1757	0.1216	0.2158	0.1329	0.3736	0.3328

Table A.14: Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students)

	Coefficient		t-statistic	Coefficient		t-statistic	Coefficient		t-statistic	Coefficient		t-statistic
Basic/Control variables												
Employer pays	**-0.453**	***	-3.38	**-0.506**	***	-3.66	**-0.412**	**	-2.76	**-0.419**	**	-2.79
Age 18–24	*ref*		*ref*	*ref*		*ref*	*ref*		*ref*	*ref*		*ref*
Age 25–44	**-0.569**	***	-5.62	**-0.536**	***	-5.05	**-0.313**	*	-2.47	**-0.324**	*	-2.53
Age 45 and older	**-0.817**	***	-6.80	**-0.872**	***	-6.87	**-0.602**	***	-4.00	**-0.621**	***	-4.04
Male	-0.078		-0.96	-0.080		-0.94	-0.104		-1.16	-0.111		-1.24
Female	*ref*		*ref*	*ref*		*ref*	*ref*		*ref*	*ref*		*ref*
Mathematical competency low	*ref*		*ref*	*ref*		*ref*	*ref*		*ref*	*ref*		*ref*
Mathematical competency medium	**0.303**	**	2.61	0.060		0.48	0.074		0.57	0.069		0.52
Mathematical competency high	**0.516**	***	3.62	0.046		0.29	0.039		0.23	0.036		0.21
Dispositional variables												
Willingness to save				**0.037**	***	8.45	**0.038**	***	8.36	**0.036**	***	7.97
Risky decisions				-0.006		-0.26	-0.017		-0.73	-0.023		-1.00
Saved for post-secondary education				**0.174**		1.88	0.135		1.39	0.132		1.35
Planning ability				-0.004		-1.31	**-0.006**		-1.74	-0.005		-1.60
Locus of control				0.006		0.44	0.002		0.14	0.004		0.32
Parent high school/tech				**0.159**		1.84	0.142		1.62	0.136		1.53
Parent university				0.045		0.48	-0.041		-0.42	-0.066		-0.68
Positive attitude about education and labour market				**0.063**	*	2.47	**0.065**	*	2.45	**0.066**	*	2.50
School performance				0.085		0.97	0.054		0.59	0.033		0.36
Peers liked school				0.082		0.86	0.032		0.33	0.028		0.28
Liked school				0.117		1.20	0.069		0.70	0.089		0.89

(continued)

Table A.14: Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Situational variables								
Post-secondary education experience					0.228	1.64	**0.252**	1.71
Hold diploma					0.031	0.46	0.040	0.60
No children					**0.337** **	2.68	**0.309** *	2.42
Married					**-0.222** *	-2.19	-0.208	-2.04
Non-urban resident					0.038	0.33	0.014	0.12
Unemployed					**0.411** **	2.63	**0.421** **	2.68
Post-secondary student					**0.801** ***	4.08	**0.827** ***	4.18
Part-time employed					**0.620** ***	4.07	**0.642** ***	4.19
Full-time employed					0.187	1.23	0.206	1.35
Neither in labour market nor student					ref	ref	ref	ref
Current student debt					0.009	0.08	0.010	0.09
Burdened by debt					0.028	0.30	0.017	0.18
Current debt					0.141	1.43	0.143	1.44
Household income low					0.041	0.39	0.047	0.44
Household income medium					ref	ref	ref	ref
Household income high					0.000	0.00	-0.014	-0.13
Immigrant					**0.450** **	2.46	**0.442** *	2.41
Has children under 5 years of age					0.331	2.12	**0.333** *	2.11
Disabled					0.140	1.53	**0.206**	1.87
Good market understanding					0.043	0.48	0.030	0.34
Leisure TV					-0.538	-1.47	-0.521	-1.42
Institutional variables								
High school diploma							-0.164	-1.01
High school equivalency							**-0.394**	-1.76
ON							**-0.346**	-1.78

(continued)

Table A.14: Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
BC							-0.309	-1.47
NS							-0.234	-1.12
AB							**-0.516** *	-2.47
QC and NF							*ref*	*ref*
Knows government aid							0.039	1.08
Delta1	-0.587	-4.21	0.354	0.75	1.013	1.89	0.651	1.15
Delta2	-0.439	-3.16	0.510	1.08	1.177	2.20	0.818	1.44
Delta3	-0.054	-0.39	0.924	1.97	1.613	3.01	1.258	2.22
Delta4	0.410	2.95	1.433	3.04	2.149	3.99	1.798	3.17
Log likelihood	-1114.330		-1064.768		-1031.769		-1025.485	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.15: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (801 Observations, No High School Students)

		Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Employer pays		0.5568	0.2171	0.0546	0.0128	0.1313	0.0405	0.1217	0.0593	0.1357	0.1372
Employer does not pay		0.3728	0.2186	0.0529	0.0150	0.1434	0.0357	0.1617	0.0501	0.2692	0.1995
Age 18–24		0.2061	0.1574	0.0425	0.0188	0.1308	0.0434	0.1787	0.0382	0.4419	0.2191
Age 25–44		0.4131	0.2094	0.0557	0.0118	0.1473	0.0307	0.1584	0.0513	0.2255	0.1648
Age 45 and older		0.5091	0.2119	0.0563	0.0128	0.1403	0.0393	0.1367	0.0583	0.1575	0.1299
Male		0.4041	0.2218	0.0540	0.0143	0.1437	0.0360	0.1569	0.0527	0.2414	0.1870
Female		0.3833	0.2282	0.0523	0.0152	0.1409	0.0367	0.1579	0.0525	0.2655	0.2057
Mathematical competency low		0.5285	0.2389	0.0530	0.0150	0.1305	0.0427	0.1270	0.0615	0.1610	0.1635
Mathematical competency medium		0.3808	0.2156	0.0536	0.0145	0.1443	0.0344	0.1608	0.0495	0.2606	0.1958
Mathematical competency high		0.3172	0.2016	0.0510	0.0158	0.1438	0.0360	0.1716	0.0456	0.3164	0.2063
Least willing to save	save<=9	0.5839	0.2041	0.0546	0.0132	0.1294	0.0418	0.1162	0.0586	0.1159	0.1087
Less than average willing to save	10<=save<=19	0.4320	0.1909	0.0580	0.0096	0.1509	0.0263	0.1570	0.0487	0.2020	0.1409
More than average willing to save	20<=save<=29	0.2837	0.1605	0.0519	0.0146	0.1501	0.0296	0.1840	0.0316	0.3302	0.1771
Most willing to save	30<=save	0.1945	0.1656	0.0399	0.0201	0.1235	0.0476	0.1722	0.0425	0.4699	0.2363
Risky decisions — Low	rd<=3	0.4026	0.2297	0.0530	0.0150	0.1408	0.0378	0.1543	0.0543	0.2493	0.2020
Risky decisions — Neutral	4<=rd<=5	0.3647	0.2134	0.0531	0.0142	0.1447	0.0326	0.1646	0.0481	0.2729	0.1940
Risky decisions — High	6<=rd	0.4204	0.2338	0.0532	0.0155	0.1403	0.0397	0.1517	0.0554	0.2344	0.1937
Saved for post-secondary education		0.3426	0.2143	0.0515	0.0159	0.1424	0.0364	0.1660	0.0477	0.2975	0.2090
Not saved for post-secondary education		0.4951	0.2135	0.0563	0.0118	0.1414	0.0364	0.1399	0.0578	0.1672	0.1365
Planning ability low	pa<=89	0.3559	0.2063	0.0533	0.0146	0.1467	0.0340	0.1680	0.0475	0.2760	0.1876
Planning ability medium	90<=pa<=99	0.4182	0.2399	0.0525	0.0143	0.1389	0.0365	0.1518	0.0566	0.2385	0.1935
Planning ability high	100<=pa<=109	0.4015	0.2122	0.0550	0.0127	0.1466	0.0326	0.1598	0.0519	0.2370	0.1745
Planning ability very high	110<=pa	0.3904	0.2377	0.0513	0.0173	0.1363	0.0410	0.1510	0.0521	0.2711	0.2311
Locus of control — Low	16 <=loc	0.4047	0.2284	0.0534	0.0137	0.1426	0.0353	0.1569	0.0550	0.2424	0.1849

(continued)

Table A.15: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (801 Observations, No High School Students) (Cont'd)

		Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Locus of control medium	14<=loc<=15	0.3929	0.2119	0.0546	0.0141	0.1458	0.0360	0.1595	0.0519	0.2473	0.1894
Locus of control high	11<=loc<=13	0.3764	0.2210	0.0528	0.0150	0.1427	0.0341	0.1606	0.0487	0.2674	0.2006
Locus of control very high	loc<=10	0.3943	0.2437	0.0510	0.0166	0.1362	0.0401	0.1522	0.0545	0.2664	0.2205
Parent high school/tech		0.3698	0.2186	0.0527	0.0152	0.1429	0.0358	0.1614	0.0499	0.2732	0.2042
No parent high school/tech		0.4280	0.2320	0.0537	0.0142	0.1409	0.0373	0.1512	0.0561	0.2263	0.1846
Parent university		0.3419	0.2278	0.0499	0.0171	0.1378	0.0385	0.1621	0.0481	0.3083	0.2247
No parent university		0.4145	0.2211	0.0545	0.0135	0.1440	0.0353	0.1555	0.0544	0.2316	0.1804
Positive attitude about education and labour market — Low	posatt<=7	0.4497	0.2392	0.0534	0.0137	0.1392	0.0386	0.1476	0.0602	0.2101	0.1718
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.3844	0.2176	0.0535	0.0146	0.1440	0.0349	0.1600	0.0502	0.2580	0.1952
Positive attitude about education and labour market — High	10<=posatt	0.3637	0.2205	0.0521	0.0158	0.1415	0.0368	0.1607	0.0494	0.2820	0.2137
School performance high		0.3596	0.2164	0.0523	0.0156	0.1430	0.0361	0.1634	0.0483	0.2817	0.2053
School performance low		0.4291	0.2302	0.0539	0.0138	0.1411	0.0367	0.1508	0.0563	0.2251	0.1853
Peers' performance high		0.3800	0.2263	0.0524	0.0153	0.1413	0.0366	0.1588	0.0516	0.2675	0.2052
Peers' performance low		0.4294	0.2197	0.0551	0.0131	0.1445	0.0356	0.1535	0.0555	0.2175	0.1698
Liked school		0.3612	0.2228	0.0517	0.0161	0.1408	0.0380	0.1607	0.0502	0.2856	0.2160
Disliked school		0.4039	0.2257	0.0536	0.0143	0.1426	0.0358	0.1563	0.0534	0.2436	0.1899
Post-secondary education experience		0.3756	0.2207	0.0528	0.0148	0.1428	0.0353	0.1607	0.0507	0.2680	0.2008
No post-secondary education experience		0.5017	0.2272	0.0547	0.0148	0.1374	0.0426	0.1361	0.0597	0.1701	0.1543
Diploma = 1		0.3944	0.2339	0.0522	0.0154	0.1395	0.0377	0.1550	0.0539	0.2589	0.2072
Diploma = 2		0.3859	0.1961	0.0559	0.0124	0.1501	0.0295	0.1646	0.0461	0.2434	0.1700
Diploma = 3		0.3654	0.1962	0.0553	0.0115	0.1512	0.0292	0.1704	0.0483	0.2577	0.1642
Diploma = 4		0.4825	0.2269	0.0564	0.0163	0.1458	0.0509	0.1480	0.0667	0.1673	0.1055
Diploma = 5	(1 obs.)	0.4338		0.0662		0.1702		0.1664		0.1634	

