Financial capability and Essential Skills: An exploratory analysis

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Executive summary

The Social Research and Demonstration Corporation (SRDC) has partnered with the Financial Consumer Agency of Canada (FCAC) to take advantage of a unique research opportunity to explore the linkage between literacy and Essential Skills (LES) and financial capability. The relationship between literacy and financial capability is currently not well understood. Indeed, the Task Force on Financial Literacy in 2010[1] identified a number of critical research gaps in the area of literacy and financial capability. Among its recommendations, the report suggests further research on the link between financial literacy, basic literacy skills and numeracy; further assessment of the socio-demographic differences in financial norms and behaviours; and to explore financial literacy within the broader concept of well-being measurement.[2] This paper contributes to each of these objectives by exploring the relationship between financial capability, literacy, and a series of rich indicators of socio-demographics, psychosocial outcomes and well-being.

The analysis conducted in this report builds on an existing large scale research project, UPSKILL, a pan-Canadian research and demonstration project, commissioned by the Office of Literacy and Essential Skills (OLES) a branch within Employment and Social Development Canada (ESDC). The project is utilizing a random assignment design to provide the most reliable measures of the impacts and return on investment of literacy and Essential Skills training in the workplace. Over 100 firms and nearly 1,500 lower-skilled workers in the Accommodations sector were enrolled in eight provinces.[3] The sample used for the analysis in this report is composed of 524 UPSKILL participants who volunteered for the project and who completed the follow-up survey module on financial capability.

The analysis included two primary components. First, a regression analysis was conducted to explore the relationship between financial capability and various individual factors including socio-demographics, confidence and attitudinal measures, and skills and knowledge. Second, an impact analysis was conducted utilizing the experimental design, to measure the effect of UPSKILL training on financial capability domains — making ends meet, keeping track and planning ahead. The model guiding the regression analysis was based on the conceptual framework used by the Task Force on Financial Literacy in conjunction with the UPSKILL evaluation framework and available measures.

One of the key findings of the first analysis is that the majority of the variance of the financial capability measures included in this study is attributed to socio-demographic and psychosocial characteristics. Age (over 35 years of age) was positively related with all three domains of financial capability. Psychosocial characteristics as resilience, motivation, self-efficacy and life-satisfaction were all positively related with making ends meet and keeping track. Conversely, stress and parental status (with children younger than 18 years) were both negatively related with making ends meet. Household

1 Task Force on Financial Literacy, 2010.

2 See Appendix A for more recommendations and findings from the Financial Literacy Task Force.

3 See Gyarmati, D. et al., 2014 for further detail on the target sample and recruitment process. While results of this study are highly applicable to the Tourism industry and related occupations in the broader Retail Services sector, the findings with respect to financial capability cannot be directly extrapolated to the broader Canadian population.

income (above $30,000) and social networks were both positively associated with the ability to plan ahead.

With respect to essential skills and financial capability, the regression analysis showed that numeracy and thinking skills were positively related with financial capability. Having higher numeracy (Level 3) was positively correlated with the ability to make ends meet while a higher level of thinking skills is positively correlated with the ability to plan ahead. However, no statistically significant association was observed for document use, oral communication, and working with others on any of the three domains of financial capability. Moreover, contrary to expectations, document use was found to have a negative relationship with one measure on the domain of making ends meet, namely, keeping up with bills without problems.

These findings suggest that further study is warranted to explore causal relationships and whether financial capability of front-line workers in the accommodations sector can be enhanced through complementary, targeted financial literacy interventions that support specific psychosocial resources and attitudes (i.e., resilience, motivation, self-efficacy, social networks, and stress management) as well as on the essential skills of numeracy and critical thinking.

The second component of the analysis looked at the impacts of UPSKILL training on the financial capability of respondents. Results indicate that UPSKILL training appears to have had a **negative** impact on the domain of making ends meet and that this effect arises among a particular subgroup of participants who are least likely to declare their income. Paradoxically, training has also led to improvements in literacy skills of participants, notably document use, along with accompanying gains in job retention and earnings. Based on these findings, we hypothesize that the negative impact on making ends meet may result from increased expenditures and possibly increased access and incidence of debt, rather than a deterioration of one's financial situation. Though we have no direct measures of household expenditures or debt levels available, we speculate that some respondents who fail to report their income do so due to uncertainty rather than refusal and that this group have higher propensities for *unplanned* expenditures when earnings increase, which might give rise to difficulties in making ends meet.

Four areas of future inquiry are recommended to further explore the findings of this research. First, further research is needed to explore the development and evaluation of curricula, training tools, and delivery models focused on improving financial capability among front-line workers in the accommodations sector. Based on our findings, it is recommended that emphasis be placed on testing the effectiveness of complementary interventions focused on relevant psychosocial and essential skills in an effort to maximize the impact of existing financial literacy training and resources. Second, additional industry or cross-sector studies would be beneficial in order to determine if these results are applicable to the broader Canadian population. Third, further study of the apparent negative impact on the domain of making ends meet is needed. Data on household expenditures and debt levels would benefit this analysis, preferably utilizing UPSKILL or similar experimental design. Fourth, further research is needed to explore the complexities of the relationship between the various Essential Skills and financial capability. One could aim to develop a financial literacy "subscale" that captures the relative "weights" of each Essential Skill. This would better serve a wide range of future research into financial capability.

Introduction

A growing body of research has shown that literacy is associated with large differences in employability, wage rates, income and reliance on social transfers. Adults with higher literacy skills earn more, experience less unemployment, and have less reliance on government transfers than those with low literacy.[4] Literacy has also been linked to a series of social and health outcomes including the probability of experiencing illness, the length of recovery, and the cost of treatment. Individuals with low literacy become ill more often, experience workplace injuries at a higher rate, and take longer to recover.[5]

The relationship between literacy and financial capability is less well understood and has been studied less frequently. Indeed, the Task Force on Financial Literacy in 2010[6] identified a number of critical research gaps in the area of literacy and financial capability. Among its recommendations, the report suggests further research on the link between financial literacy, basic literacy skills and numeracy; further assessment of the socio-demographic differences in financial norms and behaviours; and to explore financial literacy within the broader concept of well-being measurement.[7] This paper contributes to each of these objectives by exploring the relationship between financial capability, literacy, and a series of rich indicators of socio-demographics, psychosocial outcomes and well-being.

The Social Research and Demonstration Corporation (SRDC) has partnered with the Financial Consumer Agency of Canada (FCAC) to take advantage of a unique research opportunity to explore the linkage between literacy and Essential Skills and financial capability by building on an existing large scale national research project. UPSKILL, a pan-Canadian research and demonstration project, was commissioned by the Office of Literacy and Essential Skills (OLES) a branch within Employment and Social Development Canada (ESDC). The project is utilizing a random assignment design to provide the most reliable measures of the impacts and return on investment of literacy and Essential Skills training in the workplace. Over 100 firms and nearly 1,500 workers in the Accommodations sector were enrolled in eight provinces.[8]

Participants in the UPSKILL study were administered a series of skills assessments and surveys before and after the training. In partnership with FCAC, SRDC expanded the post-training surveys to include questions on financial capability for the purpose of investigating its relationship with literacy, notably, on five key measures of Essential Skills including numeracy, document use, thinking skills, oral communication and working with others. The richness of the corresponding survey data also allows for a preliminary investigation of relationships between financial capability and a series of psychosocial outcomes and indicators of well-being. The experimental design also affords us the unique opportunity

4 Osberg, 2000; Green and Riddell, 2001; Green and Riddell, 2002; Green and Riddell, 2007; Raudenbush and Kasim, 2002; and Statistics Canada and OECD, 2005.

5 Rudd, Kirsch and Yamamoto, 2004.

6 Task Force on Financial Literacy, 2010.

7 See Appendix A for more recommendations and findings from the Financial Literacy Task Force.

8 Gyarmati, D. et al., 2014.

to measure the impacts of an Essential Skills training intervention on financial capability, albeit training that was not focused specifically on financial capability.

This report is divided into six sections. The first section presents a conceptual framework adopted for this project, which guides the selection of variables that are included when modelling financial capability. The second section presents more detail on the specific domains of financial capability used in the analysis. In the third section, we present attributes of the research sample and compare these with related studies of the Canadian population. In the fourth section, results are presented from a regression analysis to identify the correlation observed between financial capability, literacy skills, and various socio-demographic, psychosocial and well-being measures. The fifth section presents estimates of the impacts of the Essential Skills training on participants' financial capabilities. A final section offers a concluding summary and implications for policy.

Financial capability conceptual framework

The basis for this research is the conceptual framework presented by the Financial Service Authority (FSA) and Personal Finance Research Centre (PFRC) in United Kingdom which builds on the Adult Financial Capability Framework developed by the FSA and the Basic Skills Agency (BSA).[9] This framework has served as the foundation for the development of the financial capability surveys in the UK.

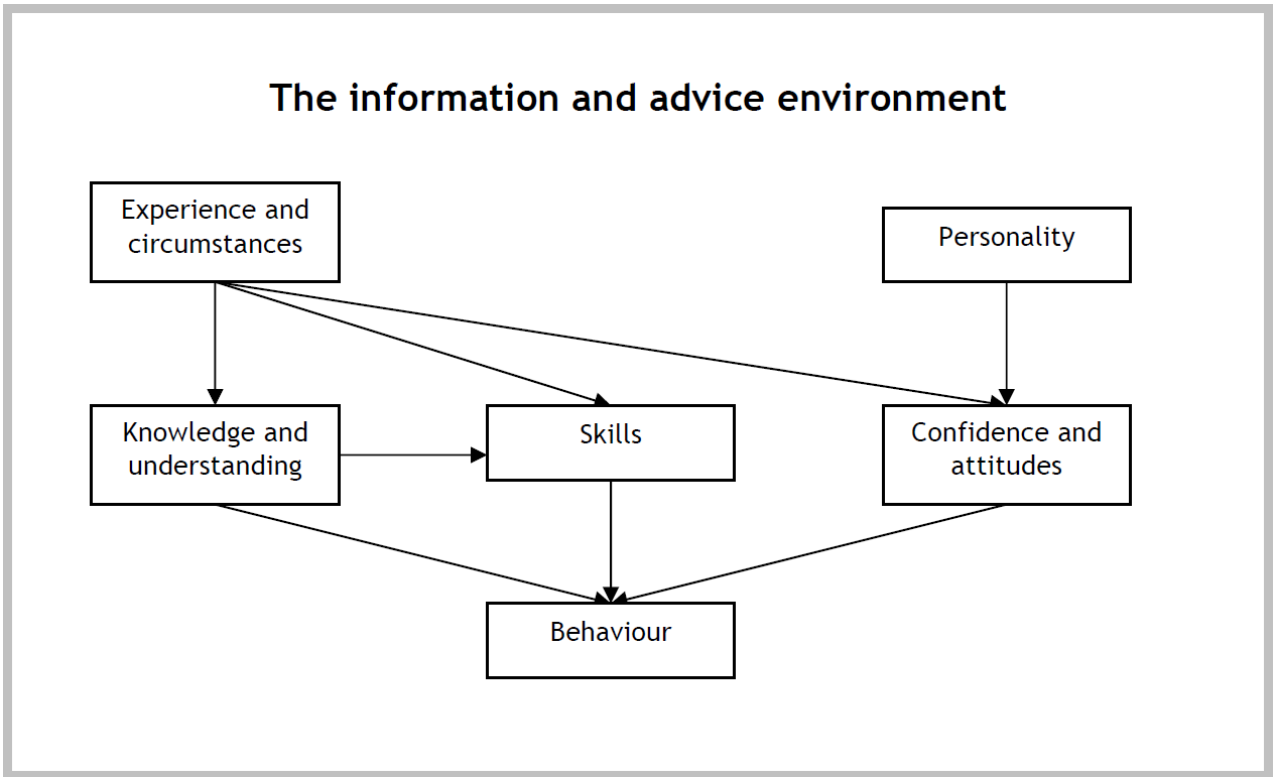
This framework was also the foundation for the financial literacy definition adopted by the Canadian government in the Task Force on Financial Literacy. Financial literacy has been defined as "having the knowledge, skills and confidence to make responsible finance decisions." Within that definition the following main elements may be defined:

- **Knowledge** refers to an understanding of personal and broader financial matters;
- **Skills** refer to the ability to apply that financial knowledge in everyday life;
- **Confidence** means having self-assurance to make important decisions; and
- **Responsible financial decisions** refers to the ability of individuals to use the knowledge, skills and confidence they have gained to make choices appropriate to their own circumstances.

These concepts are influenced by a person's experience and circumstances and by their personality and their level of financial capability can be measured by examining their behaviour. A diagrammatic representation of those relationships is shown in Figure 1. A more detailed description of the relationships among those concepts is provided in Appendix B.

[9] FSA, 2005.

Figure 1 Financial capability conceptual framework (FSA, 2005)



Financial capability domains

The definition of financial capability used in this research, which is supported by the work of Stephen McKay (2011), comprises five domains. They are: making ends meet, keeping track, planning ahead, staying informed, and choosing financial products. These concepts were derived from focus groups conducted by the FSA (2005) to determine what people thought about financial capability in behavioural terms and were used in previous work to design the Canadian Financial Capability Survey (Atkinson, 2006; Kempson et al., 2005).

Three of these domains are used in the current project as they were considered the most important and most relevant to our pilot project population: making ends meet, keeping track of finances, and planning ahead, each of which is defined in Table 1.

It is important to note that no single indicator or even domain can be used to measure financial capability. While the domains are conceptually distinct, it is only by looking across domains that it will be possible to arrive at a picture of what a more or less financially capable person looks like. It should be kept in mind that results are shown relative to others, not as absolute markers such as a success score or a threshold score that would justify concern or a policy intervention.

Table 1 Definition of financial capability domains

Domains	Objectives
Making ends meet	A key aspect of financial management is how people handle their money. Are they able to keep expenditures within their means, or are they running up debt? A core component of money management is therefore the ability to make ends meet. The ability to make ends meet in the context of this research is captured by the self-assessed ability of respondents to keep up with different types of payments on a monthly basis.
Keeping track	Another core aspect of financial management is the strategy that people adopt for keeping track of their finances. In particular, are they setting and keeping to household budgets and how often are they checking their financial position?
Planning ahead	The ability to plan ahead is another core component of financial capability. This includes a number of pieces of information that relate to retirement planning, taking out insurance, dealing with large unexpected expenses, and making wills.

Research sample

The sample used for this research is composed of 524 UPSKILL project participants who volunteered to complete the financial capability module in the participants' post-training survey.[10] Participants in the UPSKILL project were low-skilled workers in the Accommodations industry who agreed to participate in the Essential Skills training program offered at their workplace.

