



Improving Financial Inclusion & Wellbeing

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20 November, 2015



Research Report Series
Behavioural Economics in Action,

**Rotman School of Management
University of Toronto**



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We thank Sunita Pillai, Katie Martin, Steve Trites, Bruno Levesque, Matthew Tansey, Liz Kang, Nicole Dong, Melanie Kim and Felice Lai for insights, comments and research assistance. All errors are our own.



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1. Introduction

“Our economy is built on millions of everyday financial decisions by Canadians. Recent events have shown us that there are major risks and that financial literacy is an important life skill. Whether it is a question of saving for retirement, financing a new home or balancing the family chequebook, improving the financial literacy of Canadians will add to the stability of our financial system and make our economy stronger”

Jim Flaherty, quoted in Ministry of Finance (2009)

To strengthen financial wellbeing and improve the financial decisions of Canadians, the government set up a national task force on Financial Literacy. Their report was released about five years ago (Task Force, 2010) and defined Financial Literacy as “having the knowledge, skills and confidence to make responsible financial decisions.” (p. 10). This definition is broad and goes beyond the notion of financial literacy as mere education.

Since the release of the task force report, there has been a lot of research activity in the area of financial literacy. Fernandez, Lynch and Netemeyer (2014) report the results of a meta-analysis of the relationship of financial literacy and of financial education to financial behaviors and found that interventions to improve financial literacy explained only a very small proportion of changes in financial behaviours. They also found that financial education decays over time. In a recent field experiment in India, Carpena et al (2015) found that while financial education improves knowledge of financial products and intentions, it did not have significant effects on improving financial behaviours. However, they further found that financial education combined with two additional interventions – counseling and goal-setting tools – significantly improved behaviours. In the words of Soman and Mazar (2012) these findings seemed to suggest that “financial literacy is not enough” – in particular financial education needs to be supplemented with numeracy skills and with approaches from the behavioural sciences and choice architecture to facilitate behaviours. In a similar mode, Fernandes and colleagues (2014) argued that financial education needs to be just in time and germane to a specific context to be effective.



The present report is built on the backdrop of this recent evidence and takes a broader look at financial literacy and wellbeing. Rather than focusing the discourse on a meta-level analysis of the content and outcomes of financial literacy initiatives, we would like to broaden the conversation along two dimensions. First, like Fernandes et al (2014), we call on financial literacy researchers and practitioners to study and experiment with the “how’s” and the “when’s” of financial education. For instance, what media and formats are the most effective? How can gamification of financial education be used effectively (see Huang and Soman 2013)? What does “just in time” mean for financial education?

Second, we call for a broader look at the financial ecosystem. Financial literacy, numeracy and choice architecture initiatives are only as effective as the financial system allows it to be. We therefore introduce the broader concept of financial inclusion and take a deeper dive into the landscape to assess a) whether Canada is truly financially inclusive and ask b) what could be done to improve inclusion. In making the case that the lack of financial inclusion is a Canadian problem as much as it is a global challenge, Pillai, Soman and Macklem (2015) point to the urban poor as one example of a population that might be as included in the financial system as we would like.

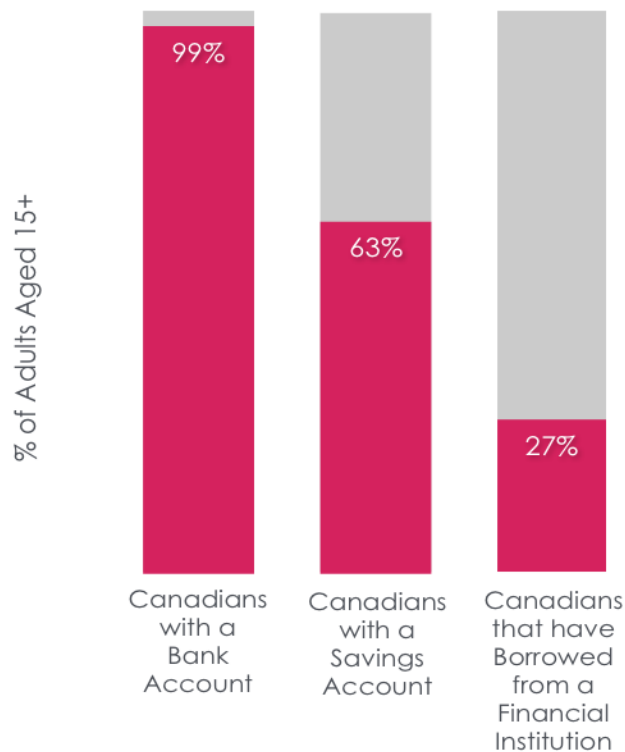
Our specific goals in this report are to:

- 1) Present the Canadian landscape of financial inclusion
- 2) Identify behavioural and life stage factors that policymakers and designers of financial literacy programs need to take into account
- 3) Develop a broad framework and identify demand and supply side solutions to the challenges of financial inclusion
- 4) Identify innovations in financial inclusion both in Canada and overseas
- 5) Identify areas for debate and further research opportunities, and supplement the financial wellbeing strategy recently outlined by the FCAC (FCAC 2015).