(continued)

Table A.15: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (801 Observations, No High School Students) (Cont'd)

	Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
No children	0.3532	0.2182	0.0518	0.0156	0.1425	0.0365	0.1645	0.0494	0.2881	0.2058
Has children	0.5018	0.2096	0.0566	0.0117	0.1411	0.0361	0.1378	0.0563	0.1628	0.1381
Married	0.4711	0.2205	0.0555	0.0126	0.1415	0.0365	0.1439	0.0569	0.1879	0.1588
Not married	0.3436	0.2148	0.0515	0.0159	0.1424	0.0363	0.1659	0.0479	0.2965	0.2084
Non-urban resident	0.4202	0.2264	0.0541	0.0140	0.1423	0.0356	0.1531	0.0541	0.2303	0.1856
Urban resident	0.3859	0.2250	0.0528	0.0150	0.1421	0.0366	0.1585	0.0522	0.2607	0.2005
Neither in labour market nor student	0.6094	0.2001	0.0537	0.0135	0.1247	0.0424	0.1087	0.0578	0.1036	0.1032
Unemployed	0.3819	0.1958	0.0559	0.0116	0.1512	0.0281	0.1673	0.0475	0.2438	0.1586
Post-secondary student	0.1404	0.1200	0.0345	0.0191	0.1137	0.0473	0.1731	0.0397	0.5383	0.2104
Part-time employed	0.3085	0.1771	0.0528	0.0138	0.1499	0.0269	0.1795	0.0361	0.3093	0.1774
Full-time employed	0.4589	0.1919	0.0584	0.0093	0.1498	0.0302	0.1518	0.0526	0.1811	0.1231
Current student debt	0.3544	0.2187	0.0519	0.0149	0.1422	0.0334	0.1640	0.0487	0.2875	0.2062
No current student debt	0.4066	0.2266	0.0535	0.0148	0.1420	0.0374	0.1550	0.0538	0.2429	0.1937
Burdened by debt	0.4009	0.2130	0.0547	0.0138	0.1455	0.0340	0.1581	0.0506	0.2407	0.1852
Not burdened by debt	0.3847	0.2361	0.0515	0.0156	0.1391	0.0382	0.1569	0.0543	0.2678	0.2082
Current debt	0.3763	0.2254	0.0523	0.0151	0.1410	0.0356	0.1587	0.0516	0.2717	0.2099
No current debt	0.3987	0.2255	0.0534	0.0147	0.1425	0.0367	0.1570	0.0530	0.2484	0.1929
Household income low	0.3880	0.2367	0.0516	0.0155	0.1387	0.0378	0.1556	0.0545	0.2660	0.2107
Household income medium	0.4128	0.2239	0.0540	0.0147	0.1429	0.0371	0.1546	0.0532	0.2357	0.1882
Household income high	0.3719	0.2104	0.0538	0.0140	0.1458	0.0331	0.1637	0.0486	0.2649	0.1914
Immigrant	0.2812	0.1618	0.0516	0.0152	0.1494	0.0294	0.1836	0.0296	0.3342	0.1824
Not immigrant	0.3983	0.2270	0.0531	0.0148	0.1417	0.0367	0.1561	0.0532	0.2508	0.1981
Has children under 5 years of age	0.4109	0.2073	0.0559	0.0123	0.1480	0.0317	0.1590	0.0504	0.2262	0.1664
No children under 5 years of age	0.3918	0.2272	0.0528	0.0150	0.1416	0.0368	0.1571	0.0528	0.2567	0.2004

(continued)

Table A.15: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (801 Observations, No High School Students) (Cont'd)

		Prob(IE$_i$ = 0)		Prob(IE$_i$ = 1)		Prob(IE$_i$ = 2)		Prob(IE$_i$ = 3)		Prob(IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Disabled		0.3899	0.2193	0.0537	0.0142	0.1439	0.0342	0.1594	0.0509	0.2532	0.1916
Not disabled		0.3974	0.2385	0.0518	0.0161	0.1384	0.0404	0.1536	0.0558	0.2589	0.2112
Good market understanding		0.3678	0.2202	0.0524	0.0156	0.1424	0.0373	0.1613	0.0505	0.2762	0.2072
Poor market understanding		0.4079	0.2277	0.0535	0.0143	0.1419	0.0358	0.1551	0.0537	0.2416	0.1910
Leisure TV — Low	Leisure TV < 0.33	0.4036	0.2225	0.0538	0.0143	0.1430	0.0356	0.1560	0.0526	0.2435	0.1923
Leisure TV — High	0.33<=Leisure TV	0.3828	0.2279	0.0524	0.0152	0.1413	0.0371	0.1587	0.0526	0.2647	0.2025
High school diploma		0.3786	0.2263	0.0523	0.0152	0.1415	0.0367	0.1594	0.0520	0.2682	0.2037
No high school diploma		0.4710	0.2052	0.0571	0.0116	0.1455	0.0346	0.1465	0.0545	0.1799	0.1405
High school equivalency		0.5427	0.2024	0.0566	0.0110	0.1368	0.0357	0.1272	0.0558	0.1366	0.1234
No high school equivalency or hold high school diploma		0.3827	0.2237	0.0528	0.0150	0.1424	0.0364	0.1594	0.0518	0.2626	0.1996
ON		0.4166	0.2320	0.0533	0.0143	0.1411	0.0365	0.1534	0.0553	0.2355	0.1881
BC		0.3534	0.2037	0.0535	0.0145	0.1473	0.0337	0.1686	0.0467	0.2772	0.1880
NS		0.3470	0.1939	0.0538	0.0149	0.1480	0.0327	0.1691	0.0424	0.2820	0.1935
AB		0.4613	0.2273	0.0548	0.0124	0.1405	0.0356	0.1449	0.0576	0.1984	0.1693
QC, NF		0.0479	0.0727	0.0153	0.0205	0.0570	0.0669	0.1066	0.0874	0.7733	0.2474
Know government aid		0.3882	0.2336	0.0523	0.0148	0.1415	0.0372	0.1594	0.0554	0.2586	0.1926
Don't know government aid		0.4530	0.2344	0.0538	0.0148	0.1384	0.0399	0.1440	0.0573	0.2108	0.1896

Table A.16: Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (Ordered Probit, 80 Observations, High School Students)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Basic/Control variables								
Male	0.146	0.58	0.155	0.49	0.314	0.90	0.358	1.00
Female	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	**0.623** *	2.14	-0.036	-0.10	-0.058	-0.14	-0.006	-0.01
Mathematical competency high	0.962	1.54	0.310	0.44	0.128	0.17	0.169	0.23
Dispositional variables								
Willingness to save			**0.053** *	2.52	**0.058** **	2.58	**0.055** *	2.39
Risky decisions			0.130	1.19	0.168	1.43	0.173	1.46
Saved for post-secondary education			-0.185	-0.52	-0.228	-0.59	-0.210	-0.54
Planning ability			**0.037** ***	3.39	**0.042** ***	3.49	**0.042** ***	3.51
Locus of control			0.031	0.54	0.039	0.65	0.035	0.58
Parent high school/tech			-0.585	-1.63	-0.579	-1.44	-0.593	-1.47
Parent university			-0.113	-0.34	-0.086	-0.23	-0.131	-0.35
Positive attitude about education and labour market			0.171	1.85	**0.223** *	2.13	**0.204**	1.85
Claudia			0.313	1.11	0.164	0.51	0.190	0.58
School performance			0.307	0.94	0.287	0.79	0.313	0.85
Peers liked school			0.200	0.59	0.177	0.49	0.184	0.51
Situational variables								
Burdened by debt					0.358	0.79	0.352	0.78
Current debt					**-0.744**	-1.89	**-0.701**	-1.74
Household income low					0.764	1.14	0.790	1.17
Household income medium					*ref*	*ref*	*ref*	*ref*
Household income high					0.271	0.70	0.280	0.72

(continued)

Table A.16: Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (Ordered Probit, 80 Observations, High School Students)

	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Good market understanding					0.029	0.09	0.009	0.03
Leisure TV					-2.179	-1.32	-2.152	-1.30
Institutional variables								
Knows government aid							0.073	0.52
Delta1	-0.576	-2.02	5.316	2.96	5.759	2.93	5.744	2.92
Delta2	-0.365	-1.31	5.575	3.10	6.028	3.07	6.014	3.06
Delta3	0.128	0.46	6.212	3.43	6.704	3.39	6.688	3.38
Delta4	0.706	2.48	7.015	3.81	7.578	3.76	7.560	3.76
Log likelihood	-108.623		-90.711		-86.790		-86.652	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.17: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (80 Observations, High School Students)

		Prob (IE$_i$ = 0)		Prob (IE$_i$ = 1)		Prob (IE$_i$ = 2)		Prob (IE$_i$ = 3)		Prob (IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Male		0.1241	0.2034	0.0373	0.0359	0.1254	0.0915	0.2158	0.1076	0.4974	0.3124
Female		0.1552	0.1767	0.0520	0.0398	0.1598	0.0905	0.2317	0.0946	0.4014	0.3056
Mathematical competency low		0.2628	0.2475	0.0668	0.0383	0.1856	0.0893	0.2207	0.0991	0.2641	0.2779
Mathematical competency medium		0.1048	0.1563	0.0383	0.0363	0.1297	0.0908	0.2219	0.1051	0.5052	0.3057
Mathematical competency high		0.0269	0.0302	0.0196	0.0176	0.0971	0.0638	0.2512	0.0712	0.6053	0.1808
Least willing to save	save<=9	0.3461	0.2821	0.0756	0.0298	0.2036	0.0738	0.2229	0.1154	0.1518	0.1408
Less than average willing to save	10<=save<=19	0.1640	0.1712	0.0565	0.0375	0.1753	0.0827	0.2497	0.0842	0.3545	0.2720
More than average willing to save	20<=save<=29	0.0743	0.1397	0.0288	0.0332	0.1050	0.0872	0.2055	0.1108	0.5864	0.2974
Most willing to save	30<=save	0.0138	0.0179	0.0111	0.0123	0.0601	0.0545	0.1795	0.1081	0.7355	0.1887
Risky decisions — Low	rd<=3	0.1603	0.2218	0.0449	0.0396	0.1392	0.0922	0.2151	0.1033	0.4405	0.3202
Risky decisions — Neutral	4<=rd<=5	0.1306	0.1652	0.0467	0.0372	0.1523	0.0889	0.2394	0.0957	0.4309	0.2943
Risky decisions — High	6<=rd	0.0546	0.0823	0.0269	0.0355	0.0998	0.1079	0.1888	0.1195	0.6299	0.3289
Saved for post-secondary education		0.1231	0.1844	0.0407	0.0364	0.1362	0.0928	0.2241	0.1084	0.4758	0.3099
Not saved for post-secondary education		0.1789	0.2062	0.0530	0.0423	0.1549	0.0911	0.2205	0.0827	0.3927	0.3134
Planning ability low	pa<=89	0.2418	0.2202	0.0681	0.0349	0.1950	0.0780	0.2395	0.0906	0.2556	0.2414
Planning ability medium	90<=pa<=99	0.0618	0.0983	0.0303	0.0286	0.1217	0.0745	0.2514	0.0876	0.5348	0.2367
Planning ability high	100<=pa<=109	0.0644	0.1550	0.0222	0.0299	0.0850	0.0738	0.1947	0.0987	0.6337	0.2737
Planning ability very high	110<=pa	0.0418	0.0901	0.0189	0.0321	0.0702	0.0946	0.1405	0.1294	0.7286	0.3152
Locus of control low	16 <=loc	0.2399	0.2652	0.0565	0.0394	0.1583	0.0843	0.2115	0.1065	0.3338	0.3056
Locus of control medium	14<=loc<=15	0.0835	0.0969	0.0385	0.0360	0.1360	0.1018	0.2262	0.1153	0.5158	0.3177
Locus of control high	11<=loc<=13	0.1043	0.1230	0.0430	0.0389	0.1443	0.0983	0.2338	0.0908	0.4746	0.3056
Locus of control very high	loc<=10	0.0509	0.1024	0.0240	0.0300	0.0987	0.0743	0.2230	0.0963	0.6034	0.2487
Parent high school/tech		0.1618	0.2101	0.0486	0.0375	0.1536	0.0872	0.2338	0.1005	0.4023	0.2949
No parent high school/tech		0.1053	0.1569	0.0376	0.0388	0.1240	0.0974	0.2079	0.1025	0.5252	0.3237