Table 2 shows the socio-demographic characteristics of UPSKILL participants who responded to the survey module on financial capability. The sample is composed mostly of women (70%). Almost half (46%) are under 35 years of age. Three in five are immigrants (59%), about two in five (42%) have no more than a high school diploma and two-thirds (67%) live in a household where annual income is less than $50,000.

Given that the UPSKILL project explicitly targeted workers in frontline positions in the Accommodations sector, our research sample differs from the Canadian population on a few key characteristics. There is a higher proportion of women than the Canadian workforce at large (70% in the sample versus 48% in the Canadian workforce). Over 30% of the workforce have university credentials while only 16% of the research sample have one. Nearly 60% of the research sample are immigrants (foreign-born) where 20.6%[11] of the Canadian population in 2011 was foreign-born.

10 The data collection was conducted from September 2012 to June 2013. For more detail on the research instruments see the final UPSKILL project report, Gyarmati, et al. (2014).

11 2011, Statistics Canada. *Immigration and Ethnocultural Diversity in Canada, National Household Survey, 2011,* Catalogue no. 99-010-X2011001 [cited July 2, 2013]. http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=38

Table 2 Socio-demographic characteristics of the research sample

Characteristics	Categories	Nominal	Financial literacy sample distribution (%)
Gender	Male	157	30%
	Female	367	70%
Age	Younger than 35 years of age	241	46%
	Between 35 and 45 years of age	110	21%
	45 years of age or older	173	33%
Immigration status	Immigrant	309	59%
	Non-immigrant	215	41%
Highest level of educational attainment	Less than a high school diploma	47	9%
	High school diploma	173	33%
	Trade or vocational diploma	89	17%
	College diploma	131	25%
	University degree	84	16%
Household income per year	Less than $30,000	168	32%
	Between $30,000 and $50,000	183	35%
	Greater than $50,000	173	33%
Sample size		**524**	**100%**

Source: Calculations based on results from the financial capability module of the UPSKILL participant follow-up survey, administered 9 months post-program.

Regression results

In this section, we present the results of the full regression analysis to measure the influence of different Essential Skills, socio-demographics, and psychosocial factors on three financial capability domains. The theoretical model on which the regression analysis[12] was based is the financial capability conceptual framework discussed above. While this section presents results of the full extended model, a sequential analysis has also been conducted in order to explore each of its primary components in more

12 An ordinary least squared regression (OLS) was conducted.

detail. Of particular interest is a better understanding of the importance of skills and psychosocial factors in explaining financial capability. Results of the sequential analysis can be found in Appendix E.

Table 3 presents the results from the full extended regression model. The first observation is that our model explains a modest proportion of the variance in financial capability scores, as indicated by the R-squared statistics in first panel of the table. However, the proportions of variance explained in our research sample are higher for first two of the domains compared to McKay (2011): 0.29 vs. 0.24 for making ends meet and 0.23 vs. 0.08 for keeping track of finances. However, for the planning ahead factor, the research sample's adjusted R-squared is considerably smaller than computed for the Canadian population: 0.24 vs. 0.53 for planning ahead.

The remainder of the results have been grouped and presented along the lines of the three main elements of the conceptual framework, namely knowledge and understanding, skills, and confidence and attitudes. A table that summarize the significant predictor variables and non-significant predictor variables per financial capability domain can also be found in Appendix G.

Knowledge and understanding

Individuals require a basic body of knowledge and understanding to draw upon when managing their financial affairs. This knowledge will be acquired in different ways, through experience, education and training; and passive receipt of information from different sources such as family and friends, the media, and information materials produced by the financial sector. The depth of this experience often relates to an individuals' life course circumstances, which are revealed in their socio-demographic profile, including their gender, age, immigration status, education, household income and parental status. To approximate individuals' experience and life course circumstances, socio-demographic characteristics were used along with various measures of social capital, including indicators of the social resources that are accessible within individuals' social networks. UPSKILL measured bridging social capital, specifically, related to the availability of contacts who can provide financial advice, particularly relevant for financial capability.

Gender

Gender differences in financial capability have been highlighted through previous research (McKay, 2011). Women typically demonstrate a greater ability to keep track of their finances than men. However, when additional explanatory variables such as psychosocial characteristics associated with confidence and attitudes are added to the statistical model, as indicated in Table 3, the gender difference is eliminated. It may be that women have a greater amount of psychosocial capital that enables them to better keep track of finances.

Age

The importance of age in relation to financial literacy has also been identified in previous work (McKay, 2011), the underlying concept being that the body of knowledge tends to increase throughout a person's life. Table 3 indicates that individuals, as they grow older, become more capable of making ends meet (by 6.76 points), keeping track of finances (by 6.80 points) and planning ahead (by 8.13 points).

Parental status

Being a parent is one of the stages of life that can put pressure on finances. Indeed, Table 3 indicates that having children under 18 years-old has a negative effect on one's ability to make ends meet (by -5.94 points).

Immigrant status

The expectation would be that immigrants, who typically have fewer resources to draw from here in their non-native country of Canada, would be less able to make good financial decisions. However, in our research sample, no statistically significant results were found in regard to the relationship between immigrant status and financial capability after psychosocial variables were added to the model (Table 3).

Income level

Household income is a factor that one would expect to, quite directly, influence one's ability to make ends meet and to plan ahead. This has been identified by McKay (2011). The results of our analysis using the extended model (Table 3) indicate that the ability to plan ahead increases significantly, by 5.14 points, as household income rises from less than $30,000 per year to $30,000 or greater. No significant correlation between household income and making ends meet is found using the extended model. This would suggest that the other explanatory factors below are more significant drivers of one's perceived ability to make ends meet than income alone.

Education level

Whereas McKay observed in the Canadian population a correlation between the level of education and the ability to make ends meet, to keep track of finances and to plan ahead, no such relationships were detected in our sample, either in the basic or extended models. This likely relates to the fact that in spite of some variation in education levels, all participants who were recruited for UPSKILL are frontline lower skilled workers, most with significant gaps in literacy skills. As such, the relevance of prior education is minimized.

Table 3 Linear regression analysis of each factor score: Extended model

Statistic or variable	Categories	Making ends meet		Keeping track		Planning ahead	
R-squared adjusted		0.22		0.14		0.15	
R-square		0.29		0.22		0.23	
Average score		73.30		55.72		49.31	
Knowledge and understanding: Life course demographics, social capital							
Intercept		81.96		59.26		27.18	
Gender	Female	0.84		3.22		1.53	
Immigration status	Immigrants	-3.50		-0.90		1.36	
Parental status	Parent with children below 18	-5.94	***	-2.00		-0.03	
	35 years old or younger	**---**		**---**		**---**	
Age	35 years old and older	6.76	***	6.80	***	8.13	***
	45 years old and older	-2.96		0.36		2.86	
	Below $30,000 per year	**---**		**---**		---	
Household income	$30,000 and higher	1.51		-0.68		5.14	**
	Above $50,000	2.40		0.52		2.28	
	High school diploma or less						
Education	Post-secondary education diploma or degree	-0.09		-0.33		-0.55	
	University degree only	-0.56		1.48		-0.55	
Skills: Literacy and Essential Skills							
	Level 1	---		---		---	
Essential skills - Document use	Level 2 and above	-4.23		-2.22		-2.88	
	Level 3	-2.14		-0.34		3.34	
	Level 1	---		---		---	
Essential skills - Numeracy	Level 2 and above	-1.88		-2.85		4.63	
	Level 3	2.83	***	0.60		0.51	

Statistic or variable	Categories	Making ends meet		Keeping track		Planning ahead	
Workplace performance - Oral communication	Far below expectation	---		---		---	
	Below expectations and above	-12.71		-3.54		7.22	
	Met expectations and above	6.54		-9.07		-9.13	
	Surpass expectations	-1.30		5.08		3.89	
Workplace performance - Teamwork	Far below expectation	---		---		---	
	Below expectations and above	-3.90		-12.02		9.73	
	Met expectations and above	-2.07		5.53		-6.29	
	Surpass expectations	-0.77		0.70		-1.99	
Workplace performance - Thinking Skills	Far below expectation	---		---		---	
	Below expectations and above	0.61		-4.07		1.84	
	Met expectations and above	1.01		2.56		1.38	
	Surpass expectations	0.92		0.52		7.50	***
Confidence and attitudes: Psychosocial, social capital, well-being							
Psychosocial indicators	Higher future time orientation	0.01		0.93		1.30	
	Higher self-efficacy	4.16	*	6.17	***	-0.43	
	Higher motivation and engagement behaviour	6.69	***	8.06	***	0.08	
	Higher resilience	6.69	***	5.23	***	-0.78	
Social Networks	Larger social network	-1.14		-0.35		4.54	**
Well-being, Stress	Higher life stress	-4.46	**	-2.15		2.22	
	Higher life satisfaction	5.86	***	6.07	***	1.94	
UPSKILL training	Program Group (ref. control group)	-5.84	***	-1.40		0.97	

Source: Calculations from Financial capability module of the UPSKILL employee follow-up survey, administered 9-months post-program.

Note: Statistical significance levels are indicated as: * p < .10; ** p < .05; *** p <.01.

Skills

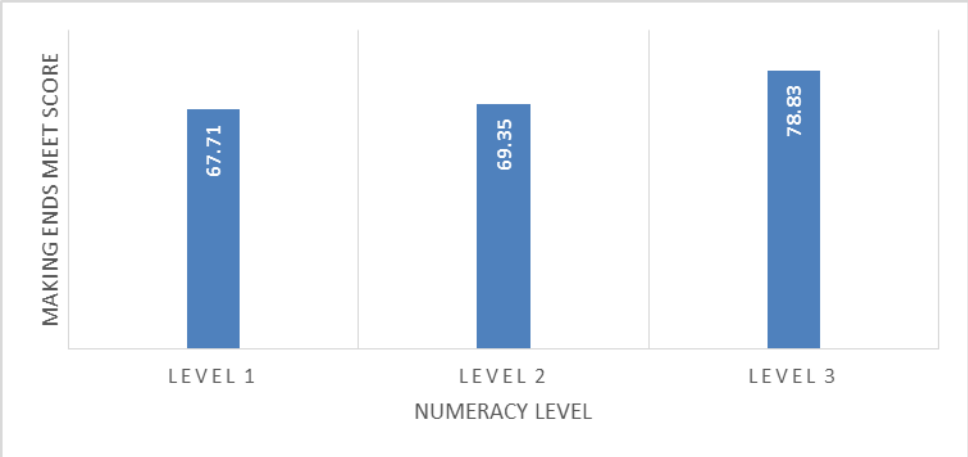
People need skills to apply their knowledge and understanding in order to manage their money and to make appropriate financial decisions. These include basic levels of literacy and numeracy as well as thinking skills which allow them to evaluate information and make comparisons between different products and courses of actions. In this section, we present results of the regression analysis in order to show the influence on financial capability of numeracy and document use (a proxy for basic literacy), which were the focus of the UPSKILL training, as well as a number of workplace performance indicators that embody such Essential Skills as effective communication, teamwork, and thinking skills.

Numeracy

Numeracy assessments[13] were conducted in the UPSKILL project to measure participants' numeracy level. Numeracy refers to one's use of numbers and their ability to think in quantitative terms. This would appear to be an important skill in regard to financial capability behaviours which often entail numerical calculations.

Table 3 indicates that an increase in numeracy from level 2 to level 3 is associated with an improvement in making ends meet, by 2.83 points. In Figure 2, the relationship between being able to make ends meet and numeracy is illustrated on the basis of average scores. The average score of numeracy level 3 participants is 78.83 points which is 16% higher than the average score of level 1 participants at 67.71.

Figure 2 Making ends meet score, by numeracy level[14]



13 The assessments used Tests of Workplace Essential Skills (TOWES) adapted to the UPSKILL project and administered by TOWES certified testers.

14 A two-tailed t-test was applied to the difference between the numeracy levels. The making ends meet average score of Level 3 participants is statistically different than the one of Level 2 participants, with a p-value <.01.

Document use

Document use is defined as the ability to read/interpret and write/complete/produce of documents. These two uses of documents often occur simultaneously as part of the same task, e.g., completing a form, checking off items on a list of tasks, plotting information on a graph, and entering information on an activity schedule.[15] As per a panel of experts,[16] document use combined with the ability to read text is closely linked to financial literacy because money management often involves reviewing various documents (e.g., bank statements, pay statements, RRSP statements, mortgage papers, documents describing financial services, etc.), as well as reading and understanding the information provided in the financial documents (e.g., comprehending information about financial products and services). In other words, to be able to comprehend financial materials, individuals must be able to review documents and read text.

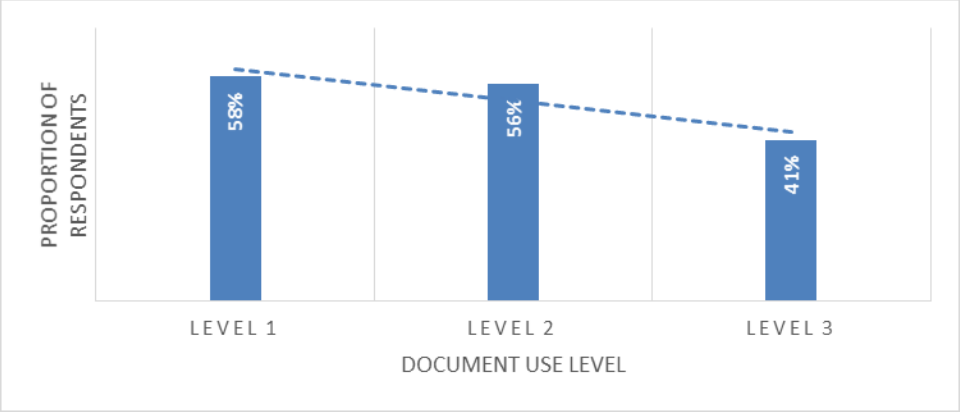
The results in Table 3 indicate no statistically significant relationship between document use skills and financial capability. However, there is important difference in results for this relationship when one includes a covariate for participation in UPSKILL training, compared to regressions without (all other results are robust to changes in this specification). In the full sample, without accounting for training's effects, there is a small negative correlation between document use scores and the domain of making ends meet. In contrast, when one accounts for training's impact, there is no longer a relationship, as program participation appears to have a negative impact on making ends meet (Table 3, bottom row, -5.84).