2. Financial Inclusion, Wellbeing and Literacy

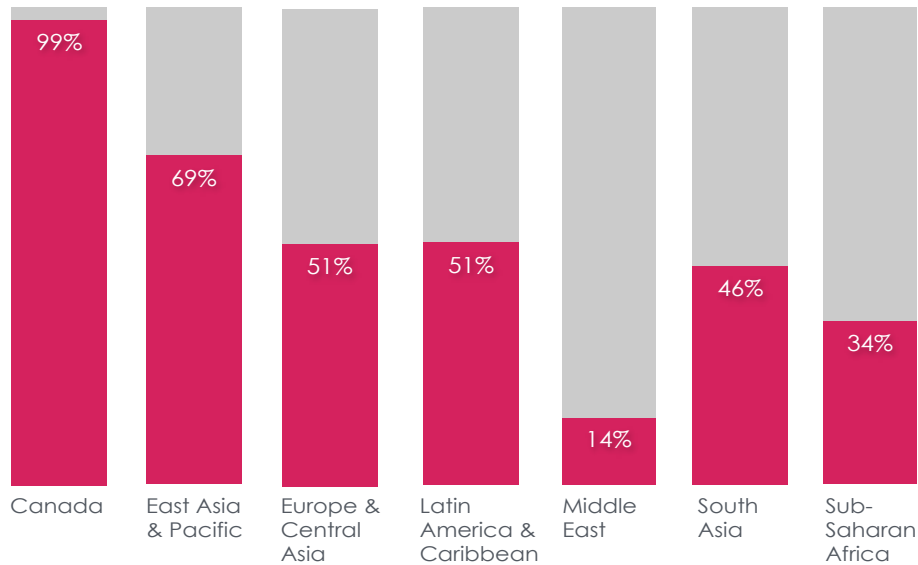
Financial Inclusion is typically defined as access to formal financial services delivered by mainstream commercial institutions at an affordable rate to the marginalized population. At first blush, the lack of financial inclusion does not seem to be a Canadian problem. Almost every Canadian has a formal bank account (see Figures 2.1 and 2.2).

Figure 2.1 Financial Inclusion in Canada



Source: <http://datatopics.worldbank.org/financialinclusion/country/canada>

Figure 2.2 Percentage of Adults with Accounts



Source : <http://datatopics.worldbank.org/financialinclusion/country/canada>

However, there is a rising concern regarding the number of Canadians finding it harder to access the mainstream system. These tend to be vulnerable sections of our population. There are two clear observations that arise from this problem of lack of financial access.

1) There is a rise in informal fringe banking services that charge a higher fee than most formal institutions. Payday lenders in British Columbia are restricted to charging a maximum of 23% on the amount borrowed in interest (Payday Loans Regulation, 2009). The APR (annual percentage rate) of interest on an average loan of \$280 for 10 days at an interest rate of 23% is therefore 839.5%. This is much more than the criminal rate¹ of 60% that is allowed under the Criminal Code Provisions Act.

2) Formal financial institutions are unable to appeal to unbanked and under-banked low-income adults with their existing banking products. For instance, a 2008 study shows that low-income households preferred fringe

¹ "Criminal rate" means an effective annual rate of interest calculated in accordance with generally accepted actuarial practices and principal that exceeds 60% on the credit advanced under an agreement or arrangement.



banking services over formal banking services despite knowing that there is a higher cost involved (Buckland & Fikkert, 2008).

We dive into more details on a framework for solving financial inclusion in §5 of this report. Quite simply, though, there are two sides of the problem. Supply-side factors relate to the way an environment is structured and can take the form of inappropriate financial products or insufficient access due to infrastructure or technological deficiencies; while demand-side factors include a lack of awareness or literacy about financial service products.

The most common response to questions about low levels of financial inclusion typically involve supply side solutions. Yet, demand side solutions often play a key role. The Canadian task force correctly identifies financial education and knowledge as a key factor that drives financial wellbeing. Likewise, our knowledge of the behavioural sciences tells us that the ease of interacting with the financial system, the trust in the system and the simplicity of communications and last-mile interactions are all important factors in driving financial inclusion.