(continued)

Table A.17: Calculation of the Probabilities of the Factors Related to Intensity of Preference for a $1,000 Part-Time Educational Grant Over Cash (80 Observations, High School Students) (Cont'd)

		Prob (IE$_i$ = 0)		Prob (IE$_i$ = 1)		Prob (IE$_i$ = 2)		Prob (IE$_i$ = 3)		Prob (IE$_i$ = 4)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Parent university		0.1429	0.1963	0.0435	0.0405	0.1330	0.0937	0.2060	0.1025	0.4747	0.3323
No parent university		0.1338	0.1876	0.0448	0.0362	0.1501	0.0908	0.2411	0.0985	0.4302	0.2897
Positive attitude about education and labour market — Low	posatt<=7	0.2776	0.2791	0.0624	0.0386	0.1726	0.0801	0.2193	0.1034	0.2681	0.2623
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.1419	0.1692	0.0492	0.0393	0.1548	0.0940	0.2320	0.0910	0.4220	0.3068
Positive attitude about education and labour market — High	10<=posatt	0.0545	0.0867	0.0271	0.0301	0.1062	0.0878	0.2138	0.1151	0.5985	0.2819
Claudia high (pos. attitude in successful case)		0.1161	0.1610	0.0418	0.0372	0.1386	0.0917	0.2274	0.1016	0.4760	0.3062
Claudia low (neg. attitude in successful case)		0.1631	0.2190	0.0466	0.0396	0.1444	0.0937	0.2184	0.1025	0.4275	0.3186
School performance high		0.0766	0.1262	0.0316	0.0338	0.1150	0.0887	0.2167	0.1080	0.5601	0.2938
School performance low		0.1973	0.2227	0.0560	0.0388	0.1665	0.0893	0.2292	0.0958	0.3511	0.2955
Peers' performance high		0.1028	0.1433	0.0397	0.0364	0.1358	0.0915	0.2308	0.0982	0.4908	0.2972
Peers' performance low		0.2529	0.2711	0.0581	0.0416	0.1591	0.0944	0.1985	0.1107	0.3314	0.3315
Burdened by debt		0.1351	0.1708	0.0475	0.0396	0.1519	0.0927	0.2341	0.0983	0.4313	0.3101
Not burdened by debt		0.1391	0.1958	0.0434	0.0382	0.1393	0.0926	0.2210	0.1027	0.4572	0.3134
Current debt		0.2736	0.2762	0.0616	0.0422	0.1663	0.0943	0.2004	0.1061	0.2981	0.3170
No current debt		0.1073	0.1519	0.0401	0.0364	0.1356	0.0914	0.2284	0.1005	0.4887	0.3009
Household income low		0.0584	0.1096	0.0258	0.0347	0.0964	0.0938	0.1912	0.1243	0.6282	0.3136
Household income medium		0.1343	0.2202	0.0400	0.0343	0.1395	0.0955	0.2342	0.1115	0.4520	0.3018
Household income high		0.1520	0.1892	0.0483	0.0397	0.1488	0.0905	0.2240	0.0952	0.4269	0.3112
Good market understanding		0.0842	0.1308	0.0339	0.0363	0.1187	0.0950	0.2130	0.1058	0.5501	0.3086
Poor market understanding		0.1661	0.2111	0.0493	0.0385	0.1529	0.0893	0.2283	0.0999	0.4035	0.3034
Leisure TV — Low	Leisure TV < 0.33	0.1429	0.2176	0.0404	0.0392	0.1280	0.0982	0.2018	0.1138	0.4870	0.3395
Leisure TV — High	0.33<=Leisure TV	0.1355	0.1733	0.0466	0.0377	0.1503	0.0877	0.2373	0.0909	0.4303	0.2921
Know government aid		0.1162	0.1527	0.0434	0.0387	0.1426	0.0991	0.2274	0.0955	0.4704	0.3155
Don't know government aid		0.2058	0.2664	0.0494	0.0370	0.1507	0.0789	0.2294	0.1065	0.3647	0.2831

Table A.18: Determinants of Loan Behaviour Given Preference for Grants (Bivariate Probit ($1,000 Grant, Any Loans), 881 Observations)

Variables	Coefficients		t-statistics
At least one grant is preferred over cash			
Age 18–25	*ref*		*ref*
Age 25–45	**-0.338**	*	-2.41
Age 45 and older	**-0.617**	***	-3.79
Male	0.077		0.72
Female	*ref*		*ref*
Household income low	0.104		0.87
Household income medium	*ref*		*ref*
Household income high	-0.008		-0.07
Married	-0.050		-0.47
No children	0.045		0.39
Non-urban resident	0.118		0.79
Non-urban resident x male	**-0.535**	*	-2.20
Hold diploma	0.043		0.56
No high school diploma or equivalency	0.064		0.51
Part-time employed	**0.505**	***	3.25
Full-time employed	0.206		1.36
Unemployed	**0.310**	*	2.00
Post-secondary student	**0.713**	***	3.28
High school student	0.607		1.50
Neither in labour market nor student			
High school student x Household income medium	-0.024		-0.04
High school student x Household income low	*ref*		*ref*
High school student x Household income high	0.226		0.54
Employer pays	**-0.475**	**	-2.93
Mathematical competency low	*ref*		*ref*
Mathematical competency medium	**0.267**		1.94
Mathematical competency high	**0.383**	*	2.07
Risky decisions	-0.018		-0.73
Willingness to save	**0.030**	***	6.15
Positive attitude about education and labour market	**0.053**	*	1.99
Planning ability	-0.003		-1.07
Parent high school/tech	0.089		0.99
Parent university	0.038		0.38
Saved for post-secondary education	0.018		0.19
Recent student	0.155		1.60
Good market understanding	-0.110		-1.21

(continued)

Table A.18: Determinants of Loan Behaviour Given Preference for Grants (Bivariate Probit ($1,000 Grant, Any Loans), 881 Observations) (Cont'd)

Variables	Coefficients	t-statistics
Leisure TV	-0.209	-0.53
Constant	-0.719	-1.55
At least one loan is preferred over cash		
Male	0.158	1.54
Female	*ref*	*ref*
Household income low	**0.290** *	2.40
Household income medium	*ref*	*ref*
Household income high	-0.020	-0.15
Non-urban resident x male	**-0.617** **	-2.83
Hold diploma	0.018	0.24
High school student	0.181	0.56
High school student x Household income medium	0.660	1.19
High school student x Household income low	*ref*	*ref*
High school student x Household income high	-0.036	-0.10
Employer pays	-0.170	-1.00
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	-0.119	-0.87
Mathematical competency high	-0.107	-0.60
Risky decisions	0.037	1.38
Willingness to save	**0.024** ***	4.66
Leisure TV	0.146	0.40
Number credit cards	**-0.331** **	-3.12
Slow to pay	**0.324** **	3.09
Co-signer	**0.422** *	2.02
Constant	**-1.255** ***	-4.86
Rho	0.759	18.36
Log likelihood	-878.540	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.
"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.19: Calculated Probabilities of Loan Behaviour Given Preference for Grants (Bivariate Probit ($1,000 Grant, Any Loans), 881 Observations)

		prob (grant = 1,loan = 1)		prob (grant = 1,loan = 0)		prob (grant = 0,loan = 1)		prob (grant = 0,loan = 0)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Age 18–25		0.2904	0.1278	0.5118	0.1381	0.0052	0.0114	0.1926	0.1210
Age 25–45		0.2147	0.1090	0.3446	0.1426	0.0204	0.0292	0.4203	0.1636
Age 45 and older		0.2037	0.1100	0.2655	0.1370	0.0359	0.0453	0.4948	0.1643
Male		0.2559	0.1283	0.3560	0.1658	0.0227	0.0357	0.3653	0.1947
Female		0.2161	0.1104	0.3896	0.1672	0.0170	0.0286	0.3773	0.1902
Household income low		0.2923	0.1356	0.3070	0.1648	0.0350	0.0441	0.3657	0.1884
Household income medium		0.1940	0.0963	0.3818	0.1573	0.0139	0.0220	0.4103	0.1912
Household income high		0.2114	0.0984	0.4436	0.1507	0.0081	0.0124	0.3369	0.1906
Married		0.1886	0.1030	0.3413	0.1456	0.0176	0.0251	0.4526	0.1791
Not married		0.2580	0.1219	0.3927	0.1754	0.0205	0.0352	0.3287	0.1850
No children		0.2447	0.1234	0.3957	0.1698	0.0179	0.0319	0.3417	0.1897
Has children		0.1989	0.1024	0.3083	0.1398	0.0245	0.0319	0.4683	0.1671
Non-urban resident		0.2084	0.1268	0.3406	0.1512	0.0192	0.0292	0.4318	0.1927
Urban resident		0.2389	0.1183	0.3817	0.1696	0.0196	0.0326	0.3599	0.1899
Non-urban male resident		0.1393	0.0853	0.3064	0.1731	0.0231	0.0361	0.5313	0.1897
Urban male resident		0.2403	0.1196	0.3795	0.1660	0.0192	0.0317	0.3610	0.1875
Diploma =1		0.2397	0.1246	0.3772	0.1733	0.0201	0.0337	0.3630	0.1986
Diploma = 2		0.2109	0.1060	0.3667	0.1418	0.0157	0.0205	0.4068	0.1675
Diploma = 3		0.2204	0.0828	0.3816	0.1412	0.0176	0.0309	0.3805	0.1457
Diploma = 4		0.1913	0.1097	0.2850	0.1846	0.0374	0.0487	0.4863	0.2010
Diploma = 5	(1 obs.)	0.3021		0.2873		0.0253		0.3853	
No high school equivalency or high school diploma		0.2849	0.1393	0.3735	0.1726	0.0213	0.0336	0.3203	0.1998
High school equivalency or high school diploma		0.2190	0.1099	0.3751	0.1659	0.0190	0.0316	0.3869	0.1875
Neither in labour market nor student		0.1864	0.1043	0.2008	0.1145	0.0491	0.0502	0.5637	0.1579
Unemployed		0.2397	0.1047	0.3376	0.1376	0.0238	0.0333	0.3988	0.1524