To investigate this unexpected result further, descriptive analysis by document use level of each factor underlying the making ends meet score was conducted. The factor found to be the most important to the ability to make ends meet is participants' self-assessed ability to keep up with their bills and other financial commitments. (The results for the other factors are shown in Appendix C.) Respondents had the opportunity to give four responses: keeping up with bills and commitments without any problems; keeping up with all bills and commitments, but it is sometimes a struggle; having real financial problems and falling behind with bills or credit commitments; or don't have any bills or credit commitments. As demonstrated in Figure 3, participants at level 3 document use are **less** likely to be able to keep up with their bills without any problems than those at lower document use levels.

15 See OLES definitions on their website: http://www.hrsdc.gc.ca/eng/jobs/les/definitions/

16 CFEE, 2012.

Figure 3 Proportion able to keep up with bills without problems, by document use level[17]



While this relationship exists in the full sample of program and control group members, it is driven largely by increased document use scores among program participants, with accompanying decreases in the sub-domain of keeping up with bills. This negative impact of training will be explored in further detail in the subsequent section of this paper.

Oral communication and working with others

Other Essential Skills besides numeracy and document use have been associated with financial literacy (CFEE, 2012). These include oral communications and teamwork skills. While there were no direct measures of these two skills in the context of UPSKILL pilot project, measures related to workplace performance can be used to proxy these two skills, measured against industry/certification expectations at four levels: far below them, below them, meeting them, and surpassing them.

Oral communication and working with others have not been widely examined in relation to financial literacy. In regard to oral communication, the Literacy Coalition of New Brunswick (2010) suggested that this skill is important for talking to a banker or financial advisor regarding one's goals and plans. Other experts also argue that oral communication is important for working with family members to budget, save, plan for the future, etc. It could also be argued that much of what we do as part of money management involves working with other people.

The relevant performance measures available from the UPSKILL research are the ability of participants to effectively communicate with clients and to work with co-workers (others). However, the results of the analysis indicate the degree to which individuals meet workplace expectations in these domains is not significantly correlated with the ability to make ends meet, to keep track or to plan ahead, as indicated in Table 3. This would suggest there is no relationship between these two measures and financial capability.

[17] A two-tailed t-test was applied to the difference between the document use levels. The proportion of participants that report keeping up with bills without problems is statistically different between Level 3 participants and Level 2 participants, with a p-value <.01.

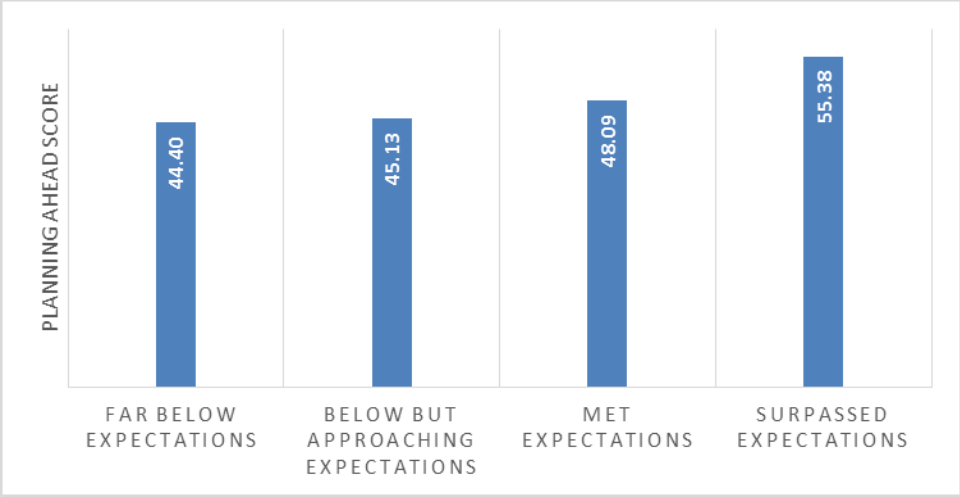
Thinking skills and overall workplace performance

Thinking skills, often referred to more generally as problem solving, is another skill set that may be associated with financial literacy. From the perspective of Canada's Essential Skills framework, thinking skills have been defined as having six components: problem solving, decision making, critical thinking, job task planning and organizing, significant use of memory and finding information. In the context of financial capability, it can be argued that building financial knowledge and understanding entails significant use of memory. It also likely includes the ability to find information and use critical thinking to judge quality and appropriateness of various financial products/services to one's own needs. It can also entail decision making with regards to the appropriateness and the subsequent purchase of financial products and services.

One measure available in the context of this research to capture thinking skills is the participants' overall performance in the workplace, as this likely embodies all of the six components described above. UPSKILL workplace performance assessment considers how individuals meet industry standards across a series of relevant performance measures related to their occupation.

As Table 3 indicates, surpassing workplace expectations is positively related to an ability to plan ahead. The planning ahead score increases by 7.50 points for participants who surpass industry standards when compared to those who are far below expectations (Figure 4).

Figure 4 Planning ahead score, by workplace performance level[18]



[18] A two-tailed t-test was applied to the difference between workplace performance levels. The planning ahead average score of participants that surpassed expectations is statistically different than the one that met expectations, with a p-value <.01.

Confidence and attitudes

Having the knowledge and skills is not sufficient to ensure that people "act" on their acquired knowledge and skill. They must be prepared to take whatever steps are necessary to apply their knowledge and to exercise their skills. This requires having a good deal of self-efficacy, motivation, and resilience. It also requires the ability to look ahead in time. Stress would be expected to put a damper on sound financial decision-making, while being satisfied with one's life would likely have a positive influence. Results for these variables are presented in this section. In the context of the UPSKILL research, a rich set of variables were collected in this area, as they are not only significant contributors to wellbeing in their own right, but they have been hypothesized to influence the effect of the training.[19]

Psychological capital

Action requires confidence and belief in oneself to make a good decision, to affect outcomes, and to achieve personal goals. Individuals must also demonstrate a great sense of resilience in order to be prepared to take whatever steps are necessary to apply their knowledge and to exercise their skills. As well, they must be motivated to invest the time and other resources required and to demonstrate a great sense of self-efficacy in order to be able to exercise their skills and to act on the results. Together these traits are important aspects of psychological capital. Psychological capital is an emerging concept among organizational behaviour scientists. This construct follows the new wave of research in positive psychology and is often used to define organizational and leadership models that looks for positive antecedents relevant to optimal work performance. Psychological capital is composed of four components: hope (will power and way power to accomplish a goal), self-efficacy (personal confidence to successfully complete a task or objective), optimism (personal assurance of a positive outcome) and resilience (the ability to bounce back in the face of adversity). This section highlights the relationship between financial capability and self-efficacy, motivation and engagement and resilience.

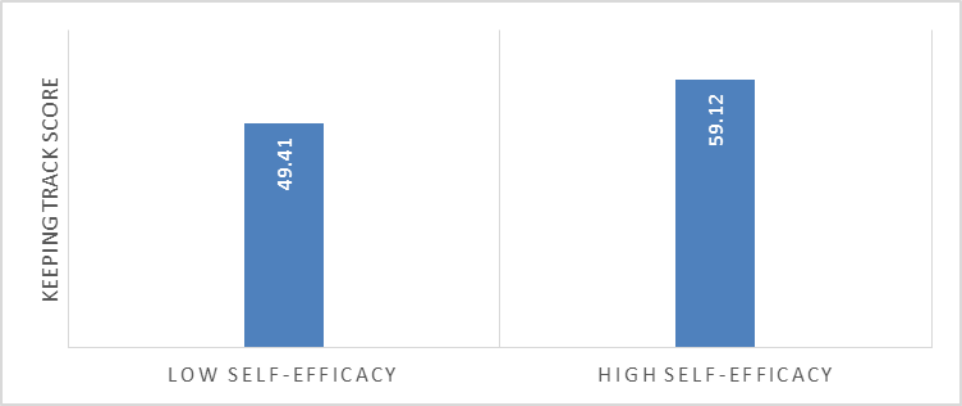
Self-efficacy[20] is the measure of the belief in one's own ability to complete tasks and reach goals. In this project, self-efficacy was measured using 10-element scale based on results from a series of questions asking participants to indicate whether or not the statements are true. As per the final panel of Table 3, demonstrating high[21] self-efficacy behaviour has a positive relationship with the domain of making ends meet and with ability to keep track of finances, 4.16 points and 6.17 points respectively. An illustration of the average score of keeping track by self-efficacy level (Figure 5) indicates that those with high-efficacy are better able to keep track of finances.

19 Note that many of these variables were grouped under the rubric Psychosocial Capital, while other are included under experience and knowledge, such as social capital. See Gyarmati et al. (2014) for a full exposition of the research framework for UPSKILL.

20 Ormrod, J. E. (2006).

21 On average, saying that the statements are all moderately true or exactly true (greater than 30 out of 40).

Figure 5 Keeping track of finances score, by self-efficacy level[22]



Motivation/engagement is another psychological measure possibly associated with financial capability and has been identified as significantly predicting knowledge and training transfer effects.[23] A four-element scale was used to measure this based on a series of questions that ask participants to indicate if they agree or disagree with the relevant statements capturing motivation and engagement.[24] Demonstrating a high[25] level of motivation and engagement at work has a positive relation with the domain making ends meet and keeping track of finances — 6.69 points and 8.06 points, respectively. A change in that behaviour appears to be what can most influence the ability to keep track of finances. Figure 6 shows that the average score of keeping track is higher for more motivated/engaged individuals.

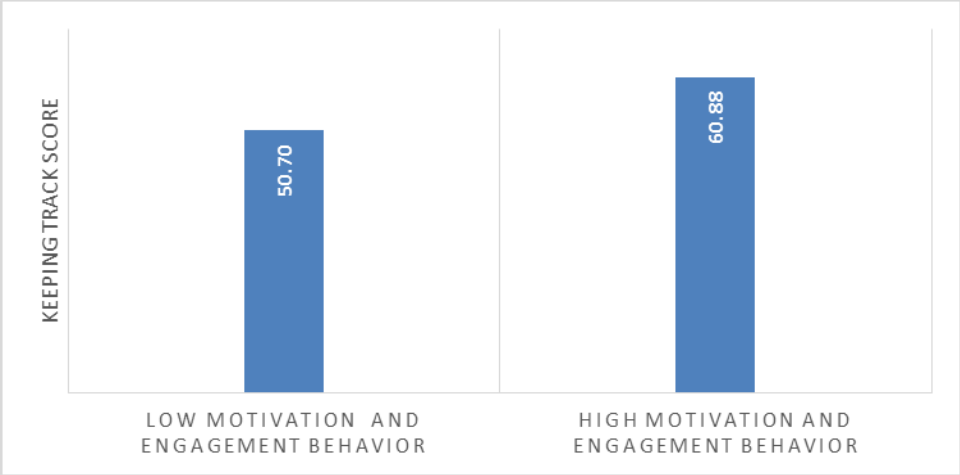
22 A two-tailed test was applied to the difference between self-efficacy levels. The keeping track score of participants that have a higher level of self-efficacy is statistically different than the one that have a low self-efficacy level, with a p-value <.01.

23 Gyarmati, D. et al. (2014).

24 Those statements are: I try to plan out the things I have to do in my job; In my job, I use my time well and arrange my work area so that I can work under the best conditions; I persist in my job even when it is challenging or difficult.; I find I sometimes reduce my chances of doing well in my job.

25 On average, that respondent agrees or strongly agrees with all the statements (greater than 16 out of 20).

Figure 6 Keeping track score, by motivation and engagement behaviour level[26]



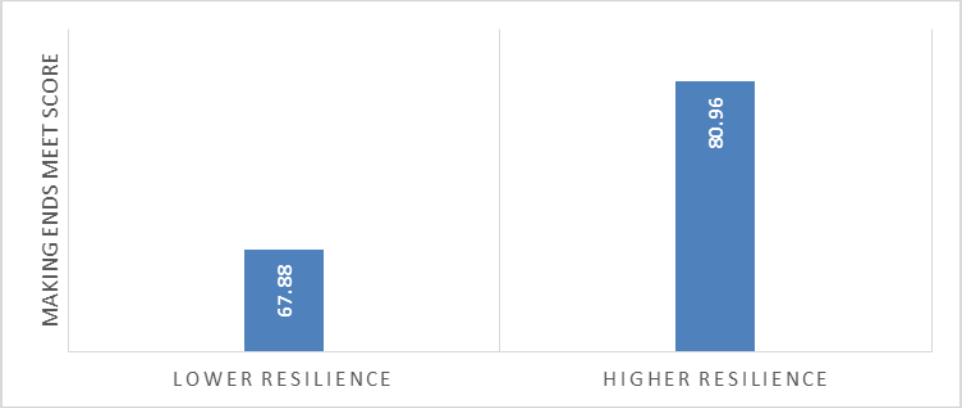
Resilience is a two-dimensional construct concerning the exposure of adversity and the positive adjustment outcomes of that adversity. This two-dimensional construct implies two judgments: one about a "positive adaptation" and the other about the significance of risk (or adversity). A two-element scale measures if participant considers the statements to be true or not.[27] High[28] resilience has a positive relation with making ends meet and keeping track (6.69 and 5.23 points respectively). Resilience appears to be the concept that has the highest correlation with making ends meet after age. In Figure 7, a descriptive presentation of the difference in the average making ends meet score by resilience level is shown and indicates that highly resilient individuals are considerably better able to make ends meet than those with lower resilience.

26 A two-tailed test was applied to the difference between motivation and engagement levels. The keeping track score of participants that have a higher motivation and engagement level is statistically different than the one that have a low one at a significance level of 1 per cent.

27 Those statements are: I am able to adapt to change; I tend to bounce back after illness or hardship.

28 On average, that respondent mentioned that the statements are “often true” or “true nearly all the time” with all the statements (greater than 6 out of 8).

Figure 7 Making ends meet score, by resilience level[29]



Social networks

Social networks can be a source of support both at work and in society at large. With respect to social network characteristics, of particular interest is their size (how many contacts one can call on for various kinds of support), their density (how many know each other), and their diversity (how many are from different walks of life). Individuals typically benefit from having larger, less dense, and more diverse networks as these can leverage a wider range of resources.[30]

Table 3 shows the results for one aspect of social networks, their size, and indicates that having a larger social network of four people or more is positively correlated with the ability to plan ahead (by 4.54 points). This means that individuals are more likely to plan ahead, for example, in regard to insurance, pensions and making a will, if they have more people they can turn to for help or information.

Future orientation

Future orientation is the tendency to think beyond the present toward the future. Future orientation is an important element of financial capability, particularly in regard to planning and budgeting. Understanding that one's actions today, such as saving or investing a dollar, have implications for the future is a key financial literacy concept. In the UPSKILL project, a 5-question battery was used to gauge future orientation.[31] However, as the results presented in Table 3, no significant link was found between these measures of higher[32] future orientation and financial capability.