3. Psychological Factors and Behavioural Insights

In thinking through interventions to help financial wellbeing, it is important to recognize that the marketplace is made up of a collection of human beings who are unlike rational economic agents that one may read about in economic texts. Therefore, the best programs and products are the ones designed for humans – agents who can be impulsive, cognitively miserly, emotional, confused, and often irrational in an economic sense. We review key ideas from the behavioural sciences that help us better understand these central actors in any financial systems.

Trust

Trust plays a huge part in how people manage their money and who they trust their money with. A Stanford University study shows that rural Africans in Western Kenya had listed trust as a primary factor for choosing not to use the services of a local banking institution even after the fees of opening a simple savings account were waived. Out of the 63% of people that had opened a bank account, 82% were not active users. Trust was one of the reasons for not using the savings account, along with unreliable service and expensive fees (Dupas, Green, Keats, & Robinson, 2012).

Lack of Knowledge

Lack of knowledge may be another factor affecting people's decision to interact with financial institutions. The rural Kenya study conducted by Stanford University also observed that even though 60% of respondents knew about local bank branches in their area, almost no one knew about the basic details on the services that were offered (Dupas, et al., 2012)

Information Overload

In contrast to the preceding point, consumers may be presented with excessive information. Given the global financial landscape, financial institutions are under more pressure to constantly stay ahead of the game by creating newer and better products and often cross-selling or bundling their products. This not only makes it difficult to understand or keep up with the range of services that



are available but also complicates the process of availing financial products as this is also changing. This overabundance of information may lead to a psychological occurrence known as *cognitive overload*, which may impair an individual's ability to make decisions that best address their financial needs. Cognitive overload may, in turn, cause people to stick with their previous choice (refer to ***status quo bias*** discussed below) when their attention is limited (Thaler & Tucker, 2013).

The above-mentioned behavioural factors may give rise to self-exclusion, which discourages participation in the formal financial system. People may feel that they do not trust financial institutions due to their expensive service charges or stringent documentation requirements. Their lack of knowledge about products and inability to use them may make them feel that formal institutions do not cater to their specific needs. Additionally, being burdened with too much information or too many choices may lead consumers to make less than optimal choices regarding their personal finances. For instance, Buckland and Fikkert (2008) found that personal identification requirements and one's sense of control over one's money," were seen as being more important than service fees. People preferred to use higher-fee fringe banks because of these seemingly irrational and non-economic reasons.

Context Effects

An emerging and strong theme in the research on decision-making is the role of context. Buckland and Fikkert's study showed that respondents favored fringe banks over mainstream banking services due to the comfortable and appealing environment they were provided. The potential benefits of mainstream banking services such as lower services fees were outweighed by other indirect costs such as wait times and operating hours. These indirect costs affected the way respondents thought about financial service providers in that context and, as a result, may have deterred them from availing services at mainstream banking institutions.

Myopia and Present Bias

Present bias is the tendency to value immediate, short-term returns over longer-term benefits. This sort of behaviour is related to *hyperbolic discounting*, which suggests that people think less about the consequences of their decisions made for the future. With hyperbolic discounting, the rate of discounting is not consistent with time, and individuals may tend to discount the value of a later



reward at a rate that increases with the amount of time they have to wait for that reward. In other words, most people would choose \$10 in five days versus \$5 in two days. However, very few would choose \$66 in a year compared to \$60 today as they tend to discount the value of the later reward and consider it to be worth less than the immediate return they receive. To frame this behaviour in the context of financial inclusion, let's take the example of fringe banking services. The consequence of incurring a higher cost with fringe banking services are distant and less important than receiving cash up front and immediately.

Status Quo Bias

Status quo bias refers to behavioural tendencies that display a preference for the current state of affairs. A phenomenon known as *loss aversion* has been shown to be closely linked with status quo bias. This notion suggests that people weigh the disadvantages of leaving the status quo more heavily than the benefits of sticking to it (Kahneman, Knetsch, & Thaler, 1991). Additionally, status quo bias may arise due to cognitive overload that suggests people are likely to prefer their previous choice when they are overloaded with information and are unable to process that information effectively. Given these two conditions, it would not be surprising to see people sticking to old habits when it comes to their personal finances. An individual who has taken out a payday loan previously, for example, may feel that he or she is better off using the services of their familiar neighborhood fringe bank. At the same time, he or she may feel that the services a local bank has to offer are too complex and hard to understand and would rather stick to what they perceive as the less complicated and familiar process.