(continued)

Table A.19: Calculated Probabilities of Loan Behaviour Given Preference for Grants (Bivariate Probit ($1,000 Grant, Any Loans), 881 Observations) (Cont'd)

		prob (grant = 1,loan = 1)		prob (grant = 1,loan = 0)		prob (grant = 0,loan = 1)		prob (grant = 0,loan = 0)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Post-secondary student		0.2626	0.1033	0.5750	0.1208	0.0028	0.0075	0.1596	0.1103
Part-time employed		0.2357	0.1225	0.4204	0.1436	0.0129	0.0253	0.3310	0.1468
Full-time employed		0.2013	0.1043	0.3298	0.1286	0.0194	0.0259	0.4495	0.1566
High school student		0.3516	0.1449	0.4866	0.1372	0.0052	0.0124	0.1566	0.0880
Not high school student		0.2220	0.1109	0.3636	0.1660	0.0209	0.0330	0.3935	0.1864
Employer pays		0.1703	0.0917	0.2781	0.1479	0.0255	0.0317	0.5261	0.1831
Employer does not pay		0.2410	0.1210	0.3857	0.1659	0.0188	0.0320	0.3545	0.1854
Mathematical competency low		0.2404	0.1220	0.2238	0.1468	0.0552	0.0542	0.4806	0.1871
Mathematical competency medium		0.2331	0.1231	0.3918	0.1561	0.0140	0.0208	0.3611	0.1879
Mathematical competency high		0.2297	0.1061	0.4528	0.1410	0.0072	0.0096	0.3102	0.1735
Risky decisions — Low	rd<=3	0.2077	0.1075	0.3979	0.1669	0.0152	0.0281	0.3791	0.1949
Risky decisions — Neutral	4<=rd<=5	0.2536	0.1199	0.3806	0.1617	0.0185	0.0307	0.3474	0.1854
Risky decisions — High	6<=rd	0.2651	0.1391	0.2957	0.1576	0.0340	0.0404	0.4052	0.1936
Least willing to save	save<=9	0.1468	0.0805	0.2774	0.1583	0.0285	0.0378	0.5473	0.1676
Less than average willing to save	10<=save<=19	0.2194	0.0969	0.3680	0.1608	0.0221	0.0366	0.3905	0.1638
More than average willing to save	20<=save<=29	0.2688	0.1153	0.4250	0.1507	0.0135	0.0222	0.2927	0.1442
Most willing to save	30<=save	0.3387	0.1305	0.4439	0.1564	0.0109	0.0204	0.2065	0.1450
Positive attitude about education and labour market — Low	posatt<=7	0.2281	0.1222	0.3231	0.1649	0.0293	0.0439	0.4195	0.1928
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.2350	0.1168	0.3829	0.1664	0.0187	0.0311	0.3634	0.1880
Positive attitude about education and labour market — High	10<=posatt	0.2358	0.1238	0.3985	0.1633	0.0140	0.0202	0.3518	0.1928
Planning ability low	pa<=89	0.2583	0.1293	0.3885	0.1670	0.0199	0.0347	0.3333	0.1757
Planning ability medium	90<=pa<=99	0.2283	0.1132	0.3619	0.1690	0.0208	0.0312	0.3890	0.2023
Planning ability high	100<=pa<=109	0.2347	0.1160	0.3564	0.1589	0.0220	0.0358	0.3868	0.1797
Planning ability very high	110<=pa	0.2121	0.1180	0.3935	0.1722	0.0149	0.0247	0.3796	0.2056

(continued)

Table A.19: Calculated Probabilities of Loan Behaviour Given Preference for Grants (Bivariate Probit ($1,000 Grant, Any Loans), 881 Observations) (Cont'd)

		prob (grant = 1,loan = 1)		prob (grant = 1,loan = 0)		prob (grant = 0,loan = 1)		prob (grant = 0,loan = 0)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Parent high school/tech		0.2310	0.1158	0.3901	0.1639	0.0176	0.0322	0.3613	0.1882
No parent high school/tech		0.2380	0.1270	0.3507	0.1700	0.0225	0.0316	0.3888	0.1973
Parent university		0.2450	0.1179	0.4310	0.1688	0.0134	0.0260	0.3105	0.1880
No parent university		0.2283	0.1210	0.3477	0.1598	0.0224	0.0342	0.4016	0.1872
Saved for post-secondary education		0.2388	0.1207	0.4065	0.1614	0.0146	0.0263	0.3401	0.1858
Not saved for post-secondary education		0.2230	0.1187	0.3076	0.1599	0.0298	0.0397	0.4395	0.1882
Recent student		0.2256	0.1090	0.4172	0.1606	0.0135	0.0235	0.3437	0.1797
Not recent student		0.2442	0.1328	0.3198	0.1598	0.0273	0.0392	0.4087	0.2017
Good market understanding		0.2251	0.1150	0.3833	0.1640	0.0154	0.0211	0.3763	0.1942
Poor market understanding		0.2392	0.1232	0.3694	0.1693	0.0221	0.0371	0.3694	0.1911
Leisure TV low	Leisure TV < 0.33	0.2184	0.1194	0.3787	0.1620	0.0164	0.0252	0.3866	0.1891
Leisure TV high	0.33<=Leisure TV	0.2463	0.1196	0.3715	0.1716	0.0220	0.0365	0.3601	0.1940

Table A.20: Determinants of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations)

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Age 18–25	ref	ref	ref	ref	ref	ref	ref	ref
Age 25–45	**-2.001** ***	-4.03	**-2.196** ***	-3.40	**-0.826** *	-2.20	-0.271	-0.89
Age 45 and older	**-2.947** ***	-4.54	**-3.453** ***	-4.00	**-1.722** ***	-3.58	**-0.852** *	-2.45
Male	0.172	0.50	0.663	1.62	0.149	0.57	-0.155	-0.81
Female	ref	ref	ref	ref	ref	ref	ref	ref
Household income low	0.326	0.76	0.077	0.15	0.444	1.40	-0.105	-0.44
Household income medium	ref	ref	ref	ref	ref	ref	ref	ref
Household income high	-0.352	-0.83	-0.541	-1.18	-0.388	-1.12	-0.087	-0.39
Married	**-0.811**	-1.76	-0.662	-1.08	-0.174	-0.57	**-0.370**	-1.74
Has children under 5 years of age	0.460	0.71	-31.167	0.00	0.370	0.87	0.360	1.15
Immigrant	**1.623**	1.89	0.781	0.79	**1.771** **	2.96	**1.625** ***	3.23
Non-urban resident	-0.066	-0.13	-1.431	-1.54	-0.341	-0.89	0.236	0.94
Hold diploma	0.375	1.29	0.231	0.52	0.198	0.95	0.059	0.40
Post-secondary education experience	0.793	1.08	**1.621**	1.65	-0.151	-0.35	0.018	0.06
High school diploma	0.318	0.40	-0.045	-0.05	0.027	0.06	0.018	0.05
High school equivalency	-32.054	0.00	0.409	0.26	0.251	0.40	-0.031	-0.06
Part-time employed	2.340	2.73	-0.629	-0.72	**0.930** *	2.04	**1.563** ***	4.63
Full-time employed	0.206	0.22	**-2.826** **	-2.63	0.130	0.29	**0.901** **	2.78
Disabled	0.614	1.28	0.309	0.55	**0.557**	1.69	0.348	1.47
Unemployed	1.418	1.59	**-1.631**	-1.68	0.457	1.01	**1.037** **	3.06
Post-secondary student	**2.339** *	2.37	**1.754** *	1.98	**1.856** **	3.08	**1.480** **	2.87
High school student	2.403	1.79	2.237	1.57	1.218	1.27	1.021	1.32
Neither in labour market, disabled, nor student	ref	ref	ref	ref	ref	ref	ref	ref

(continued)

Table A.20: Determinants of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Employer pays	-0.520	-0.88	-0.986	-1.14	**-1.601** *	-2.47	**-0.630** *	-2.11
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	0.029	0.06	-0.436	-0.74	-0.355	-1.06	0.373	1.37
Mathematical competency high	-0.476	-0.71	-0.166	-0.22	-0.460	-0.95	0.426	1.18
Risky decisions	0.003	0.03	-0.017	-0.14	0.081	1.22	**-0.086**	-1.75
Willingness to save	**0.119** ***	6.49	**0.114** ***	5.44	**0.051** ***	3.71	**0.036** ***	3.69
Positive attitude about education and labour market	**0.317** **	2.92	0.103	0.84	**0.135**	1.77	0.062	1.09
Planning ability	0.005	0.36	0.021	1.43	**-0.016**	-1.70	**-0.014** *	-2.08
Locus of Control	0.043	0.80	-0.059	-0.96	0.042	1.10	-0.011	-0.40
Parent high school/tech	-0.307	-0.89	-0.139	-0.34	0.357	1.33	-0.034	-0.18
Parent university	-0.065	-0.18	-0.055	-0.13	-0.165	-0.57	-0.054	-0.25
Saved for post-secondary education	0.416	0.97	-0.361	-0.74	0.262	0.91	0.061	0.30
Recent student	-0.124	-0.30	0.697	1.05	-0.057	-0.20	0.254	1.26
Good market understanding	-0.100	-0.29	0.436	1.06	0.065	0.24	-0.036	-0.19
Know government aid	0.184	1.25	-0.084	-0.48	0.160	1.46	**0.174** *	2.27
Leisure TV	-0.947	-0.65	0.635	0.37	0.397	0.39	-0.535	-0.70
Current student debt	0.183	0.43	-0.050	-0.09	0.268	0.85	-0.102	-0.43
Burdened by debt	0.462	1.29	**-0.806**	-1.65	0.196	0.73	0.305	1.58
ON	**-1.316**	-1.71	-0.191	-0.23	-0.488	-0.75	**-0.948** *	-1.98
BC	-2.077	-2.20	-1.028	-1.07	-0.040	-0.06	**-1.137** *	-2.17
NS	-0.641	-0.76	0.528	0.54	-0.422	-0.59	-0.700	-1.38
AB	**-1.498**	-1.76	**-1.972**	-1.89	-0.539	-0.80	**-1.610** **	-3.16
QC/NF	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*

(continued)

Table A.20: Determinants of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant	**-8.353** ***	-3.51	**-5.368** *	-1.98	**-2.849**	-1.73	0.322	0.27
Log likelihood	-936.702							
Comparison group: No education preference								

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

           "*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.21: Calculated Probabilities of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations)