29 A two-tailed test was applied to the difference between resilience levels. The making ends meet score of participants that have a higher resilience level is statistically different than the one that have a low one, with a p-value <.01.

30 Gyarmati, D. et al. (2014).

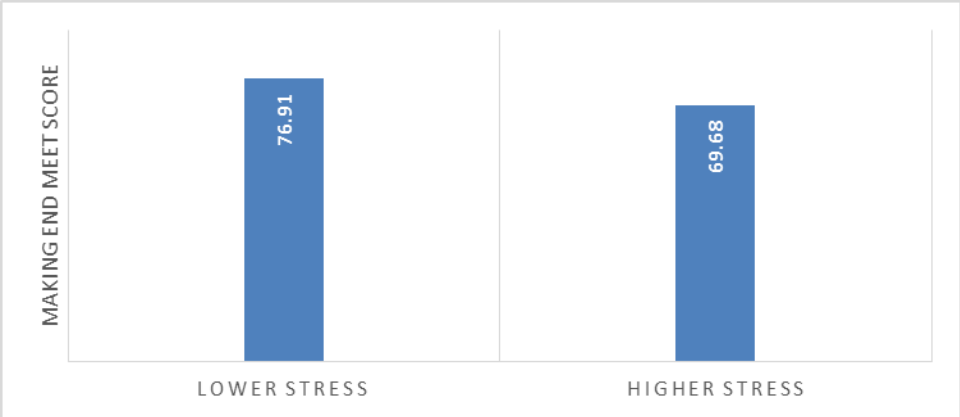
31 Gyarmati et al., 2014.

32 On average, that respondent mentioned that the statements are "Very true" with all the statements (greater than 16 out of 20).

Well-being: Stress levels

Davis et al. (2004) reported that a key stressor for many people is economic hardship. People with economic hardship often worry about being unable to make ends meet, repossession and foreclosure, and the shame of being unable to support their family. In UPSKILL, participants were asked to think of the amount of stress in their life and indicate how stressful most days were. The results presented in Table 3 indicate that, indeed, participants who indicated that most days were a bit, quite a bit or extremely stressful were significantly less capable of making ends meet (by 4.46 points). The inverse relationship is demonstrated also in Figure 8, which shows that those with lower stress have a higher score on making ends meet than those experiencing higher stress.

Figure 8 Making ends meet score, by level of stress[33]



Well-being: Life satisfaction

There has been some research into the relationship between life satisfaction, financial wealth and financial capability (Irving, 2012; Kalantarie, 2013; Taylor, 2011). Those who are financially capable are more likely to have accumulated financial wealth which in turn leads to higher life satisfaction. Or, reversing things, those who are satisfied with life would be more confident in making sound financial decisions. The results presented in Table 3 indicates there is in fact a positive relation between making ends meet and life satisfaction[34] (5.86 points). The relation is stronger between life satisfaction and the ability to keep track of finances (6.07 points). Interestingly, there is no relation between life satisfaction and planning ahead.

33 A two-tailed test was applied to the difference between stress levels. The making ends meet score of participants that have a higher stress level is statistically different than the one that have a low one, with a p-value <.01.

34 The respondent were asked "Using a scale of 1 to 10 where 1 means 'Very Dissatisfied' and 'Very satisfied,' how do you feel about your life as a whole right know?" In the context of this research, having a "higher life satisfaction" was corresponds to the respondent to an answer greater or equal to 8 out of 10.

Impact of UPSKILL training on financial capability

In this section estimates of the impact of the UPSKILL Essential Skills training program on financial capability are presented. Each participant in the UPSKILL project was randomly assigned to one of two groups – the program group or the control group. Program group participants received an offer to participate in the UPSKILL training, while the control group did not. On average, about 3 out of 4 program group participants took up the offer and received about 20 hours of Essential Skills training in their workplace. The training covered a variety of Essential Skills important to the Accommodations sector, notably oral communication and document use, as well as numeracy, thinking skills/problem solving, and working with others.

Impacts of the training on various outcomes, including financial capability, are measured as the differences in post-training outcome levels between the program and control groups. As observed in Table 4, UPSKILL appears to have had a negative impact on one of the three financial capability domains, namely making ends meet (4.03 points, first row) confirming what was presented earlier in Table 3. Given that training has simultaneously led to improvements in literacy skills of participants, notably document use, along with accompanying gains in job retention and earnings, this is somewhat paradoxical. It may suggest that negative impacts on making ends are related to increased expenditures and possibly increased access and incidence of debt, rather than a deterioration of one's financial situation.

Table 4 UPSKILL adjusted[35] impacts on financial capability scores, overall sample

Outcome	Program group	Control group	Impact		Standard error
Making ends meet	71.6	75.6	**-4.03**	**	(2.0)
Keeping track of finances	55.2	56.4	**-1.22**		(1.7)
Planning ahead	49.8	48.7	**1.10**		(1.8)
Sample size	**301**	**223**	**524**		

Source: Calculations based on results from the financial capability module of the UPSKILL survey, administered 9-months post-program.

Notes: Two-tailed t-tests were applied to the difference-in-difference impact estimates, i.e., the difference between the program and control group change between the post-training and pre-training levels.

Statistical significance levels are indicated as: * p < .10; ** p < .05; *** p <.01.

35 Unadjusted impacts are calculated as the difference between the mean outcome levels of the program and control group. In order to increase the precision of these estimates in small samples, "adjusted" impacts can be calculated through a regression in which the outcome is modeled as a linear function of the respondents' research group and a range of socio-economic and demographic characteristics measured before random assignment. Though random assignment ensures that there are no systematic differences between program and control groups, small differences can arise by chance, particularly in smaller samples. The regression "adjusts" the impact estimate to account for these baseline differences between program and control group members.

An analysis of subgroup impacts was conducted to explore this negative impact further. The hypothesis is that the negative effect is predominantly experienced by a particular subgroup of participants and this may reveal further insights into their difficulty. Differences in impacts on each domain of financial capability were assessed across a number of key characteristics including gender, age, immigrant status, and income.

Few statistically significant differences in impacts between subgroups were observed. Men and women, younger and older participants, immigrants and non-immigrants, and those with higher and lower incomes each experience similar impacts with respect to financial capability. However, one particular subgroup stood out with significant differences: undeclared vs. declared income. Table 5 illustrates that the negative impact on making ends meet is exclusively felt by those who did not report their incomes at baseline. No negative impacts were observed among those who reported their incomes, either high or low income.

Though we have no direct measures of household expenditures or debt levels available in the current study, participants who are less cognizant of their income and therefore fail to report it on surveys, may have higher propensities for *unplanned* expenditures when earnings increase. They are also potentially less able to keep track of their finances. As shown in Table 5, those with undeclared incomes have lower scores on this domain compared to those who do report their incomes (comparing the third and sixth row: 45.1 vs. 51.0 in the program group; and 40.4 vs. 50.6 in the control group). So when skill gains arising from UPSKILL produce even modest gains in job stability or earnings, these participants may exceed their available resources. This may explain the negative correlation between keeping up with bills and document use.

This may suggest some caution for policies that aim to increase literacy among particular subgroups that are currently less cognizant/careful with their money and who may be at the margins of receiving additional credit. When one raises their Essential Skills to a level that offers additional job security or earnings, they may engage in further unplanned expenditures. This would argue for at least some supplementary training, to accompany a core literacy curriculum, in support of sound budgeting and financial management.

Table 5 UPSKILL impacts on financial literacy concepts, declared versus undeclared income sub-group analysis

Outcome	Program group	Control group	Impact		Standard error	Subgroup difference	
Undeclared income (at baseline)							
Making ends meet	65.5	77.7	**-12.3**	***	(3.3)		
Keeping track	53.2	54.2	**-1.0**		(3.6)		
Planning ahead	45.1	40.4	**4.7**		(4.0)		
Declared income (at baseline)							
Making ends meet	73.0	75.1	**-2.1**		(1.9)	**10.2**	***
Keeping track	55.7	56.9	**-1.2**		(1.8)	**-0.3**	
Planning ahead	51.0	50.6	**0.3**		(1.9)	**-4.4**	
Sample size	**301**	**223**	**524**				

Source: Calculations from UPSKILL financial literacy module, administered 9-months post-program.

Notes: Sample sizes vary for individual measures due to missing values. Only those who completed both pre- and post-assessments are included.

Two-tailed t-tests were applied to difference-in-difference between the program and control group outcomes.

Statistical significance levels are indicated as: * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Conclusions, policy implications, and future research

The main purpose of this report is to explore the relationship between essential skills, a number of socio-demographic and psychosocial factors with financial capability. This was carried out through regression analysis based on a conceptual framework used by the Task Force on Financial Literacy and the literature using data from the UPSKILL pan-Canadian demonstration project.

One of the key finding of theses analysis is that the majority of the variance of the financial capability measures included in this study is attributed to socio-demographic and psychosocial characteristics. Age (over 35 years of age) was positively related with all three domains of financial capability. Psychosocial characteristics as resilience, motivation, self-efficacy and life-satisfaction were all positively related with making ends meet and keeping track. Conversely, stress and parental status (with children younger than 18 years) were both negatively related with making ends meet. Household income (above $30,000) and social network both positively associated with the ability to plan ahead.

With respect to essential skills and financial capability, the analysis showed that numeracy and thinking skills were positively linked with financial capability. Having numeracy skills at Level 3 was positively correlated with the ability to make ends meet. Having a higher level of thinking skills was positively correlated with planning ahead. However, no statistically significant association was observed for document use, oral communication, and working with others on any of the three domains of financial capability. Moreover, contrary to expectations, document use was found to have a negative relationship with one particular measure on the domain of making ends meet, namely, keeping up with bills without problems.

These findings suggest that further study is warranted to explore causal relationships and whether financial capability of front-line workers in the accommodations sector can be enhanced through complementary, targeted financial literacy interventions that support specific psychosocial resources and attitudes (i.e., resilience, motivation, self-efficacy, social networks, and stress management) as well as on the essential skills of numeracy and critical thinking.

Furthermore, the impact analysis also revealed that the UPSKILL training appears to have had a **negative** impact on the domain of making ends meet and that this effect arises among a particular subgroup of participants who are least likely to declare their incomes. Paradoxically, training has also led to improvements in literacy skills of participants, notably document use, along with accompanying gains in job retention and earnings. Based on these findings, we hypothesize that that the negative relation with making ends meet may result from increased expenditures and possibly increased access and incidence of debt, rather than a deterioration of one's financial situation. Though we have no direct measures of household expenditures or debt levels available, we speculate that some respondents who fail to report income may do so due to a lack of awareness of income level. We hypothesize that these workers may have higher propensities for *unplanned* expenditures when earnings increase, which might give rise to difficulties in making ends meet.

Further research is needed to explore these hypotheses. Four areas for further inquiry are recommended.

First, further research is needed to explore the development and evaluation of curricula, delivery models, and supplemental tools focused on improving financial literacy and capability. Based on our findings, it is recommended that emphasis be placed on testing the effectiveness of complementary interventions focused on relevant psychosocial and essential skills in an effort to maximize the impact of existing financial literacy training and resources.

Second, in order to determine if these results are applicable to a broader group of the Canadian population beyond the respondents of this study, additional industry or cross-sector studies would be beneficial. Similarly, additional study of the relationship between financial capability and literacy and Essential Skills among unemployed populations would extend the usefulness of these results.

Third, further study of the apparent negative impact on the domain of making ends meet is needed. It appears that Essential Skills training alone has a negative impact on a particular subgroup of the population that are less aware of their income. The current hypothesis that needs to be investigated is whether when one raises their Essential Skills to a level that offers additional job security and earnings, do they engage in further unplanned expenditures and possibly incur additional debt. If this is the case, it may be beneficial to add budgeting and financial management training to Essential Skills training, particularly for at risk subgroups. Data on household expenditures and debt levels would benefit this analysis, preferably still in the context of an experimental design. Further data collection with the UPSKILL sample is one possible option, either in the form of additional surveys, and/or qualitative studies with the group of individuals who experienced negative impacts.

Fourth, further research is needed to explore the complexities of the relationship between the components of literacy, numeracy and financial capability. More specifically, elements of each Essential Skill, whether numeracy, document use, thinking skills, or oral communication, likely contribute towards financial capability, and vary based on context. One could aim to develop a financial literacy "subscale" that captures the relative "weights" of each literacy skill. This would better serve a wide range of future research into financial literacy.

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Appendix A: Relevant Results from the Financial Literacy Taskforce

This appendix lays out relevant findings and recommendations of the Task Force on Financial Literacy (2010) related to this report.

Figure A-1 Who's struggling? Who's doing better?

	Making ends meet	Keeping track of finances	Planning ahead
Who's struggling?	▪ Aboriginal Canadians ▪ Young adults ▪ Very recent immigrants ▪ Low-income and low-net-worth households	▪ Seniors ▪ Adults who let others make most major and ongoing financial decisions for them	▪ Seniors ▪ Aboriginal Canadians ▪ Very recent immigrants ▪ Young adults ▪ Low-income and low-net worth households ▪ Singles
Who's doing better?	▪ Seniors ▪ High-income households	▪ Very recent immigrants	▪ Homeowners

Recommendations of the Task Force:

- **Recommendations 30: The Task Force recommends that the Governments of Canada continue to sponsor and undertake research in financial literacy and to share Canadian and international research findings with all stakeholders.**
    - Investing in Research: In consideration of the work required to fulfill its mandate, the Task Force identified areas requiring further research and in-depth analysis, and subsequently commissioned 13 studies that made a substantial contribution in informing the proposed National Strategy brought forward by the Task Force. Overall, the findings of our research point to the need for a financial literacy strategy that can:
        - Reach all Canadians across the country;
        - Build on international experiences and lessons learned around the world;
        - Integrate a lifelong-learning approach;
        - Consider the particular circumstances and needs of Aboriginal Canadians, low-income Canadians, newcomers, seniors and young adults;
        - Consider all possible delivery channels to strengthen the financial literacy of Canadians;

        - Consider the implications of consumer financial behaviour; and
        - Be evaluated and adjusted over time to respond to the changing needs of Canadians.
    - Judging from our work over the past 18 months, we believe that the following areas could benefit from further study by the Government of Canada and interested researchers:
        - The link between financial literacy and basic literacy or numeracy;
        - Cultural differences in financial norms and behaviours;
        - Financial literacy within the broader concept of well-being measurement; and
        - The effect of financial literacy (and magnitude of that effect) on the efficiency of "nudging" strategies in addressing behavioural biases.