Optimism

Optimism suggests that people foresee the chance of a positive event being higher than a negative one. For example, when individuals take out a loan from a payday centre, they believe that they will have the cash in two weeks to pay off their debt when in reality they may not. This results in a vicious cycle where they are forced to take out another loan to meet their previous obligation to the payday lender.

It is important to understand that individuals are not instinctively endowed with the ability to make justified choices. Individuals are prone to process information intuitively, which may be subject to certain biases. Making financial decisions that are optimal is a learned skill and can be acquired over time with



experience and education. The next section discusses three studies that show how individuals manage money. It also provides an insight in to the decisions individuals make with regards to their personal finances.

Dominant Behavioural Influences Affecting Financial Decision Making at Various Life Stages

The role played by each of the psychological factors changes as a function of an individual's life stage. In Appendix A, we describe seven life stages and identify the relevant behavioural phenomena at each stage. As is evident from the appendix, designers of financial wellness programs need to have a nuanced understanding of the psychology of their relevant target market in designing the most appropriate interventions.



4. How People Make Financial Decisions: A Review of Three Studies

Three recent studies seek to understand money management practices and financial service choice. The first study was conducted by Nexus Not-for-Profit consulting for the Behavioural Economics in Action research hub at the Rotman School (<http://inside.rotman.utoronto.ca/behaviouraleconomicsinaction/>; hereafter, the Nexus study) to gauge money management practices of low-income households in Toronto, Canada. The second study was conducted in partnership with the University of Winnipeg, Canadian Mennonite University, Menno Simmons College, and St. Christopher House to understand financial exclusion and poverty in Canada. The Abdul Latif Jameel Poverty Action Lab (JPAL) in the United States regarding payday loans conducted the third study.

The Nexus Study: Demographics

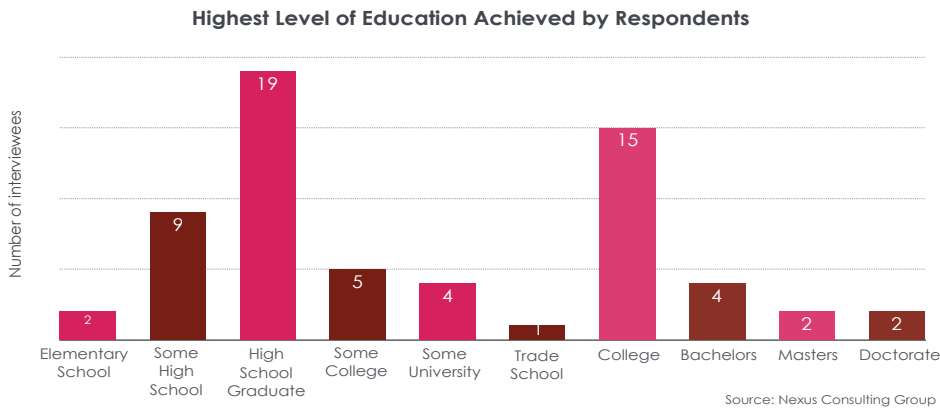
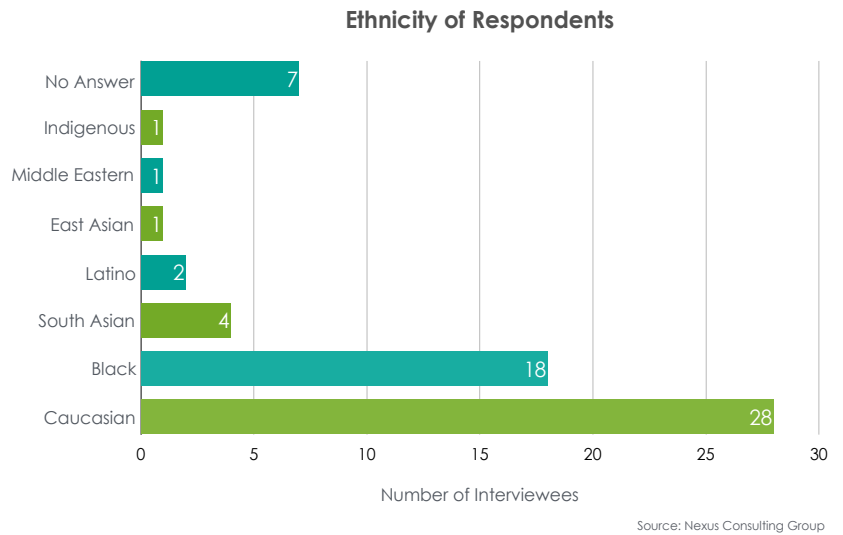
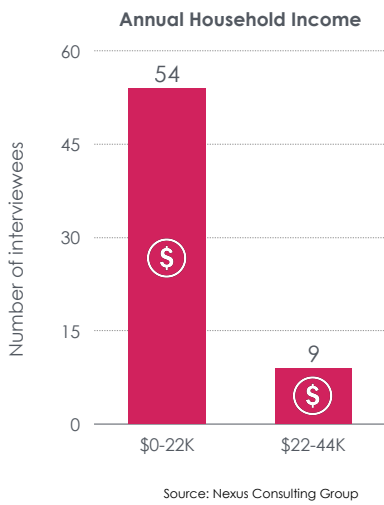
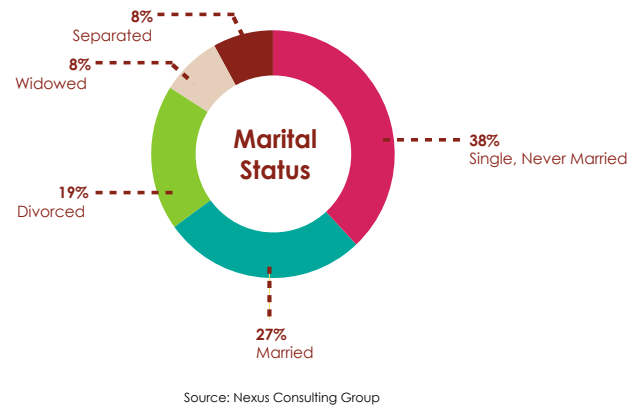
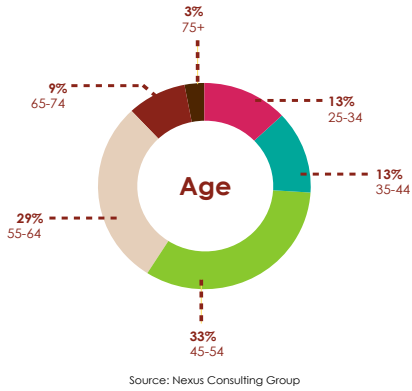
The demographic section displays information about age, marital status, household income, ethnicity, and education. All of the participants in this study were 25 years old and over 50% surveyed were females. In addition to this, 48% of the respondents were unable to work and 21% were employed for wages. Additionally, low income was defined as households without children to support that make less than \$22,000 per year, and those with children who make less than \$44,000 annually.