	P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Age 18–25	0.1600	0.1377	0.2160	0.2434	0.1720	0.1168	0.2920	0.1524	0.1600	0.1456
Age 25–45	0.0457	0.0753	0.0251	0.0843	0.1256	0.1011	0.4201	0.1704	0.3836	0.2078
Age 45 and older	0.0363	0.0580	0.0207	0.0458	0.0829	0.0744	0.3368	0.1712	0.5233	0.2155
Male	0.0769	0.1049	0.0974	0.1899	0.1410	0.1149	0.3359	0.1660	0.3487	0.2377
Female	0.0754	0.1110	0.0631	0.1470	0.1202	0.0966	0.3890	0.1783	0.3523	0.2321
Household income low	0.0844	0.1203	0.0682	0.1660	0.1851	0.1290	0.3084	0.1640	0.3539	0.2454
Household income medium	0.0598	0.0901	0.0731	0.1674	0.0997	0.0712	0.3953	0.1809	0.3721	0.2343
Household income high	0.0846	0.1107	0.0956	0.1705	0.0993	0.0793	0.3971	0.1640	0.3235	0.2196
Married	0.0390	0.0732	0.0195	0.0617	0.1006	0.0853	0.3929	0.1786	0.4481	0.2295
Not married	0.0960	0.1185	0.1099	0.1964	0.1449	0.1120	0.3508	0.1712	0.2984	0.2201
Has children under 5 years of age	0.0637	0.1223	0.0000	0.0000	0.1229	0.0917	0.4340	0.1917	0.3794	0.2285
No children under 5 years of age	0.0769	0.1068	0.0849	0.1734	0.1294	0.1063	0.3592	0.1724	0.3496	0.2353
Immigrant	0.0682	0.1014	0.0455	0.0864	0.2273	0.1657	0.5227	0.2004	0.1364	0.1163
Non-immigrant	0.0765	0.1087	0.0800	0.1712	0.1243	0.0989	0.3572	0.1696	0.3620	0.2337
Non-urban resident	0.0671	0.1209	0.0134	0.0480	0.1007	0.0812	0.4430	0.1788	0.3758	0.2182
Urban resident	0.0779	0.1055	0.0915	0.1803	0.1352	0.1089	0.3497	0.1699	0.3456	0.2374
Diploma = 1	0.0805	0.1139	0.0916	0.1831	0.1317	0.1088	0.3543	0.1767	0.3419	0.2395
Diploma = 2	0.0573	0.0871	0.0313	0.0821	0.1142	0.0896	0.4144	0.1662	0.3827	0.2108
Diploma = 3	0.0729	0.0811	0.0351	0.0944	0.1349	0.0900	0.3950	0.1416	0.3622	0.2117
Diploma = 4	0.0342	0.0348	0.0146	0.0169	0.1609	0.1467	0.3275	0.2053	0.4629	0.2677
Diploma = 5 (1 obs.)	0.0915		0.0065		0.0824		0.3130		0.5067	
Post-secondary education experience	0.0703	0.1020	0.0703	0.1686	0.1234	0.1070	0.3716	0.1766	0.3644	0.2314
No post-secondary education experience	0.0978	0.1273	0.1087	0.1630	0.1522	0.0968	0.3424	0.1664	0.2989	0.2393
High school diploma	0.0731	0.1036	0.0687	0.1670	0.1199	0.1009	0.3728	0.1776	0.3655	0.2344
No high school diploma	0.0863	0.1230	0.1117	0.1681	0.1624	0.1144	0.3401	0.1629	0.2995	0.2277

(continued)

Table A.21: Calculated Probabilities of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

		P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
High school equivalency		0.0000	0.0000	0.0208	0.0625	0.1875	0.1580	0.3542	0.1732	0.4375	0.2281
No high school equivalency		0.0804	0.1098	0.0816	0.1717	0.1261	0.1008	0.3661	0.1750	0.3457	0.2340
Neither in labour market or student		0.0182	0.0401	0.0364	0.0774	0.1091	0.0816	0.2182	0.1316	0.6182	0.2158
Unemployed		0.0679	0.0950	0.0185	0.0428	0.1420	0.0966	0.4012	0.1460	0.3704	0.1946
Post-secondary student		0.1386	0.1283	0.3663	0.2814	0.1881	0.1574	0.1980	0.1272	0.1089	0.1213
Part-time employed		0.1012	0.1244	0.0238	0.0437	0.1310	0.1008	0.4702	0.1487	0.2738	0.1608
Full-time employed		0.0308	0.0497	0.0077	0.0195	0.0962	0.0881	0.4231	0.1581	0.4423	0.1909
Disabled		0.0713	0.1031	0.0585	0.1541	0.1243	0.1044	0.3784	0.1706	0.3675	0.2238
Not disabled		0.0838	0.1161	0.1108	0.1846	0.1377	0.1070	0.3443	0.1799	0.3234	0.2488
High school student		0.1875	0.1338	0.2375	0.1817	0.1625	0.0868	0.3000	0.1296	0.1125	0.0728
Not high school student		0.0649	0.0988	0.0624	0.1582	0.1261	0.1067	0.3720	0.1775	0.3745	0.2317
Employer pays		0.0667	0.1164	0.0333	0.1097	0.0333	0.0316	0.3444	0.1772	0.5222	0.2403
Employer does not pay		0.0771	0.1074	0.0834	0.1728	0.1403	0.1055	0.3679	0.1745	0.3312	0.2258
Mathematical competency low		0.0567	0.0926	0.0496	0.1043	0.1773	0.1351	0.2624	0.1421	0.4539	0.2613
Mathematical competency medium		0.0836	0.1134	0.0769	0.1660	0.1237	0.0972	0.3779	0.1690	0.3378	0.2257
Mathematical competency high		0.0634	0.0971	0.1127	0.2165	0.1056	0.0914	0.4155	0.1901	0.3028	0.2142
Risky decisions —Low	rd<=3	0.0683	0.1004	0.0837	0.1799	0.1038	0.0869	0.3857	0.1831	0.3586	0.2402
Risky decisions — Neutral	4<=rd<=5	0.0876	0.1144	0.0852	0.1758	0.1454	0.1055	0.3615	0.1658	0.3202	0.2220
Risky decisions — High	6<=rd	0.0732	0.1149	0.0480	0.0998	0.1679	0.1330	0.3165	0.1601	0.3944	0.2369
Least willing to save	save<=9	0.0217	0.0423	0.0238	0.0712	0.1186	0.1191	0.3158	0.1678	0.5201	0.2361
Less than average willing to save	10<=save<=19	0.0518	0.0679	0.0566	0.1265	0.1389	0.0982	0.3841	0.1629	0.3686	0.2134
More than average willing to save	20<=save<=29	0.1018	0.1190	0.0914	0.1816	0.1343	0.1040	0.4050	0.1759	0.2675	0.1852
Most willing to save	30<=save	0.1735	0.1568	0.1972	0.2621	0.1115	0.1012	0.3126	0.1844	0.2052	0.2000
Positive attitude about education and labour market — Low	posatt<=7	0.0535	0.0823	0.0435	0.1015	0.1409	0.1043	0.3660	0.1648	0.3962	0.2359
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.0698	0.1010	0.0839	0.1759	0.1312	0.1019	0.3704	0.1794	0.3447	0.2282

(continued)

Table A.21: Calculated Probabilities of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

		P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Positive attitude about education and labour market — High	10<=posatt	0.1001	0.1278	0.0942	0.1892	0.1191	0.1106	0.3584	0.1754	0.3282	0.2387
Planning ability low	pa<=89	0.0701	0.0936	0.0506	0.1145	0.1749	0.1169	0.4147	0.1741	0.2897	0.1990
Planning ability medium	90<=pa<=99	0.0691	0.1043	0.0761	0.1584	0.1265	0.0955	0.3603	0.1816	0.3680	0.2504
Planning ability high	100<=pa<=109	0.0744	0.1059	0.0655	0.1522	0.1168	0.0933	0.3665	0.1649	0.3768	0.2259
Planning ability very high	110<=pa	0.0920	0.1276	0.1244	0.2256	0.0965	0.0991	0.3166	0.1648	0.3705	0.2499
Locus of control low	16 <=loc	0.0729	0.1007	0.0456	0.1106	0.1633	0.1156	0.3552	0.1666	0.3630	0.2399
Locus of control medium	14<=loc<=15	0.0745	0.1104	0.0660	0.1517	0.1309	0.1022	0.3801	0.1702	0.3485	0.2214
Locus of control high	11<=loc<=13	0.0877	0.1167	0.0832	0.1574	0.1219	0.1044	0.3744	0.1718	0.3329	0.2277
Locus of control very high	loc<=10	0.0681	0.1046	0.1317	0.2376	0.0916	0.0806	0.3497	0.1934	0.3589	0.2514
Parent high school/tech		0.0706	0.1026	0.0781	0.1676	0.1450	0.1129	0.3643	0.1758	0.3420	0.2279
No parent high school/tech		0.0845	0.1163	0.0787	0.1691	0.1050	0.0875	0.3673	0.1736	0.3644	0.2441
Parent university		0.1084	0.1288	0.1294	0.2138	0.1224	0.1003	0.3497	0.1826	0.2902	0.2381
No parent university		0.0605	0.0931	0.0538	0.1345	0.1328	0.1079	0.3731	0.1707	0.3798	0.2272
Saved for post-secondary education		0.0936	0.1192	0.0953	0.1880	0.1338	0.1079	0.3612	0.1720	0.3161	0.2278
Not saved for post-secondary education		0.0389	0.0670	0.0424	0.1072	0.1201	0.0998	0.3746	0.1808	0.4240	0.2318
Recent student		0.0765	0.1073	0.0905	0.1908	0.1227	0.1063	0.3944	0.1800	0.3159	0.2148
Not recent student		0.0755	0.1097	0.0625	0.1316	0.1380	0.1040	0.3281	0.1607	0.3958	0.2509
Good market understanding		0.0740	0.1058	0.1036	0.2018	0.1183	0.1005	0.3639	0.1808	0.3402	0.2308
Poor market understanding		0.0773	0.1099	0.0626	0.1411	0.1363	0.1081	0.3665	0.1712	0.3573	0.2367
Know government aid		0.0753	0.0947	0.1161	0.1945	0.1327	0.1156	0.3431	0.1662	0.3328	0.2365
Does not know government aid		0.0572	0.0878	0.0873	0.1905	0.1055	0.0950	0.3244	0.1792	0.4255	0.2586
Leisure TV — Low	Leisure TV < 0.33	0.0746	0.1168	0.0640	0.1554	0.1110	0.0954	0.3871	0.1804	0.3634	0.2293
Leisure TV — High	0.33<=Leisure TV	0.0773	0.1009	0.0901	0.1772	0.1445	0.1110	0.3478	0.1683	0.3403	0.2383
Current student debt		0.0959	0.1245	0.0639	0.1463	0.1735	0.1210	0.3516	0.1643	0.3151	0.2167
No current student debt		0.0695	0.1016	0.0831	0.1746	0.1148	0.0956	0.3701	0.1781	0.3625	0.2390
Burdened by debt		0.0769	0.1164	0.0282	0.0834	0.1410	0.1118	0.4000	0.1715	0.3538	0.2182

(continued)

Table A.21: Calculated Probabilities of Loan and Matching Grant Behaviour for Full-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