- **Recommendations 6: The Task Force recommends that employers incorporate financial literacy training into their current workplace training programs and communications. To that end, the Government of Canada, as well as provincial and territorial governments, should make workplace financial literacy programs eligible for tax assistance. Governments should demonstrate leadership as employers by developing workplace financial literacy programs for employees throughout their careers.**
    - In the Workplace: The workplace offers an effective channel for reaching a large number of Canadians from all walks of life. It is a relevant setting: it is primary source of income for most people and a place where they may be motivated to learn more about financial matters. By best estimates, employers in Canada already pay for the vast majority of the formal and informal training and education received by adults of working age. Typically, this training is directly related to job performance and skills. Increasingly, however, with encouragement from governments, employers have taken on a role in basic skills training, such as projects under way in Alberta to deliver literacy and numeracy education in the skilled trades. Canadian employers, often together with labour organizations, also offer employee benefits programs that may include counselling services, workplace learning sessions, retirement plans and retirement-preparation workshops. We urge employers and labour organizations to make a concerted effort to help address the financial literacy of their employees and members as part of their overall well-being. Both workers and employers stand to gain. Research demonstrates a link between financial well-being and a more productive, engaged workforce (Garman, T., "Workplace Productivity and Financial Literacy"). While many companies already provide financial education to employees, the evidence suggests that there is considerable room for improvement, as the following examples illustrate:
        - A Desjardins Financial Security survey conducted in 2006 found that nearly half of Canadians say they do not get enough help from their employer or labour organization with their retirement planning; (Desjardin Financial Security (2006) Perfect Garden: The Psychology of Retirement) and

- During our public consultations we heard that employers could be much more engaged in providing assistance to employees to manage their financial affairs, particularly in the area of planning for retirement. A general willingness was expressed by labour organizations to take on an increased role in workplace training in this respect.

- **Recommendations 13: The Task Force recommends that the Government of Canada provide relevant financial information and education services for recent newcomers to Canada through its orientation services (both abroad and in Canada), the Immigrant Settlement and Adaptation Program and the Language Instruction for Newcomers to Canada Program.**
  - Newcomers to Canada: The Government of Canada has many programs to help recent immigrants become integrated into the Canadian economy. Initiatives include orientation services (both abroad and in Canada), the Immigrant Settlement and Adaptation Program and the Language Instruction for Newcomers to Canada Program, all of which are sponsored by Citizenship and Immigration Canada and delivered in partnership with voluntary sector agencies. While offering a range of helpful information, these programs provide only minimal exposure to educational information about Canada's financial marketplace or financial literacy. The 2009 *Canadian Financial Capability Survey* suggests that, compared with people who are Canadian-born or long-time residents of Canada, newcomers are less likely to have access to basic financial services and are less confident in making financial decisions about products and services in Canada.

- **Recommendations 16: The Task Force recommends that the federal, provincial and territorial government helps Canadians maximize the financial benefit from government programs for which they are eligible by :**

  a) Ensuring simplicity and clarity in the way programs are written and structured;

  b) Simplifying application process; and

  c) Intensifying outreach initiatives to improve Canadians' awareness of these programs and their eligibility criteria.

  - Learning and Behaviour: Even when they have the right information and education, people sometimes make poor financial decisions, or in fact no decisions at all. People routinely say that they want to build savings, spend less and plan for retirement, but research shows that, for a variety of reasons, actions are often inconsistent with intentions. To better understand this disconnect, the Task Force has taken a close look at "behavioural economics," a field of study that looks at factors influencing financial behaviour to understand how people make decisions about their money. Under standard economic thinking, people use all the information available to them to make rational financial choices. The behavioural approach, in contrast, recognizes that individual financial decisions are shaped not only by people's knowledge but also by a range of psychological, social and institutional influences. For instance:

- The availability of too many options can be overwhelming and, in turn, bias decision making; and
- Choices that do not have immediate relevance (e.g., saving for retirement) may be delayed to a future time, despite their importance.

Recognizing the limits of a purely education-driven approach, financial literacy initiatives cannot be fully effective if they are developed and delivered in isolation from considerations that play an important role in framing the decision-making process of consumers. We believe that behavioural economics can be powerful tool to aid policy-makers and financial educators: it sheds light on consumer actions and helps to identify mechanisms and incentives that can encourage appropriate financial decision making. Indeed, these insights have already demonstrated their utility through practical "nudging" strategies such as auto-enrolment and auto-escalation features for workplace retirement savings plans.

Appendix B: Elements of the Financial Capability Framework

This appendix provides greater detail on main the elements of the conceptual framework guiding the financial capability analysis.

Knowledge and understanding

People require a basic body of knowledge and understanding, upon which they can draw when managing their financial affairs. This knowledge will be acquired in different ways: through experience, through education and training; and through passive receipt of information from different sources such as family and friends, the media and information materials produced by the financial sector. This basis knowledge and understanding will be supplemented from time to time by information gathered for specific purposes. The additional information will be assimilated and understood in the context of an individual's existing body of knowledge. Some of the information will be forgotten; what is not forgotten will add to the individual's knowledge and understanding. It follows, therefore, that the body of knowledge will trend to increase through a person's life. Parts of it, however, can become redundant or inaccurate as circumstances change. Six areas of knowledge and understanding have been identified: different types of money or payments; income generation; income disposal; concepts, such as risk, interest, inflation and probability; financial products and institutions, including source of information, advice and redress.

Skills

People also need the ability to apply their knowledge and understanding in order to manage their money and to make appropriate financial decisions. This calls for a range of specific skills, which need to be underpinned by basis levels of literacy and numeracy. Three set of skills have been identified: gathering financial information and record keeping, financial planning- saving, spending and budgeting and ability to evaluate information and to make comparisons between different products and courses of actions.

Confidence and attitudes

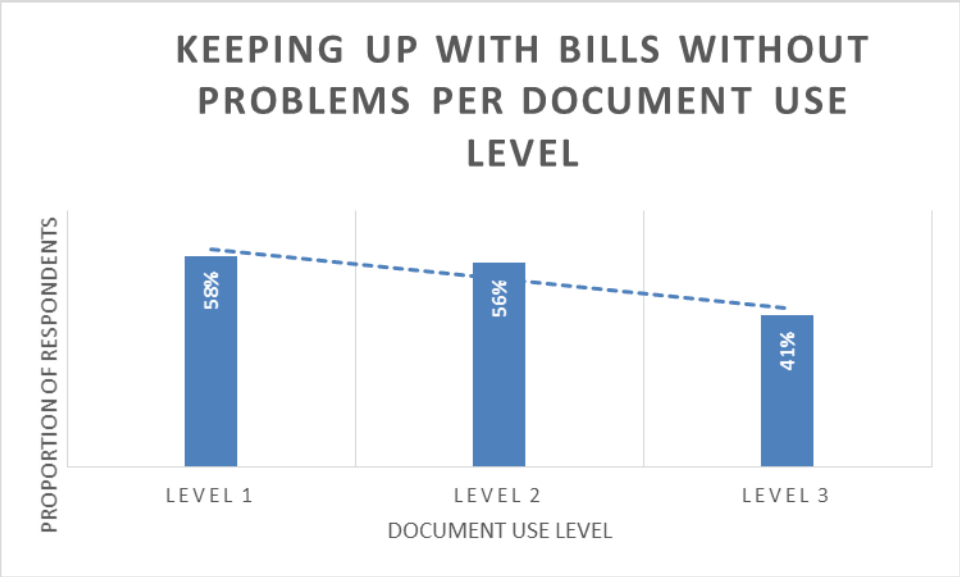
Knowledge and skill alone are not enough to ensure that people manage their financial affairs appropriately. They must be prepared to take whatever steps are necessary to apply their knowledge and to exercise their skills. This is largely a question of attitude. It is possible to identify three elements of a person's attitude towards financial capability. They must be: willing to invest the time and other resources required to apply their knowledge and to exercise their skill; able to gain access to information, advice and other resources; and confident enough to exercise their skills and to act on the results. The strength of these attitudes can be measured by assessing the extent to which the willingness, ability and confidence reflected in person's behaviour.

Appendix C: Making ends meet factors, by document use level

This appendix presents the results, by document use level, of five of the six factors underlying the making ends meeting financial capability domain, with the keeping up paying bills without problems being the first factor (shown in the body of the report).

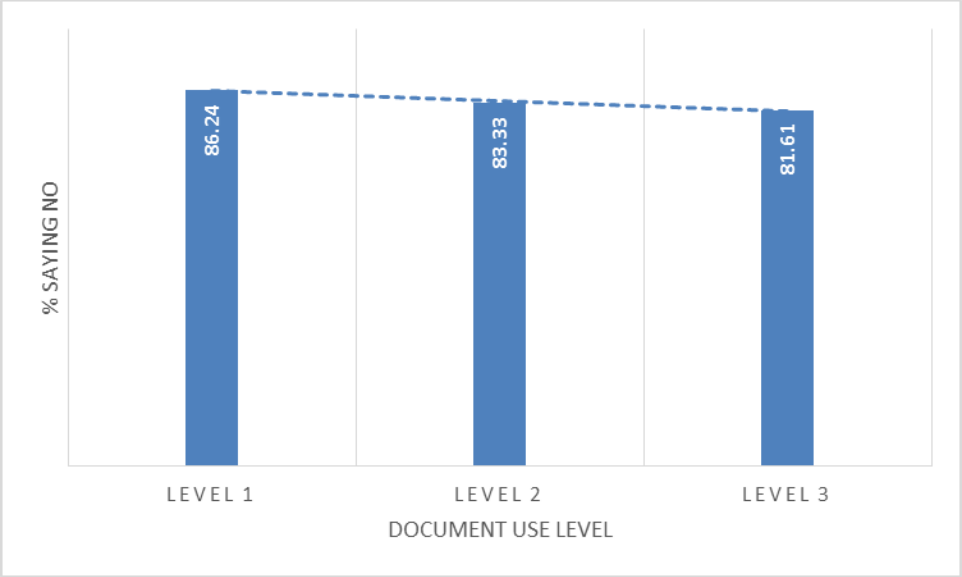
The factor that has demonstrated to be the most important to the ability to make ends meet is the self-assessment of the respondents in their own ability to keep up with their bills and other financial commitments. The respondents has the opportunity to give four answers: Keeping up with bills and commitments without any problems; keeping up with all bills and commitments, but it is sometimes a struggle; having real financial problems and falling behind with bills or credit commitments or don't have any bills or credit commitments. As demonstrated in Figure C-1, the higher their document use level less likely the respondent is in keeping up with his bills and commitment without any problems.

Figure C-1 Keeping up with bills without problems per document use level



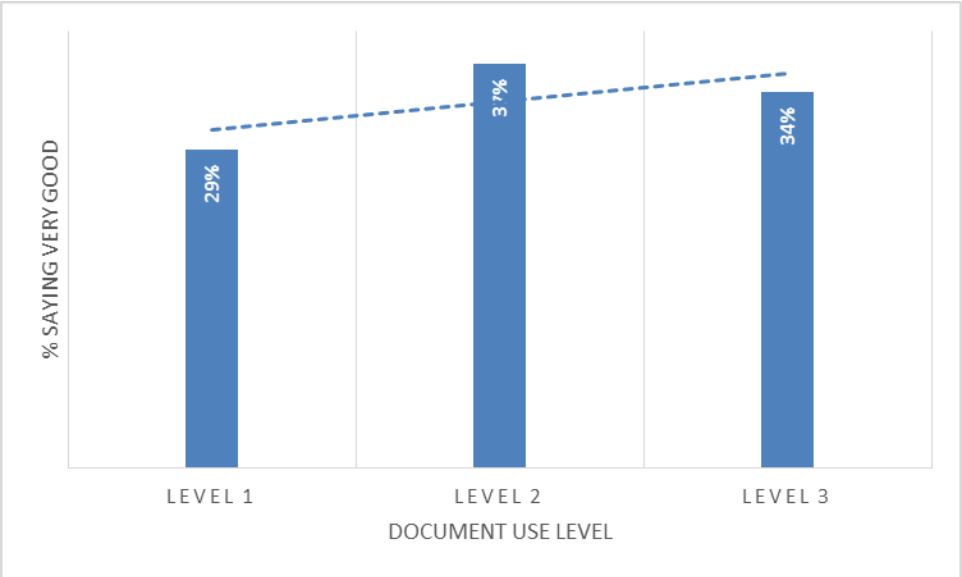
The second most important factor is the self-reported being behind two or more consecutive months in paying bills in the previous 12 months. Respondents had the option of saying yes or no as an answer. Figure C-2 indicates that the higher the document use ability, the less likely the respondents is to say no to that question (i.e., not be behind in paying bills).

Figure C-2 Not behind with bills, by document use level



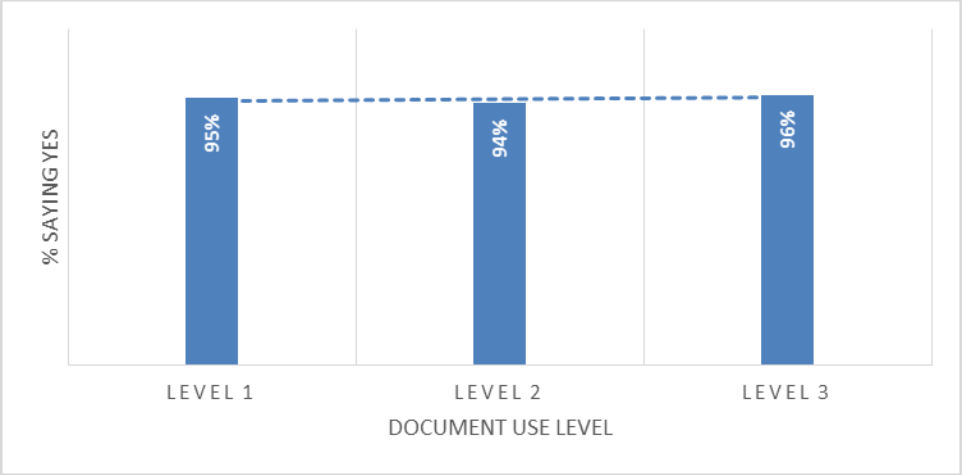
The third factor is self-assessed ability to make ends meet. The respondent had the option of answering very good, good, fairly good, or not very good. The trend related to the answers for this question is a bit less clear. That being said, as Figure C-3 indicates, the ability of making ends meet increases from document use level 1 to level 2.

Figure C-3 Very good at making ends meet, by document use level



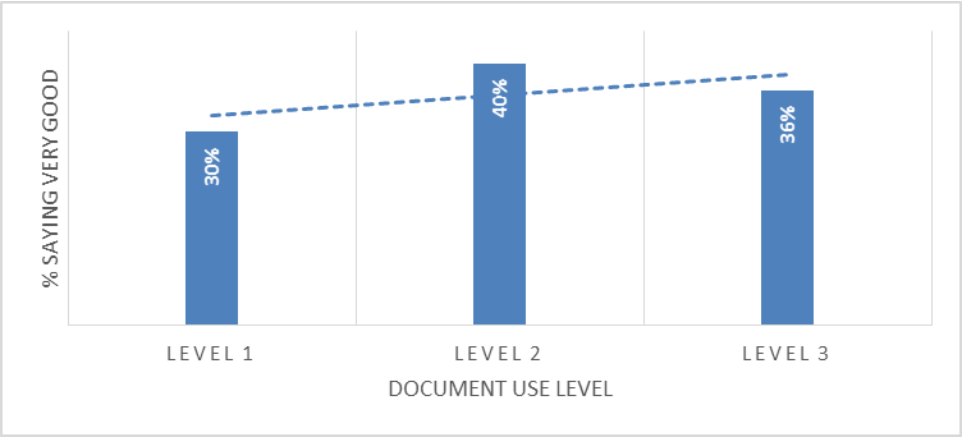
The fourth factor the self-reported being behind two or more consecutive months in making a loan payment in the previous 12 months. The respondent had the option of saying yes or no as an answer. Figure C-4 indicates that the level of document use does not seem to influence loan payment behaviour.

Figure C-4 Not behind on loan payment, by document use level



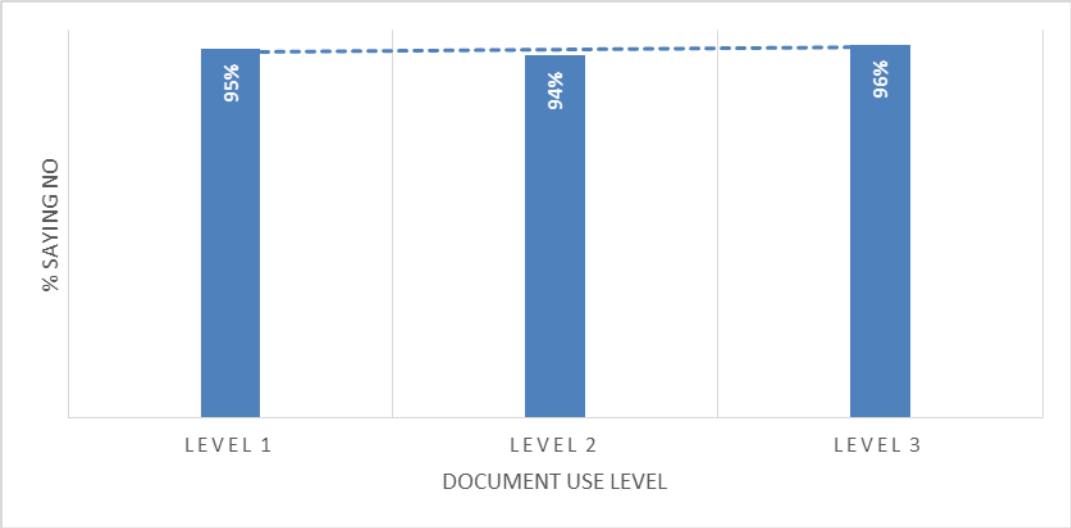
The fifth factor is the self-assessed ability to keep track of money. Respondents had the option of answering very good, good, fairly good, or not very good. Figure C-5 indicates that respondents who have are at level 1of document use skill were less likely to report being very good at keeping track of money compared to respondents at level 2.

Figure C-5 Very good at keeping track, by document use level



The sixth and final factor is the self-reported being behind two or more consecutive months in making rent or mortgage payments. Respondents had the option of saying yes or no as an answer. Figure C-6 indicates that the level of document use skill does not seem to influence rent and mortgage payment behaviour.

Figure C-6 Not behind paying rent, by document use level



Appendix D: Comparative sociodemographic regression

A first regression was conducted with the same socio-demographic variables used by McKay (2001) in order to conduct a basic quality check of the construct of the scores in the context of this research. One initial question to be addressed is whether or not the socio-demographic patterns of the UPSKILL participants in regard to financial capability are coherent with those of the Canadian population, as identified by McKay (2011). To address this question, Ordinary Least Square (OLS) regression was conducted on the UPSKILL sample with a core set of socio-demographics variables. Table D-1 presents the results of this analysis, which are the following (considering only statistically significant results as indicated by the asterisks in the table):

- Gender: McKay (2011) found that in the Canadian population that women typically demonstrate a greater ability to keep track of their finances than men. This was not confirmed for the research sample, as indicated in Table D-1, which shows that the keeping track of finances score does not have a statistical significant correlation.
- Age: UPSKILL participants in the research sample who are 35-45 years of age are more likely to be able to keep track of finances (by 5.25 points) and plan ahead (by 7.02 points) than those who are younger, which is similar to the result from the Canadian population.
- Parental status: As would be expected, and as McKay (2011) found for the Canadian population, parents in the research sample with children under 18 years of age are less likely (by 7.97 points) to be able to make ends meet than those without children under 18 years of age.
- Income: McKay (2011) observed a positive correlation between income and financial capability in the Canadian population. Similarly in our research sample, those with household income of $30,000 to $50,000 are more likely to be able to make ends meet (by 4.54 points) and plan ahead (by 6.86 points) than those with less than $30,000 in income. Those in households with income greater than $50,000 are also more able to plan ahead than those in households with incomes under $30,000.
- Education: No patterns of significance were observed in our sample in regard to financial capability. Correlation between financial capability domains and education were, however, detected in the Canadian population. This may relate in part to the smaller sample size and different educational categories used.

Overall, these results suggest that the correlation between the different variables and the three domains of financial capability are coherent with the one of the Canadian population as per McKay (2011).

Table D-1 Regression results for each financial capability factor, basic socio-demographic model

Statistic or Variable	Categories	Making ends meet		Keeping track of finances		Planning ahead	
R-squared adjusted		0.04		0.02		0.11	
R-squared		0.06		0.04		0.13	
Average score		73.30		55.71		49.31	
Socio-demographic variables							
Intercept		72.36	***	50.24	***	41.78	***
Gender	Female (*vs male*)	0.02		2.95		0.52	
	35 years old or younger	---		---		---	
Age	35 years old and older	2.89		4.39	*	7.02	***
	45 years old and older	-0.47		1.74		1.26	
Parental status	Parent with children under 18 years (*vs not*)	-7.97	***	-2.37		-1.75	
	Less than $30,000	---		---		---	
Household income per year	$30,000 and higher	4.54	*	0.58		6.86	***
	Greater than $50,000	3.85		1.42		4.74	*
	High school diploma or less	---		---		---	
Education attainment level	Post-secondary education	1.01		-0.15		1.40	
	University degree only	0.26		2.72		-0.90	

Source: Calculations based on results from UPSKILL employee surveys, administered 9 months post-program.

Note: Statistical significance levels are indicated as: * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Appendix E: Sequential analysis

A series of sequential regressions have been conducted in order to further explore the importance of particular factors in influencing the three financial capability scores – making ends meet, keeping track of finances and planning ahead scores. A more detailed presentation of the construct of each score is provided in Appendix F.

Sequential analysis per financial capability score

A set of four sequential regressions have been conducted. The first regression includes only sociodemographic variables (Model 1). The second regression adds skills variables to the socio-demographic model (Model 2). The third regression includes sociodemographic variables but replaces the skills measures with psychosocial variables (Model 3). The fourth model is the one used in the report, which includes socio-demographic, skills and psychosocial variables (Model 4). Parameter estimates for each model are presented side-by-side to facilitate comparisons. For clarity, only the results of these four primary regression models are presented. A series of regressions was conducted within each category of model (sociodemographic, skills, and psychosocial) to determine the most robust set of measures. These are presented below in Tables E-1 to E-3 for each financial capability measure, respectively, in the following order: making ends meet, keeping track and planning ahead.

Sequential analysis on Making ends meet scores

As Table E-1 illustrates, the parameter estimates are fairly stable across the different models. The most apparent differences are observed when psychosocial variables are added to the model. Their inclusion eliminates the observed correlation between immigrant status and one's ability to make ends meet (Model 3 versus Model 1). At the same time, psychosocial variables alter the observed relationship between skill measures and this indicator of financial capability (Model 4 versus Model 2). Parameter estimates on document use and numeracy scores are particularly sensitive to the addition of psychosocial and well-being variables. After their inclusion, the negative correlation with document use scores is no longer apparent and a positive correlation with numeracy is affirmed. In contrast, parameter estimates on psychosocial variables do not appear to be sensitive to the inclusion of other skills variables (Model 4 versus Model 3). The relationship between various indicators of psychological capital, social capital, and wellbeing are robust to the inclusion of skill measures.

Table E-1 Linear regression analysis on Making ends meet scores – sequential

Statistics or Variable	Categories	Socio-demographic variables only		Socio-demographic and skills variables		Socio-demographic and psychosocial variables		Socio-demographic, skills and psychosocial variables	
		Model 1		Model 2		Model 3		Model 4	
R-squared adjusted		0.08		0.10		0.22		0.23	
R-square		0.10		0.16		0.26		0.29	
Knowledge and Understanding : Life Course Demographics									
Intercept		73.66	***	80.43	***	65.52	***	79.08	***
Gender	Female	-0.43		1.00		-0.13		0.87	
Immigration status	Immigrants	-8.33	***	-7.31	***	-3.00		-3.49	
Parental status	Parent with children below 18	-5.95	**	-5.57	**	-5.59	**	-5.92	**
Age	35 years old or younger								
	35 years old or older	3.84		4.89	*	5.86	**	6.75	**
	45 years old or older	-0.59		-0.59		-2.31		-2.93	
Household income	Below $30,000 per year								
	$30,000 and higher	4.16		3.40		2.25		1.53	
	Above $50,000	3.51		3.29		1.95		2.35	
Education	High school diploma or less								
	Post-secondary education diploma or degree	2.36		0.13		1.19		-0.06	
	University degree only	2.24		1.29		0.04		-0.53	

Skills: Literacy and Essential Skills					
Essential skills - Document use	Level 1				
	Level 2 and above	-5.98	**	-4.17	
	Level 3	-3.48		-2.13	
Essential skills - Numeracy	Level 1				
	Level 2 and above	-0.24	***	-1.91	
	Level 3	3.48		2.82	***
Workplace performance - Oral communication	Far below expectation				
	Below, Met or Surpass expectations	-10.39		-12.71	
	Met or Surpass expectations	3.41		6.59	
	Surpass expectations	-0.08		-1.29	
Workplace performance - Teamwork	Far below expectation				
	Below, Met or Surpass expectations	-1.90		-3.90	
	Met or Surpass expectations	-3.26		-2.14	
	Surpass expectations	2.28		-0.71	
Workplace performance - Thinking Skills	Far below expectation				
	Below, Met or Surpass expectations	1.53		0.60	
	Met or Surpass expectations	0.74		1.03	
	Surpass expectations	3.35		0.92	

Confidence and Attitudes : Psychosocial, Well-Being									
Psychosocial indicators	Higher Self-efficacy					4.45	**	4.14	*
	Higher motivation and engagement behaviour					6.75	***	6.70	***
	Higher resilience					7.04	***	6.69	***
Well-being, Stress	Larger social network					-0.74		-1.16	
	Higher life stress					-4.51	**	-4.47	**
	Higher life satisfaction					5.63	***	5.86	***
UPSKILL training	Program Group (ref. control group)	-5.18	**	-5.67	***	-5.40	***	-5.84	***

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Sequential analysis – Keeping track scores

A similar pattern of results are observed from the sequential regressions involving scores on the domain of keeping track. The inclusion of psychosocial factors has a large effect on the parameter estimates for key demographics, namely eliminating the correlation between keeping track and immigrant status (Model 3 versus Model 1) and skill measures such as oral communication (Model 4 versus Model 2). Similar to the results for making ends meet, the correlation between keeping track and psychosocial variables is robust to the inclusion of skills variables (Model 4 versus Model 3).

Interestingly, when skills are added to the base regression (Model 2 versus Model 1), the correlation between gender and keeping track scores is larger, though no longer significant when psychosocial variables are added (Model 4 versus Model 2). Also noteworthy, is the increasing importance of age in explaining keeping track scores, as the regression becomes more complex.

Table E-2 Linear regression analysis on Keeping track scores – sequential

Statistics or Variable	Categories	Socio-demographic variables only Model 1	Socio-demographic and skills variables Model 2	Socio-demographic and psychosocial variables Model 3	Socio-demographic, skills and psychosocial variables Model 4
R-squared adjusted		0.01	0.01	0.14	0.14
R-square		0.04	0.08	0.18	0.21

Statistics or Variable	Categories	Socio-demographic variables only Model 1		Socio-demographic and skills variables Model 2		Socio-demographic and psychosocial variables Model 3		Socio-demographic, skills and psychosocial variables Model 4	
Knowledge and Understanding : Life Course Demographics									
Intercept		50.84	***	64.25	***	41.10	***	58.33	***
Gender	Female	2.88		3.69	*	2.45		2.90	
Immigration status	Immigrants	-3.95	**	-4.17	*	-0.95		-1.76	
Parental status	Parent with children below 18	-1.33		-1.66		-1.08		-1.92	
Age	35 years old or younger								
	35 years old or older	4.71	*	4.93	**	5.88	**	6.01	**
	45 years old or older	1.96		1.41		0.72		0.08	
Household income	Below $30,000 per year								
	$30,000 and higher	0.51		1.00		-0.68		-0.55	
	Above $50,000	1.14		0.81		0.40		0.57	
Education	High school diploma or less								
	Post-secondary education diploma or degree	0.38		0.15		-0.55		-0.21	
	University degree only	3.73		3.05		1.95		1.48	
Skills: Literacy and Essential Skills									
Essential skills - Document use	Level 1								
	Level 2 and above			-3.12				-1.72	
	Level 3			-1.71				-0.14	
Essential skills - Numeracy	Level 1								
	Level 2 and above			-1.39				-2.74	
	Level 3			1.05				0.46	
Workplace performance - Oral communication	Far below expectation								
	Below, Met or Surpass expectations			-4.24				-3.72	
	Met or Surpass expectations			-8.50				-7.02	
	Surpass expectations			6.26	*			4.82	

Statistics or Variable	Categories	Socio-demographic variables only Model 1	Socio-demographic and skills variables Model 2	Socio-demographic and psychosocial variables Model 3	Socio-demographic, skills and psychosocial variables Model 4
Workplace performance - Teamwork	Far below expectation				
	Below, Met or Surpass expectations		-9.41		-11.02
	Met or Surpass expectations		4.11		4.27
	Surpass expectations		2.81		0.56
Workplace performance - Thinking Skills	Far below expectation				
	Below, Met or Surpass expectations		-4.09		-4.59
	Met or Surpass expectations		1.52		2.51
	Surpass expectations		3.15		0.95
Confidence and Attitudes : Psychosocial, Well-Being					
Psychosocial indicators	Higher Self-efficacy			4.95 **	5.38 **
	Higher motivation and engagement behaviour			7.90 ***	7.82 ***
	Higher resilience			5.14 **	5.01 **
Well-being, Stress	Larger social network			-1.35	-0.50
	Higher life stress			-1.96	-1.70
	Higher life satisfaction			5.94 ***	5.76 ***
UPSKILL training	Program Group (ref. control group)	-1.18	-0.83	-1.93	-1.52

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Sequential analysis – Planning ahead

A similar pattern of results are observed from the sequential regressions involving scores on the domain of planning ahead as those presented above. The inclusion of psychosocial variables eliminates the significance of several key demographics and skill measures. However, there are three noteworthy differences. First, a strong positive relationship between the indicator of one's thinking skills and one's ability to plan ahead is affirmed in each regression – the inclusion of psychosocial variables increases the magnitude of this relationship (Model 4 versus Model 2). Second, the mix of psychosocial variables that are related to one's ability to plan ahead appear different. Only social networks appear to have a significant correlation with one's ability to plan ahead, while indicators of psychological capital and wellbeing are no longer significant. Finally, in addition to age, one's income appears to have a strong relationship with one's ability to plan ahead, irrespective of the inclusion of skills or psychosocial variables.