	P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Not burdened by debt	0.0754	0.1015	0.1181	0.2041	0.1202	0.0994	0.3381	0.1728	0.3483	0.2468
ON	0.0560	0.0855	0.0708	0.1722	0.1121	0.0861	0.3717	0.1716	0.3894	0.2379
BC	0.0319	0.0494	0.0745	0.1835	0.1915	0.1389	0.3617	0.1581	0.3404	0.2061
NS	0.0859	0.1193	0.0491	0.1274	0.0859	0.0636	0.4540	0.1719	0.3252	0.1960
AB	0.0633	0.0959	0.0253	0.0849	0.1646	0.1328	0.2785	0.1295	0.4684	0.2327
QC, NF	0.3606	0.2631	0.2879	0.3176	0.0739	0.0505	0.2462	0.3618	0.0313	0.0502

Table A.22: Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations)

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Age 18–25	ref	ref	ref	ref	ref	ref	ref	ref
Age 25–45	**-1.837** ***	-3.78	**-1.767** ***	-2.82	-0.367	-1.04	-0.334	-1.08
Age 45 and older	**-2.037** ***	-3.66	-37.283	0.00	**-1.172** **	-2.71	**-0.909** *	-2.54
Male	0.061	0.19	0.332	0.81	0.189	0.79	-0.271	-1.36
Female	ref	ref	ref	ref	ref	ref	ref	ref
Household income low	0.568	1.37	-0.466	-0.89	0.411	1.43	-0.052	-0.21
Household income medium	ref	ref	ref	ref	ref	ref	ref	ref
Household income high	-0.139	-0.35	-0.674	-1.47	-0.360	-1.17	-0.105	-0.45
Married	-0.407	-1.01	**-1.233**	-1.74	**-0.596** *	-2.13	-0.230	-1.05
Has children under 5 years of age	0.351	0.61	-33.550	0.00	0.110	0.27	0.409	1.29
Immigrant	1.251	1.49	1.009	0.96	**1.891** ***	3.32	**1.574** **	3.08
Non-urban resident	-0.130	-0.28	-0.433	-0.52	-0.181	-0.54	0.183	0.70
Hold diploma	0.367	1.46	0.315	0.65	-0.017	-0.09	0.069	0.45
Post-secondary education experience	0.188	0.31	1.120	1.12	-0.395	-1.07	0.259	0.79
High school diploma	-0.136	-0.21	0.357	0.32	0.258	0.62	0.013	0.04
High school equivalency	-1.040	-0.86	-32.645	0.00	0.389	0.67	0.114	0.23
Part-time employed	1.471	2.30	0.939	0.72	**1.125** **	2.72	**1.518** ***	4.36
Full-time employed	**-0.022** *	-0.03	-0.650	-0.49	0.298	0.73	**0.840** **	2.51
Disabled	0.598	1.37	0.167	0.28	0.478	1.61	0.247	1.01
Unemployed	0.706	1.06	0.203	0.15	0.458	1.11	**1.066** **	3.04
Post-secondary student	**1.678** *	2.07	**3.138** *	2.45	**1.294** *	2.20	**1.779** ***	3.46
High school student	1.494	1.32	**4.288** *	2.27	0.945	1.05	**1.505**	1.86
Neither in labour market, disabled, nor student	ref	ref	ref	ref	ref	ref	ref	ref

(continued)

Table A.22: Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Employer pays	-0.462	-0.87	-0.874	-1.13	-0.683	-1.63	**-0.874** **	-2.69
Mathematical competency low	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*
Mathematical competency medium	-0.233	-0.52	-0.399	-0.63	-0.327	-1.04	**0.552**	1.91
Mathematical competency high	-0.449	-0.74	-0.258	-0.32	-0.311	-0.71	**0.711**	1.87
Risky decisions	-0.099	-1.14	0.014	0.12	0.053	0.87	-0.083	-1.62
Willingness to save	**0.119** ***	6.88	**0.118** ***	5.35	0.045	3.59	**0.033** ***	3.20
Positive attitude about education and labour market	**0.259** **	2.58	0.148	1.18	0.089	1.28	0.051	0.88
Planning ability	0.006	0.50	0.015	1.02	-0.020	-2.32	**-0.016** *	-2.21
Locus of control	0.002	0.05	-0.017	-0.27	0.009	0.25	-0.009	-0.32
Parent high school/tech	-0.414	-1.29	-0.425	-0.99	0.336	1.38	-0.047	-0.24
Parent university	-0.287	-0.82	-0.217	-0.49	0.043	0.16	0.041	0.19
Saved for post-secondary education	0.437	1.12	-0.209	-0.42	0.406	1.55	-0.013	-0.06
Recent student	0.092	0.24	**1.703**	1.92	0.221	0.86	0.189	0.91
Good market understanding	-0.198	-0.60	0.424	1.03	0.319	1.32	-0.115	-0.58
Know government aid	0.174	1.26	-0.155	-0.86	0.045	0.46	**0.219** **	2.73
Leisure TV	-1.209	-0.90	-0.351	-0.19	0.337	0.37	-0.700	-0.89
Current student debt	0.360	0.87	0.034	0.06	0.176	0.61	-0.215	-0.87
Burdened by debt	0.312	0.93	**-1.091** *	-2.13	0.630	2.59	0.231	1.15
ON	**-1.339**	-1.84	-0.376	-0.42	-0.750	-1.32	**-0.826**	-1.65
BC	**-2.075** *	-2.26	-0.693	-0.73	-0.718	-1.15	**-1.008**	-1.86
NS	-0.456	-0.58	0.293	0.28	-0.654	-1.06	-0.557	-1.05
AB	**-1.982** *	-2.40	-1.745	-1.64	-0.873	-1.46	**-1.311** *	-2.48
QC/NF	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*	*ref*

(continued)

Table A.22: Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

	1. Loan and 20% Matching Grant		2. Only Matching Grant(s) and Grants		3. Only Loans and Grants		4. Only Grants	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant	**-5.418** **	-2.57	**-7.006** *	-2.25	-1.139	-0.78	0.170	0.14
Log likelihood	-977.776							
Comparison group: No education preference								

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.23: Calculated Probabilities of the Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations)

	P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
	Mean	STD	Mean	STD	Mean	STD	Mean	STD	Mean	STD
Age 18–25	0.1600	0.1351	0.2280	0.2447	0.1720	0.1189	0.2840	0.1434	0.1560	0.1435
Age 25–45	0.0479	0.0725	0.0320	0.1003	0.1826	0.1218	0.3607	0.1596	0.3767	0.2060
Age 45 and older	0.0777	0.1020	0.0000	0.0000	0.1192	0.0926	0.2850	0.1496	0.5181	0.2165
Male	0.0872	0.1092	0.0949	0.1922	0.1897	0.1280	0.2821	0.1433	0.3462	0.2366
Female	0.0855	0.1127	0.0692	0.1599	0.1466	0.1052	0.3544	0.1610	0.3442	0.2305
Household income low	0.0974	0.1247	0.0617	0.1607	0.2305	0.1380	0.2695	0.1426	0.3409	0.2387
Household income medium	0.0631	0.0861	0.0831	0.1890	0.1395	0.0945	0.3455	0.1646	0.3688	0.2343
Household income high	0.0993	0.1155	0.0993	0.1737	0.1213	0.0778	0.3566	0.1503	0.3235	0.2237
Married	0.0584	0.0870	0.0130	0.0561	0.1169	0.0840	0.3669	0.1714	0.4448	0.2294
Not married	0.1012	0.1195	0.1169	0.2044	0.1920	0.1248	0.2984	0.1440	0.2914	0.2171
Has children under 5 years of age	0.0736	0.1114	0.0000	0.0000	0.1389	0.0927	0.4088	0.1812	0.3787	0.2264
No children under 5 years of age	0.0870	0.1106	0.0873	0.1808	0.1675	0.1194	0.3147	0.1535	0.3435	0.2340
Immigrant	0.0682	0.0977	0.0455	0.1047	0.2727	0.1690	0.4773	0.1934	0.1364	0.1186
Non-immigrant	0.0872	0.1117	0.0824	0.1780	0.1601	0.1118	0.3142	0.1512	0.3560	0.2325
Non-urban resident	0.0805	0.1179	0.0201	0.0685	0.1477	0.1049	0.3758	0.1646	0.3758	0.2185
Urban resident	0.0874	0.1097	0.0929	0.1874	0.1694	0.1199	0.3115	0.1539	0.3388	0.2356
Diploma = 1	0.0894	0.1159	0.0929	0.1887	0.1693	0.1219	0.3127	0.1568	0.3357	0.2380
Diploma = 2	0.0691	0.0884	0.0403	0.1023	0.1547	0.1021	0.3578	0.1509	0.3781	0.2107
Diploma = 3	0.0896	0.0998	0.0317	0.1210	0.1437	0.0962	0.3740	0.1575	0.3610	0.2093
Diploma = 4	0.0677	0.0510	0.0185	0.0444	0.1865	0.1183	0.2619	0.1943	0.4654	0.2655
Diploma = 5 (1 obs.)	0.3205		0.0000		0.0655		0.1873		0.4267	
Post-secondary education experience	0.0760	0.1008	0.0732	0.1780	0.1593	0.1173	0.3329	0.1594	0.3587	0.2292
No post-secondary education experience	0.1250	0.1369	0.1087	0.1620	0.1902	0.1167	0.2826	0.1434	0.2935	0.2413
High school diploma	0.0775	0.1020	0.0746	0.1779	0.1623	0.1169	0.3246	0.1588	0.3611	0.2332

(continued)

Table A.23: Calculated Probabilities of the Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

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		P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
No high school diploma		0.1168	0.1340	0.1015	0.1644	0.1777	0.1201	0.3147	0.1528	0.2893	0.2248
High school equivalency		0.0208	0.0219	0.0000	0.0000	0.2083	0.1531	0.3542	0.1706	0.4167	0.2219
No high school equivalency		0.0900	0.1130	0.0852	0.1791	0.1633	0.1150	0.3205	0.1566	0.3409	0.2332
Neither in labour market or student		0.0455	0.0834	0.0091	0.0377	0.1364	0.1027	0.2000	0.1273	0.6091	0.2143
Unemployed		0.0741	0.0952	0.0247	0.0609	0.1852	0.1204	0.3519	0.1430	0.3642	0.1913
Post-secondary student		0.1188	0.1133	0.3861	0.2987	0.1485	0.1310	0.2376	0.1594	0.1089	0.1229
Part-time employed		0.1012	0.1225	0.0238	0.0506	0.2024	0.1328	0.4048	0.1372	0.2679	0.1582
Full-time employed		0.0500	0.0746	0.0154	0.0396	0.1538	0.1075	0.3423	0.1507	0.4385	0.1912
Disabled		0.0823	0.1049	0.0585	0.1575	0.1700	0.1215	0.3254	0.1555	0.3638	0.2221
Not disabled		0.0928	0.1204	0.1168	0.1960	0.1587	0.1113	0.3174	0.1607	0.3144	0.2474
High school student		0.2125	0.1350	0.2375	0.1747	0.1500	0.0871	0.3000	0.1334	0.1000	0.0646
Not high school student		0.0737	0.1001	0.0649	0.1675	0.1673	0.1203	0.3246	0.1596	0.3695	0.2297
Employer pays		0.0889	0.1230	0.0444	0.1219	0.1111	0.0794	0.2333	0.1266	0.5222	0.2414
Employer does not pay		0.0860	0.1097	0.0847	0.1799	0.1719	0.1198	0.3325	0.1575	0.3249	0.2236
Mathematical competency low		0.0851	0.1168	0.0426	0.1026	0.2128	0.1490	0.2128	0.1219	0.4468	0.2621
Mathematical competency medium		0.0865	0.1100	0.0878	0.1851	0.1568	0.1087	0.3432	0.1549	0.3257	0.2221
Mathematical competency high		0.0886	0.1123	0.0819	0.1761	0.1572	0.1098	0.3378	0.1533	0.3344	0.2249
Risky decisions — Low	rd<=3	0.0813	0.1084	0.0777	0.1738	0.1837	0.1314	0.2898	0.1616	0.3675	0.2486
Risky decisions — Neutral	4<=rd<=5	0.0775	0.0995	0.1127	0.2180	0.1549	0.1040	0.3662	0.1601	0.2887	0.2070
Risky decisions — High	6<=rd	0.0880	0.1131	0.0744	0.1653	0.1678	0.1202	0.3139	0.1557	0.3559	0.2364
Least willing to save	save<=9	0.0850	0.1103	0.0836	0.1853	0.1400	0.1018	0.3396	0.1633	0.3518	0.2385
Less than average willing to save	10<=save<=19	0.0939	0.1132	0.0900	0.1807	0.1745	0.1128	0.3263	0.1542	0.3153	0.2203
More than average willing to save	20<=save<=29	0.0733	0.1078	0.0516	0.1241	0.2203	0.1467	0.2645	0.1330	0.3903	0.2371
Most willing to save	30<=save	0.0222	0.0334	0.0234	0.0794	0.1527	0.1187	0.2904	0.1582	0.5112	0.2347
Positive attitude about education and labour market — Low	posatt<=7	0.0603	0.0733	0.0553	0.1299	0.1810	0.1173	0.3420	0.1509	0.3615	0.2136