Table E-3 Linear regression analysis on Planning ahead – sequential

Statistics or Variable	Categories	Socio-demographic variables only Model 1		Socio-demographic and skills variables Model 2		Socio-demographic and social variables Model 3		Socio-demographic, skills and social variables Model 4	
R-squared adjusted		0.11		0.14		0.13		0.15	
R-square		0.14		0.20		0.17		0.22	
Knowledge and Understanding : Life Course Demographics									
Intercept		41.73	***	28.02	***	37.79	***	27.84	***
Gender	Female	0.55		1.73	*	0.36		1.23	
Immigration status	Immigrants	-3.95	**	-0.18	*	-1.41		1.06	
Parental status	Parent with children below 18	-0.64		0.29		-0.97		-0.38	
Age	35 years old or younger								
	35 years old or older	7.15	***	7.65	***	8.12	***	8.16	***
	45 years old or older	1.71		2.71		1.79		2.57	
Household income	Below $30,000 per year								
	$30,000 and higher	7.00	**	6.78	**	4.96	*	5.01	*
	Above $50,000	4.32	*	2.41		4.55	*	2.85	
Education	High school diploma or less								
	Post-secondary education diploma or degree	1.86		-0.21		0.73		-0.87	
	University degree only	0.23		-0.71		0.11		-0.62	
Skills: Literacy and Essential Skills									
Essential skills - Document use	Level 1								
	Level 2 and above			-4.45	*			-3.33	
	Level 3			3.46				3.37	
Essential skills - Numeracy	Level 1								
	Level 2 and above			5.85	**			4.85	
	Level 3			1.19				0.71	
Workplace performance - Oral communication	Far below expectation								
	Below, Met or Surpass expectations			6.92				7.57	
	Met or Surpass expectations			-7.81				-9.40	
	Surpass expectations			2.82	*			3.77	

Statistics or Variable	Categories	Socio-demographic variables only Model 1	Socio-demographic and skills variables Model 2	Socio-demographic and social variables Model 3	Socio-demographic, skills and social variables Model 4
Workplace performance - Teamwork	Far below expectation				
	Below, Met or Surpass expectations		10.80		9.38
	Met or Surpass expectations		-6.21		-5.40
	Surpass expectations		-1.58		-2.60
Workplace performance - Thinking Skills	Far below expectation				
	Below, Met or Surpass expectations		2.20		1.91
	Met or Surpass expectations		0.70		1.19
	Surpass expectations		7.65 **		7.58 **
Confidence and Attitudes : Psychosocial, Well-Being					
Psychosocial indicators	Higher Self-efficacy			-0.19	-0.22
	Higher motivation and engagement behaviour			0.24	0.10
	Higher resilience			0.39	-0.71
	Larger social network			5.08 **	4.92 **
Well-being, Stress	Higher life stress			2.56	2.38
	Higher life satisfaction			1.96	1.89
UPSKILL training	Program Group (ref. control group)	1.01	0.75	1.12	0.87

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Comparative analysis per random assignment group

Table E-4 presents results of the full regression including socio-demographic, skills and psychosocial variables (Model 4) separately for program and control groups. The first column presents regression results using 223 control group participants only (Model A). The second column presents results for 301 program group participants only (Model B). Finally, the third column presents results from the full regression with all 524 participants (Model C).

The significance levels on parameter estimates differ substantially between models due to the small sample sizes of the independent program and control group regressions. However, the pattern of results in terms of the sign and magnitude of parameter estimates are largely as expected, given that the full regression controls for treatment group assignment i.e. the pooled regression includes a variable for program or control group.

Table E-4 Linear regression analysis per random assignment group on Making ends meet score

Statistics or Variable	Categories	Control group participants only Model A		Program group participants only Model B		Control and program group participants Model C	
R-squared adjusted		0.14		0.14		0.29	
R-square		0.32		0.27		0.23	
Knowledge and Understanding : Life Course Demographics, Social Capital							
Intercept		98.68	***	60.97	***	81.96	***
Gender	Female	-1.14		4.12		0.84	
Immigration status	Immigrants	-9.46	**	-0.08		-3.50	
Parental status	Parent with children below 18	-3.97		-6.26	*	-5.94	**
Age	35 years old or younger						
	35 years old or older	3.69		8.89	**	6.76	**
	45 years old or older	-2.04		-2.33		-2.96	
Household income	Below $30,000 per year						
	$30,000 and higher	-2.57		5.70		1.51	
	Above $50,000	5.63		-3.51		2.40	
Education	High school diploma or less						
	Post-secondary education diploma or degree	0.50		0.55		-0.09	
	University degree only	-2.94		1.79		-0.56	
Skills: Literacy and Essential Skills							
Essential skills - Document use	Level 1						
	Level 2 and above	-3.28		-7.49	*	-4.23	
	Level 3	-4.60		0.00		-2.14	
Essential skills - Numeracy	Level 1						
	Level 2 and above	-2.63		-2.52	***	-1.88	
	Level 3	0.12		5.00		2.83	***
Workplace performance - Oral communication	Far below expectation						
	Below, Met or Surpass expectations	-21.48	*	9.71		-12.71	
	Met or Surpass expectations	11.27		-7.71		6.54	
	Surpass expectations	-1.52		-1.96		-1.30	

Statistics or Variable	Categories	Control group participants only Model A		Program group participants only Model B		Control and program group participants Model C	
Workplace performance - Teamwork	Far below expectation						
	Below, Met or Surpass expectations	-18.33		12.12		-3.90	
	Met or Surpass expectations	8.27		-16.52		-2.07	
	Surpass expectations	-1.21		0.25		-0.77	
Workplace performance - Thinking Skills	Far below expectation						
	Below, Met or Surpass expectations	6.37		-7.26		0.61	
	Met or Surpass expectations	-7.32		10.27	**	1.01	
	Surpass expectations	4.01		-0.81		0.92	
Confidence and Attitudes : Psychosocial, Well-Being							
Psychosocial indicators	Higher Self-efficacy	2.04		6.39	**	4.16	*
	Higher motivation and engagement behaviour	6.23		6.89	**	6.69	***
	Higher resilience	6.63	**	5.98	**	6.69	***
Well-being, Stress	Larger social network	-0.91		-1.92		-1.14	
	Higher life stress	-1.96		-6.66	**	-4.46	**
	Higher life satisfaction	4.94		5.83	**	5.86	***
UPSKILL training	Program Group (ref. control group)					-5.84	***

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Table E-5 Linear regression analysis per random assignment group on Keeping track score

Statistics or Variable	Categories	Control group participants only Model A		Program group participants only Model B		Control and program group participants Model C	
R-squared adjusted		0.01		0.14		0.14	
R-square		0.04		0.27		0.21	
Knowledge and Understanding : Life Course Demographics, Social Capital							
Intercept		77.19	***	43.74	***	59.26	***
Gender	Female	-0.89		5.61	**	2.65	
Immigration status	Immigrants	-7.05	*	1.03		-1.77	

Statistics or Variable	Categories	Control group participants only Model A		Program group participants only Model B		Control and program group participants Model C	
Parental status	Parent with children below 18	-3.31		-1.11		-1.93	
Age	35 years old or younger						
	35 years old or older	4.97		7.66	**	6.03	**
	45 years old or older	1.26		-1.40		-0.07	
Household income	Below $30,000 per year						
	$30,000 and higher	-0.63		-0.05		-0.70	
	Above $50,000	-1.85		-0.53		0.78	
Education	High school diploma or less						
	Post-secondary education diploma or degree	1.34		-0.85		-0.40	
	University degree only	-2.58		3.78		1.16	
Skills: Literacy and Essential Skills							
Essential skills - Document use	Level 1						
	Level 2 and above	-2.84		-4.82		-2.11	
	Level 3	0.74		-2.19		-0.31	
Essential skills - Numeracy	Level 1						
	Level 2 and above	1.32		-6.25		-2.56	
	Level 3	-2.05		2.85		0.56	***
Workplace performance - Oral communication	Far below expectation						
	Below, Met or Surpass expectations	-2.30		13.75		-3.79	
	Met or Surpass expectations	-15.47		-16.91		-7.41	
	Surpass expectations	8.94		3.14		4.86	
Workplace performance - Teamwork	Far below expectation						
	Below, Met or Surpass expectations	-28.12	**	1.41		-10.89	
	Met or Surpass expectations	10.85		-2.36		4.65	
	Surpass expectations	3.70		0.01		0.19	
Workplace performance - Thinking Skills	Far below expectation						
	Below, Met or Surpass expectations	-2.62		-7.68		-4.53	
	Met or Surpass expectations	-1.94		6.85		2.36	
	Surpass expectations	4.13		0.24		0.91	

Statistics or Variable	Categories	Control group participants only Model A		Program group participants only Model B		Control and program group participants Model C	
Confidence and Attitudes : Psychosocial, Well-Being							
Psychosocial indicators	Higher Self-efficacy	5.71	*	4.48		5.59	**
	Higher motivation and engagement behaviour	10.42	***	7.51	***	7.68	***
	Higher resilience	5.34		4.44	*	4.98	**
Well-being, Stress	Larger social network	-0.67		-1.01		-0.52	
	Higher life stress	0.41		-2.43		-1.68	
	Higher life satisfaction	0.77		8.17	***	5.70	***
UPSKILL training	Program Group (ref. control group)					-1.48	

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Table E-6 Linear regression analysis per random assignment group on Keeping track score

Statistics or Variable	Categories	Control group participants only Model 1		Program group participants only Model 2		Control and program group participants Model 3	
R-squared adjusted		0.16		0.18		0.15	
R-square		0.33		0.30		0.23	
Knowledge and Understanding : Life Course Demographics, Social Capital							
Intercept		10.61		44.38	***	27.18	***
Gender	Female	-1.47		3.57		1.53	
Immigration status	Immigrants	4.30		-4.09		1.36	
Parental status	Parent with children below 18	3.54		-2.41		-0.03	
Age	35 years old or younger						
	35 years old or older	7.62	*	7.54	**	8.13	***
	45 years old or older	7.50	*	0.26		2.86	
Household income	Below $30,000 per year						
	$30,000 and higher	11.11	**	2.93		5.14	**
	Above $50,000	-1.72		4.33		2.28	
Education	High school diploma or less						
	Post-secondary education diploma or degree	-3.36		-1.48		-0.55	
	University degree only	-1.99		2.68		-0.55	

Statistics or Variable	Categories	Control group participants only Model 1		Program group participants only Model 2		Control and program group participants Model 3	
Skills: Literacy and Essential Skills							
Essential skills - Document use	Level 1						
	Level 2 and above	-3.54		-3.33		-2.88	
	Level 3	12.54	**	-4.33		3.34	
Essential skills - Numeracy	Level 1						
	Level 2 and above	3.92		7.13	*	4.63	
	Level 3	-0.62		1.27		0.51	
Workplace performance - Oral communication	Far below expectation						
	Below, Met or Surpass expectations	15.17		10.13		7.22	
	Met or Surpass expectations	-6.60		-17.91		-9.13	
	Surpass expectations	-0.87		3.94		3.89	
Workplace performance - Teamwork	Far below expectation						
	Below, Met or Surpass expectations	5.25		8.06		9.73	
	Met or Surpass expectations	-5.90		-2.32		-6.29	
	Surpass expectations	1.35		-4.67		-1.99	
Workplace performance - Thinking Skills	Far below expectation						
	Below, Met or Surpass expectations	6.42		-0.53		1.84	
	Met or Surpass expectations	-1.62		3.94		1.38	
	Surpass expectations	13.91	**	2.86		7.50	**
Confidence and Attitudes : Psychosocial, Well-Being							
Psychosocial indicators	Higher Self-efficacy	-1.98		-0.73		-0.43	
	Higher motivation and engagement behaviour	1.45		-3.02		0.08	
	Higher resilience	0.26		-1.22		-0.78	
	Larger social network	5.68		5.35	*	4.54	**
Well-being, Stress	Higher life stress	5.16		0.75		2.22	
	Higher life satisfaction	3.39		2.58		1.94	
UPSKILL training	Program Group (ref. control group)					0.97	

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Appendix F: Financial capability scores

Three financial literacy scores have been used in this research and developed based on McKay (2011). Prof. McKay developed five areas or "domains" of financial capability – making ends meet, keeping track, planning ahead, choosing products and staying informed – and generates five overall scores that capture Canadians' relative skills in these domains.

As mentioned McKay's scale includes five domains which includes 8-14 items per domains which create a 49-item scale. As adding a 49-item scale was not possible in the current research context, a group of researchers at the Financial Consumer Agency of Canada (FCAC) re-conducted a scale analysis which consisted of prioritizing the financial capability domains, identifying the ones that should be more relevant to the UPSKILL population and re-conducting a factor analysis.

The three financial capability domains that have been identified to be more relevant were making ends meet, keeping track and planning ahead. The scale per domains were reduced to a 5 to 9-item scales.

The scores were calculated using the same approach used from Prof. McKay to allow a benchmarking with the Canadian population scores. The same variable recoding, score calculation and score conversion to a 0-100 score approaches were used in order to create comparable scores (see Annex 4 – Further Technical Details -McKay (2011)). The factor score is a linear combination (a weighted sum) of the observed variables, e.g. F1=L1X1+L2X2+L3X3+…LNXN. F_i – factor, L_i, M_i – loadings, X_i – the N variables, normalized. The "weights" (L_i, M_i) for the variables (X_i) are based on how much they "load" on the factor (their correlation with the latent factor).

As mentioned a factor analysis was done to reduce the scale, in consequence new "load" were created for the reduced scale. As the loading differences were minor between McKay's loading and the reduced scales loading conducted from the FCAC's research team as well as the difference in the score calculation, McKay's loading was used to calculate the scores as it simplifies comparability and documentation.

Find in Table F-1 the loading comparison between the two approaches for the planning ahead score as an example. In Table F-2, find the comparison between the regression analysis using the two calculation for the planning ahead scores. Similar analyses have been conducted with making end meets and keeping track scores.

Table F-1 Planning ahead – Comparison of factor loading per scale item

	RP_Q01	RP_Q02	FC_Q07	RP_Q09	RP_Q08	FC_Q09	FM_Q02J	ME_Q01	FC_Q10	Mean score
FCAC	0.840	-0.790	-0.555	0.461	0.404	0.387	-0.358	0.345	0.318	62.09
McKay	0.831	-0.778	-0.556	0.46	0.409	0.396	-0.332	0.348	0.325	60.80

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Table F-2 Linear regression analysis on Planning ahead scores – Score approach comparison

Statistics or Variable	Categories	Socio-demographic, skills and social variables FCAC		Socio-demographic, skills and social variables McKay	
R-squared adjusted		0.1526		0.15	
R-square		0.2255		0.22	
Knowledge and Understanding : Life Course Demographics, Social Capital					
Intercept		27.59	***	27.84	***
Gender	Female	1.22		1.23	
Immigration status	Immigrants	1.13		1.06	
Parental status	Parent with children below 18	-0.43		-0.38	
Age	35 years old or younger				
	35 years old or older	8.21	***	8.16	***
	45 years old or older	2.61		2.57	
Household income	Below $30,000 per year				
	$30,000 and higher	5.11	*	5.01	*
	Above $50,000	2.89		2.85	
Education	High school diploma or less				
	Post-secondary education diploma or degree	-0.84		-0.87	
	University degree only	-0.64		-0.62	
Skills: Literacy and Essential Skills					
Essential skills - Document use	Level 1				
	Level 2 and above	-3.37		-3.33	
	Level 3	3.43		3.37	
Essential skills - Numeracy	Level 1				
	Level 2 and above	4.88		4.85	
	Level 3	0.71		0.71	
Workplace performance - Oral communication	Far below expectation				
	Below, Met or Surpass expectations	7.76		7.57	
	Met or Surpass expectations	-9.55		-9.40	
	Surpass expectations	3.80		3.77	
Workplace performance - Teamwork	Far below expectation				
	Below, Met or Surpass expectations	9.60		9.38	
	Met or Surpass expectations	-5.51		-5.40	
	Surpass expectations	-2.62		-2.60	
Workplace performance - Thinking Skills	Far below expectation				
	Below, Met or Surpass expectations	1.92		1.91	
	Met or Surpass expectations	1.17		1.19	
	Surpass expectations	7.67	**	7.58	**

Statistics or Variable	Categories	Socio-demographic, skills and social variables FCAC		Socio-demographic, skills and social variables McKay	
Confidence and Attitudes : Psychosocial, Well-Being					
Psychosocial indicators	Higher Self-efficacy	-0.19		-0.22	
	Higher motivation and engagement behaviour	0.11		0.10	
	Higher resilience	-0.67		-0.71	
	Larger social network	4.99	**	4.92	**
Well-being, Stress	Higher life stress	2.37		2.38	
	Higher life satisfaction	1.90		1.89	
UPSKILL training	Program Group (ref. control group)	0.88		0.87	

Sources: Calculations from UPSKILL employee follow-up survey, administered 9-months post-program.

Score distribution

Distributions of financial capability scores have been prepared in order to conduct a basic quality check of the score calculations.

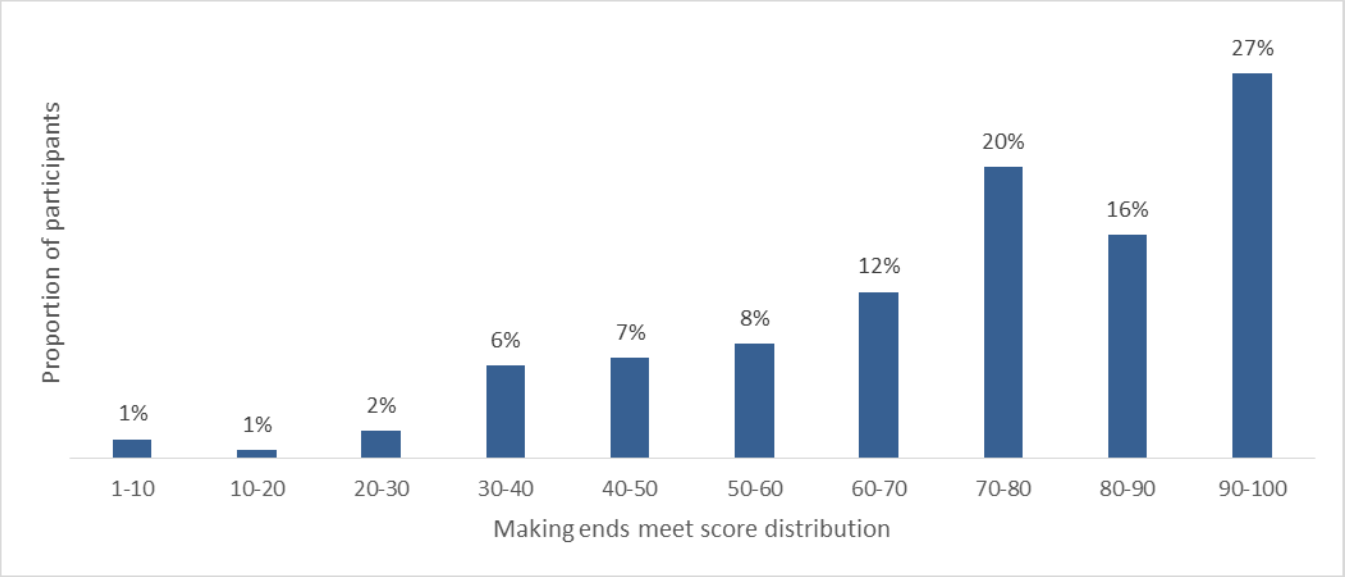
In this section, the distribution and mean results for the UPSKILL sample are presented in each the three financial capability domains and benchmarked against the scores for the Canadian population, as derived by McKay (2011). Results confirm that, as expected, the sample has somewhat lower financial capability on each domain, given that UPSKILL was actively targeting lower skilled working adults.

Making ends meet

A six-item[36] scale was used in this project to measure the ability to make ends meet. The distribution of the scores of our sample is slightly different from the distribution of the Canadian population. The average score is 73.3 points which is 8.6 points lower than the Canadian average (81.9 points).

[36] Two questions were dropped after more in-depth factor analysis by the Financial Consumer Agency of Canada: "Total number of bank accounts" and "Please tell me if you agree or disagree with the following statement: I enjoy dealing with financial matters."

Figure F-1 Making ends meet – score distribution

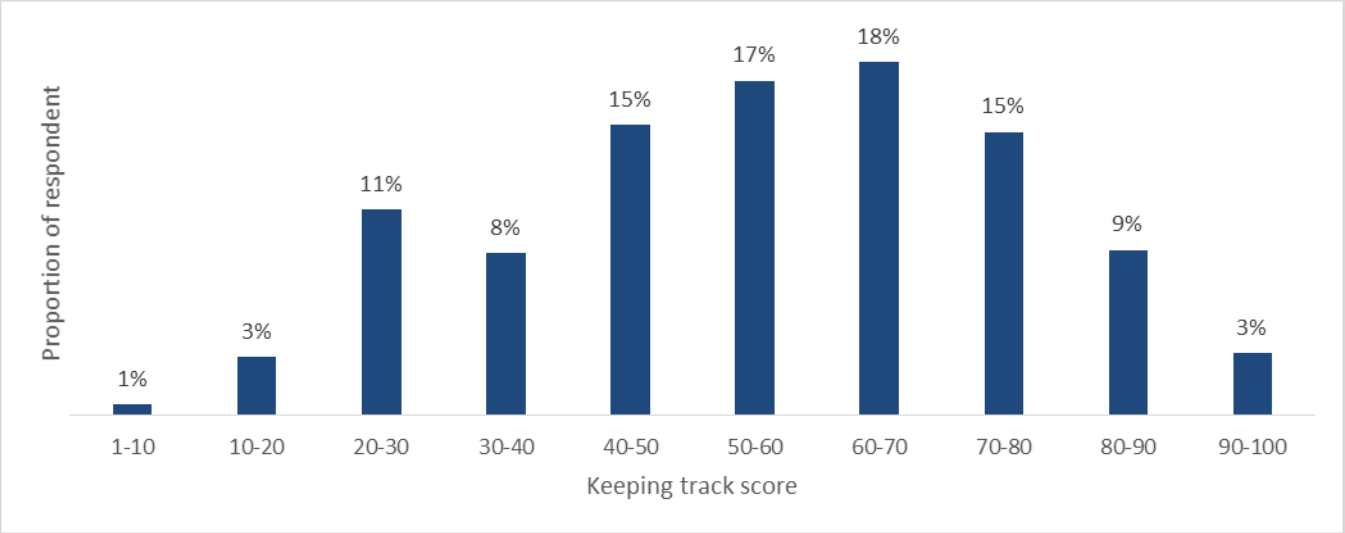


Keeping track of finances

A 5-item[37] scale was used to measure the ability of respondents to keep track of finances. The distribution of the scores for our sample is close to a normal distribution which makes it different from that of the Canadian population which is bimodal. The average score is 55.7 which is slightly lower than the score for the Canadian population: 65.6 points.

[37] Three questions were dropped after more in-depth factor analysis by the Financial Consumer Agency of Canada research team: "Total number of bank accounts", "How do you typically check the balance for your account or accounts?" and "Please tell me if you agree or disagree with the following statement: I enjoy dealing with financial matters."

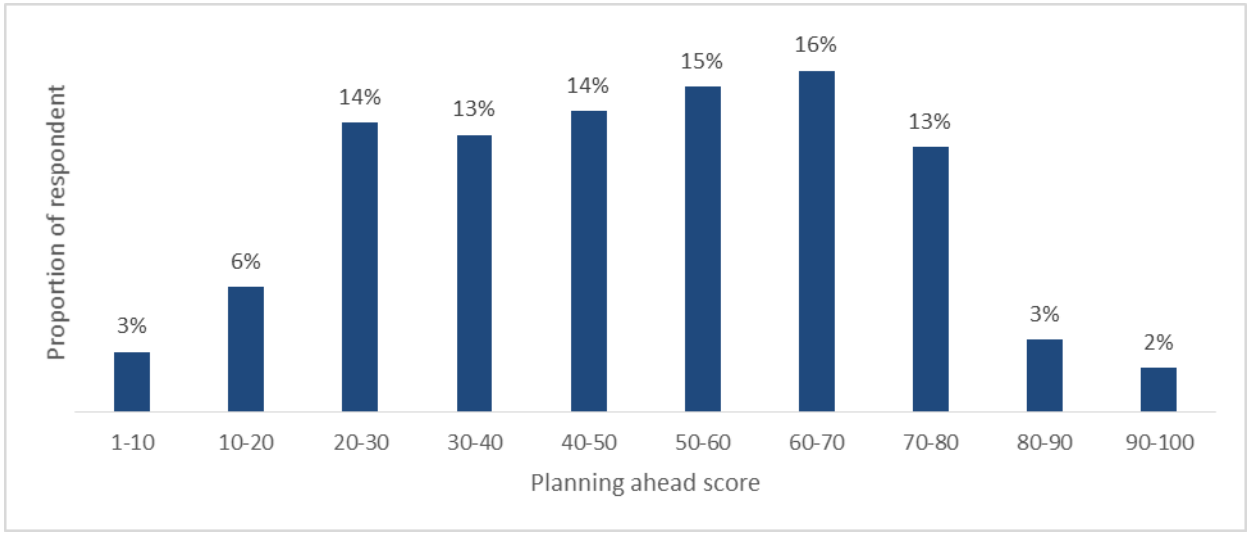
Figure F-2 Keeping track – distribution of scores



Planning ahead

A 9-item[38] scale was used to measure the ability to plan ahead. As demonstrated in Table 3, the average score of this group is 49.3 and the distribution is close to a normal distribution. This is slightly different from that of Canadian population where the average score is 60.8.

Figure F-3 Planning ahead – distribution of scores



38 One question was dropped after more in-depth factor analysis by the Financial Consumer Agency of Canada research team: "And if the expenditure were $5000, how would you pay for this expense?"

Appendix G: Significant and non-significant predictors' variables

In order to facilitate the communication of the analytical results per financial capability domain, the following summary table presents the significant and non-significant predictor variables based on the results of the regression model (Table 3).

Table G-1 Significant and non-significant predictors' variables

Financial capability domains	Significant Predictors Variables	Non-Significant Predictors Variables
Making ends meet	Parents with children under 18 years old*	Gender
	Age (35 years or older)	Immigration status
	Numeracy	Household income
	Self-efficacy	Education
	Motivation and Engagement	Document use
	Resilience	Oral communication
	Life stress*	Teamwork
	Life satisfaction	Thinking
	UPSKILL training*	Future time orientation
		Social network
Keeping track	Age (35 years or older)	Gender
	Self-efficacy	Immigration status
	Motivation and Engagement	Parents with children under 18 years old
	Resilience	Household income
	Life satisfaction	Education
		Document use
		Numeracy
		Oral communication
		Teamwork
		Thinking
		Future time orientation
		Life stress
		UPSKILL training

Financial capability domains	Significant Predictors Variables	Non-Significant Predictors Variables
	Age (35 years or older)	Gender
	Household income (≥ $30,000)	Immigration status
	Thinking skills	Parents with children under 18 years old
	Social network	Education
		Document use
		Numeracy
		Oral communication
Planning ahead		Teamwork
		Future time orientation
		Self-efficacy
		Motivation and engagement
		Resilience
		Life stress
		Life satisfaction
		UPSKILL training

Note: * indicate a negative and significant correlation with the financial capability domains.