(continued)

Table A.23: Calculated Probabilities of the Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

		P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.1102	0.1089	0.0989	0.1857	0.1725	0.1153	0.3533	0.1533	0.2651	0.1841
Positive attitude about education and labour market — High	10<=posatt	0.2084	0.1608	0.2020	0.2786	0.1322	0.1151	0.2561	0.1549	0.2013	0.2018
Planning ability low	pa<=89	0.0584	0.0843	0.0465	0.1102	0.1784	0.1172	0.3297	0.1575	0.3869	0.2326
Planning ability medium	90<=pa<=99	0.0791	0.0998	0.0861	0.1807	0.1648	0.1105	0.3303	0.1607	0.3398	0.2274
Planning ability high	100<=pa<=109	0.1152	0.1336	0.0960	0.1994	0.1585	0.1273	0.3063	0.1523	0.3240	0.2384
Planning ability — Very high	110<=pa	0.0753	0.0999	0.0538	0.1202	0.2291	0.1310	0.3629	0.1528	0.2789	0.1970
Locus of control low	16 <=loc	0.0755	0.0983	0.0785	0.1652	0.1620	0.1042	0.3226	0.1640	0.3614	0.2454
Locus of control medium	14<=loc<=15	0.0939	0.1143	0.0649	0.1558	0.1489	0.1024	0.3185	0.1556	0.3738	0.2273
Locus of control high	11<=loc<=13	0.1021	0.1293	0.1286	0.2369	0.1186	0.1022	0.2821	0.1469	0.3685	0.2486
Locus of control very high	loc<=10	0.0748	0.0968	0.0542	0.1328	0.1896	0.1203	0.3270	0.1560	0.3544	0.2352
Parent high school/tech		0.0849	0.1138	0.0721	0.1591	0.1718	0.1203	0.3275	0.1514	0.3437	0.2226
No parent high school/tech		0.0972	0.1150	0.0828	0.1690	0.1638	0.1194	0.3279	0.1564	0.3284	0.2264
Parent university		0.0900	0.1196	0.1238	0.2349	0.1285	0.0991	0.3031	0.1680	0.3546	0.2516
No parent university		0.0781	0.1029	0.0781	0.1735	0.1822	0.1193	0.3234	0.1575	0.3383	0.2247
Saved for post-secondary education		0.0991	0.1218	0.0845	0.1781	0.1399	0.1106	0.3207	0.1577	0.3557	0.2456
Not saved for post-secondary education		0.1014	0.1193	0.1329	0.2240	0.1608	0.1142	0.3252	0.1590	0.2797	0.2333
Recent student		0.0790	0.1062	0.0555	0.1396	0.1681	0.1195	0.3210	0.1569	0.3765	0.2266
Not recent student		0.1020	0.1203	0.1003	0.1961	0.1722	0.1217	0.3161	0.1524	0.3094	0.2259
Good market understanding		0.0530	0.0790	0.0389	0.1089	0.1519	0.1079	0.3357	0.1673	0.4205	0.2305
Poor market understanding		0.0845	0.1060	0.1006	0.2026	0.1630	0.1131	0.3421	0.1573	0.3099	0.2120
Know government aid		0.0885	0.1174	0.0547	0.1273	0.1693	0.1235	0.2969	0.1543	0.3906	0.2509
Does not know government aid		0.0828	0.1107	0.1036	0.2091	0.1746	0.1212	0.3047	0.1494	0.3343	0.2299
Leisure TV — Low	Leisure TV < 0.33	0.0884	0.1113	0.0663	0.1488	0.1602	0.1153	0.3333	0.1615	0.3517	0.2351
Leisure TV — High	0.33<=Leisure TV	0.0835	0.0946	0.1234	0.1988	0.1699	0.1254	0.2978	0.1445	0.3254	0.2381

(continued)

Table A.23: Calculated Probabilities of the Determinants of Loan and Matching Grant Behaviour for Part-Time Study (Multinomial Logit, 881 Observations) (Cont'd)

	P (Preference for Matching Grants and Loans)		P (Preference for Matching Grants and Grants)		P (Preference for Loans and Grants)		P (Preference for Grants)		P (Reference Group: No Preference for Education)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Current student debt	0.0688	0.0945	0.0927	0.1964	0.1613	0.1183	0.2611	0.1471	0.4161	0.2580
No current student debt	0.0887	0.1198	0.0678	0.1614	0.1413	0.0974	0.3444	0.1630	0.3578	0.2278
Burdened by debt	0.0843	0.1035	0.0911	0.1854	0.1857	0.1288	0.3043	0.1506	0.3346	0.2371
Not burdened by debt	0.1005	0.1248	0.0685	0.1593	0.2100	0.1308	0.3105	0.1487	0.3105	0.2129
ON	0.0816	0.1058	0.0846	0.1802	0.1511	0.1093	0.3263	0.1602	0.3565	0.2385
BC	0.0795	0.1120	0.0282	0.0877	0.2077	0.1315	0.3410	0.1505	0.3436	0.2131
NS	0.0916	0.1102	0.1222	0.2125	0.1324	0.0931	0.3075	0.1615	0.3462	0.2481
AB	0.0649	0.0841	0.0678	0.1760	0.1563	0.1137	0.3215	0.1623	0.3894	0.2374
QC, NF	0.0319	0.0401	0.0957	0.2110	0.1915	0.1368	0.3404	0.1511	0.3404	0.2117
	0.1227	0.1326	0.0491	0.1293	0.1411	0.0930	0.3681	0.1611	0.3190	0.1972
	0.0506	0.0785	0.0316	0.1045	0.1962	0.1344	0.2722	0.1302	0.4494	0.2238
	0.3508	0.2874	0.2908	0.3253	0.1415	0.1864	0.1851	0.2497	0.0318	0.0507

Table A.24: Factors Related to Income-Sensitive Loan Behaviour With $5,000 in Debt (Bivariate Probit With Selection Bias, 280 Observations, 72 Censored Observations)

Variable	Coefficient	t-statistic
No preference for $5,000 ISR loan		
Age 18–25	*ref*	*ref*
Age 25–45	**2.745**	1.82
Age 45 and older	**3.171** *	2.01
Male	-0.528	-0.91
Female	*ref*	*ref*
Household income low	-8.723	0.00
Household income medium	*ref*	*ref*
Household income high	-6.620	0.00
Married	**3.178** *	2.18
Hold diploma	-0.523	-0.81
No high school diploma or equivalency	-0.028	-0.03
Part-time employed	-1.784	-1.46
Full-time employed	0.024	0.02
Unemployed	-1.608	-1.48
High school student	-9.128	0.00
Neither in labour market, disabled, nor student	*ref*	*ref*
High school student x Household income medium	9.138	0.00
High school student x Household income low	*ref*	*ref*
High school student x Household income high	7.338	0.00
Employer pays	0.210	0.21
Mathematical competency low	*ref*	*ref*
Mathematical competency medium	0.413	0.61
Mathematical competency high	**-2.024**	-1.86
Risky decisions	-0.025	-0.12
Willingness to save	-0.042	-1.13
Positive attitude about education and labour market	0.009	0.05
Planning ability	-0.012	-0.73
Parent high school/tech	0.447	0.84
Parent university	0.245	0.44
Saved for post-secondary education	0.176	0.35
Recent student	**1.455**	1.82
Good market understanding	-0.327	-0.68
Leisure TV	-3.048	-1.21
Constant	9.726	0.00

(continued)

Table A.24: Factors Related to Income-Sensitive Loan Behaviour With $5,000 in Debt (Bivariate Probit With Selection Bias, 280 Observations, 72 Censored Observations) (Cont'd)

Variable	Coefficient		t-statistic
No preference for $5,000 loan			
Male	**-0.499**	**	-2.61
Female	*ref*		*ref*
Household income low	**-0.845**	**	-2.88
Household income medium	*ref*		*ref*
Household income high	-0.008		-0.03
Hold diploma	-0.073		-0.40
High school student	**-0.954**	*	-2.32
High school student x Household income medium	0.235		0.35
High school student x Household income low	*ref*		*ref*
High school student x Household income high	-0.121		-0.26
Employer pays	0.414		0.94
Mathematical competency low	*ref*		*ref*
Mathematical competency medium	**-0.538**		-1.87
Mathematical competency high	-0.491		-1.30
Risky decisions	-0.084		-1.52
Willingness to save	**-0.044**	***	-4.08
Leisure TV	-0.753		-1.01
Credit cards	-0.243		-0.95
Slow to pay	**-0.448**		-1.82
Co-signer	-0.497		-1.16
Constant	**3.664**	***	5.92
Rho	0.114		0.970
Log likelihood	-156.177		

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.25: Calculated Probabilities of Factors Related to Income-Sensitive Loan Behaviour With $5,000 in Debt (Bivariate Probit With Selection Bias, 280 Observations, 72 Censored Observations)

		prob (No ISR Preference / No Loan Preference)	
		Mean	Standard Deviation
Age 18–25		0.8458	0.2035
Age 25–45		0.9713	0.0844
Age 45 and older		0.9671	0.1087
Male		0.8851	0.1919
Female		0.9403	0.1317
Household income low		0.9039	0.1628
Household income medium		0.9304	0.1508
Household income high		0.9162	0.1701
No children		0.9188	0.1632
Children		0.9024	0.1587
Diploma = 1		0.9094	0.1681
Diploma = 2		0.9556	0.1335
Diploma = 3		0.9655	0.0728
Diploma = 4		0.9214	0.1198
No high school equivalency or high school diploma		0.8302	0.2074
High school equivalency or high school diploma		0.9633	0.1063
Neither in labour market nor student		0.9709	0.0820
Unemployed		0.9170	0.1701
Post-secondary student		0.9778	0.0691
Part-time employed		0.9604	0.1067
Full-time employed		0.9825	0.0625
High school student		0.8000	0.2148
Not high school student		0.9626	0.1060
Low income high school students		0.6928	0.2703
Not low income high school students		0.9232	0.1540
High income high school students		0.8491	0.2054
Not high income high school students		0.9320	0.1470
Employer pays		0.9259	0.1078
Employer does not pay		0.9158	0.1660
Mathematical competency low		0.9282	0.1410
Mathematical competency medium		0.9285	0.1317
Mathematical competency high		0.8437	0.2727
Risky decisions — Low	rd<=3	0.9177	0.1527
Risky decisions — Neutral	4<=rd<=5	0.9015	0.1754
Risky decisions — High	6<=rd	0.9495	0.1614
Least willing to save	save<=9	0.9590	0.0926
Less than average willing to save	10<=save<=19	0.9108	0.1813
More than average willing to save	20<=save<=29	0.9047	0.1648
Most willing to save	30<=save	0.8973	0.1724
Positive attitude about education and labour market — Low	posatt<=7	0.9308	0.1509

(continued)

Table A.25: Calculated Probabilities of Factors Related to Income-Sensitive Loan Behaviour With $5,000 in Debt (Bivariate Probit With Selection Bias, 280 Observations, 72 Censored Observations) (Cont'd)

		prob (No ISR Preference / No Loan Preference)	
		Mean	**Standard Deviation**
Positive attitude about education and labour market — Medium	8<=posatt<=9	0.9216	0.1501
Positive attitude about education and labour market — High	10<=posatt	0.8899	0.1939
Planning ability low	pa<=89	0.9009	0.1792
Planning ability medium	90<=pa<=99	0.8929	0.1912
Planning ability high	100<=pa<=109	0.9392	0.1258
Planning ability very high	110<=pa	0.9523	0.1097
Parent high school/tech		0.9397	0.1325
No parent high school/tech		0.8731	0.2008
Parent university		0.9106	0.1658
No parent university		0.9202	0.1607
Saved for post-secondary education		0.9141	0.1719
Not saved for post-secondary education		0.9218	0.1407
Recent student		0.9698	0.0956
Not recent student		0.8770	0.1887
Good market understanding		0.8633	0.2030
Poor market understanding		0.9354	0.1411
Leisure TV — Low	Leisure TV < 0.33	0.9353	0.1401
Leisure TV — High	0.33<=Leisure TV	0.9032	0.1757

Table A.26: Factors Related to a Positive Attitude to Education and the Labour Market
(Ordered Probit, 801 Observations, No High School Students)

	Coefficient		t-statistic
Basic/Control variables			
Employer pays	**0.395**	**	2.66
Age 18–25	*ref*		*ref*
Age 25–45	**0.257**	*	2.01
Age 45 and older	**0.646**	***	4.24
Male	**0.193**	*	2.17
Female	*ref*		*ref*
Mathematical competency low	*ref*		*ref*
Mathematical competency medium	**0.255**	*	2.02
Mathematical competency high	**0.531**	***	3.18
Dispositional variables			
Willingness to save	0.005		1.11
Risky decisions	0.005		0.22
Saved for post-secondary education	**0.179**		1.82
Planning ability	**0.006**		1.87
Locus of control	**-0.061**	***	-4.83
Parent high school/tech	**-0.145**		-1.65
Parent university	0.126		1.29
School performance	0.109		1.21
Peers liked school	0.077		0.79
Liked school	-0.001		-0.01
Situational variables			
Post-secondary education experience	0.155		1.08
Hold diploma	**-0.155**	*	-2.26
No children	-0.037		-0.30
Married	0.026		0.26
Non-urban resident	0.137		1.16
Unemployed	-0.027		-0.18
Post-secondary student	0.306		1.61
Part-time employed	0.072		0.49
Full-time employed	0.021		0.14
Neither in labour market nor student	*ref*		*ref*
Current student debt	**-0.247**	*	-2.36
Burdened by debt	**0.218**	*	2.30
Current debt	-0.027		-0.27
Household income low	0.130		1.24
Household income medium	*ref*		*ref*

(continued)

Table A.26: Factors Related to a Positive Attitude to Education and the Labour Market (Ordered Probit, 801 Observations, No High School Students) (Cont'd)

	Coefficient	t-statistic
Household income high	0.150	1.39
Immigrant	0.006	0.03
Has children under 5 years of age	-0.154	-0.99
Disabled	-0.003	-0.02
Good market understanding	**0.244** **	2.77
Leisure TV	-0.077	-0.21
Institutional variables		
High school diploma	0.037	0.23
High school equivalency	**0.374**	1.67
ON	-0.046	-0.24
BC	-0.049	-0.23
NS	0.110	0.52
AB	-0.124	-0.60
QC and NF	*ref*	*ref*
Knows government aid	0.018	0.50
Delta1	0.092	0.18
Delta2	1.485	2.87
Log likelihood	-765.150	

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

Table A.27: Factors Related to a Positive Attitude to Education and the Labour Market (Ordered Probit, 80 Observations, High School Students)

	Coefficient		t-statistic
Basic/Control variables			
Male	**0.798**	*	2.34
Female	*ref*		*ref*
Mathematical competency low	*ref*		*ref*
Mathematical competency medium	**0.942**	*	2.18
Mathematical competency high	0.618		0.79
Dispositional variables			
Willingness to save	-0.033		-1.58
Risky decisions	0.075		0.70
Saved for post-secondary education	**0.795**	*	2.17
Planning ability	0.002		0.22
Locus of control	**-0.141**	*	-2.39
Parent high school/tech	0.498		1.29
Parent university	-0.001		0.00
Claudia	0.292		0.96
School performance	**0.768**	*	2.16
Peers liked school	0.566		1.44
Situational variables			
Burdened by debt	0.686		1.55
Current debt	0.124		0.30
Household income low	0.083		0.14
Household income medium	*ref*		*ref*
Household income high	0.361		0.95
Good market understanding	-0.067		-0.21
Leisure TV	1.971		1.30
Institutional variables			
Knows government aid	**0.394**	**	2.90
Delta1	1.305		0.73
Delta2	3.009		1.66
Log likelihood	-63.246		

Notes: Values in bold text indicate coefficients that are statistically significant as follows: no asterisks indicates the 10 per cent level, * indicates the 5 per cent level, ** indicates the 1 per cent level, and *** indicates the 0.1 per cent level.

"*ref*" indicates the reference alternative for interpreting the α coefficients for the related group of variables.

References

Andres, L., & Looker, D. (2001). Rurality and capital: educational expectations and attainments of rural, urban/rural and metropolitan youth. *Canadian Journal of Higher Education, 21(*2), 1–46.

Andrews, L. (1999). *Does HECS Deter? Factors affecting university participation by low SES groups.* Canberra, Australia: Higher Education Division, Department of Education, Training and Youth Affairs.

Ansic, D., & Powell, M. (1997). Gender differences in risk behaviour in financial decision-making: An experimental analysis. *Journal of Economic Psychology, 18*, 605–628.

Birnbaum, A. (1968). Some latent trait models and their use in inferring an examinee's ability. In F. M. Lord & M. R. Novick (Eds.) *Statistical theories of mental test scores.* Reading, MA: Addison-Wesley.

Blondel, S., Lohéac, Y., & Rinaudo, S. (2000). *Rational decisions of drug users: An experimental approach, preliminary report.* Paper presented at the 20th Arne Ryde Symposium on Experimental Economics.

Bock, R. D. (1972). Estimating item parameters and latent ability when responses are scored in two or more nominal categories. *Psychometrica, 37,* 29–51.

Bound, J., & Turner, S. (2002). Going to war and going to college. *Journal of Human Resources, 20*(4), 784–815.

Chen, S. H. (2002). *Is investing in college education risky?* (Working paper). Albany, NY: Department of Economics, State University of New York at Albany.

Cross, P. (1981). *Adults as learners.* San Francisco: Jossey-Bass.

Dingwall, J. (2000). *Improving numeracy in Canada.* Retrieved August 20, 2004, from http://www.nald.ca/nls/inpub/numeracy/improve/cover.htm.

Dupuy, R., Mayer, F., & Morissette, R. (2000). *Rural youth: Stayers, leavers and return migrants.* Ottawa: Statistics Canada.

Eckel, C., & Grossman, P. (1998). Are women less selfish than men? Evidence from dictator experiments. *Economic Journal, 108,* 726–735.

Eckel, C., & Grossman, P. (2001). Chivalry and solidarity in ultimatum games. *Economic Inquiry, 39*, 171–188.

Eckel, C., & Grossman, P. (in press). Differences in the economic decisions of men and women: Experimental evidence. In C. Plott & V. Smith (Eds.), *Handbook of Experimental Results.* New York: Elsevier.

Eckel, C., Johnson, C., & Montmarquette, C. (2002). *Will the working poor invest in human capital? A laboratory experiment.* (SRDC Working Paper 02-01). Ottawa: Social Research and Demonstration Corporation.

Frederick, S., Loewenstein, G., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature, XL*(2), 351–401.

Frenette, M. (2002). *Too far to go on? Distance to school and university participation.* Ottawa: Statistics Canada.

Frenette, M. (2003). *Access to College and University: Does distance matter?* Ottawa: Statistics Canada.

Gal, I. (Ed.) (2000). *Adult numeracy development: Theory, research, practice.* Cresskill, NJ: Hampton Press.

Goodman, J., & Ittner, J. (1992). The accuracy of home owners' estimates of house value. *Journal of Housing Economics, 2,* 339–357.

Harbaugh, W., & Krause, K. (2000). Children's altruism in public good and dictator experiments. *Economic Inquiry, 38*, 95–109.

Holt, C., & Laury, S. (2002). Risk aversion and incentive effects. *American Economic Review, 92*(5), 1644–1655.

Levhari, D., & Weiss, Y. (1974). The effect of risk on the investment in human capital. *American Economic Review, 64*(6), 950–963.

National Center for Education Statistics. (1998). *Adult education participation: Review of conceptual frameworks and empirical studies.* (Working Paper No. 98-10). Washington, DC: US Department of Education.

Read, D. (2001). Is time-discounting hyperbolic or subadditive? *Journal of Risk and Uncertainty, 23*, 5–32.

Roth, A. (2002). The economist as engineer: Game theory, experimentation, and computation as tools for design economics. *Econometrica, 70,* 1341–1378.

Rubenson, K. (2001). *Measuring motivation and barriers in the AETS.* (Working Paper No. R-01-9-2E). Hull, QC: Applied Research Branch, Human Resources Development Canada.

Samuelson, P. A. (1937). A note on the measurement of utility. *Review of Economics Studies 4,* 155–161.

Schubert, R., Brown, M., Gysler, M., & Brachinger, H. W. (1999). Financial decision-making: Are women really more risk-averse? *American Economic Review, 89*, 381–385.

Stefor, N. S., & Turner, S. T. (2002). Back to school: Federal student aid policy and adult college enrollment. *Journal of Human Resources, 37*(2), 336–352.