Interaction with formal banks

Out of the 63 respondents surveyed, about 4.7% previously had bank accounts closed to them because of low household income and bank fees. Around 58.7% of respondents do not have a savings account. The reasons mentioned were as follows: (i) currently not saving; (ii) bank fees; (iii) no point in saving; (iv) weak interest rate, and (v) lack of information. Only 1.6% had another account with their bank that was listed as an investment account.



Figure 4.1 Respondents in the Nexus Study





In terms of making bill payments, thirty-nine people physically went to their banks to transfer money to their payees, twenty-three people made online money transfers, six made payments through telephone banking, and two people send their payments by mail. The three most preferred methods of payments were through electronic transfers, cash, and by cheque.

Interaction with informal financial institutions

Out of the respondents interviewed, 1.6% preferred to use fringe institutions to cash cheques; 12.7% actually used fringe banks to cash cheques, which they said was very rare; And 11.1% received a loan from a fringe institution with an average loan size of \$600 and an average interest rate of 20%.

Based on the above data, it can be seen that the majority of the respondents were single, middle-aged adults with an annual income of \$22, 000 or less. Most of these individuals have a bank account, but more than half do not maintain a savings account nor do they conduct any complex financial transactions such as investment accounts, line of credits, pension funds, or trusts, etc. Most individuals use their accounts for everyday transactions such as paying their bills or withdrawing and depositing money. It would be difficult to say with certainty whether the respondents had any thoughts about saving for the future. Since most of the individuals in the study did not maintain a savings account, and many do not have investment accounts or pension funds, not saving for the future may be a possible consequence.

The SSHRC study

In May 2008, eighty-three low-income individuals across Winnipeg, Vancouver, and Toronto were interviewed and asked about their financial service options and choices. When surveyed, respondents had shown an understanding about the fees that were charges by mainstream banks compared to fringe banking institutes. Table 1 illustrates this finding.

Table 1. Perception of Financial Services Fees

	Respondents Believing That Fringe Bank Fees Are Higher	Respondents Believing That Mainstream Bank Fees Are Higher	Respondents Believing Fees to be about Equal
Winnipeg	71.9%	8%	20%
Toronto	72.3%	16.7%	11.1%
Vancouver	72.8%	0%	27.2%

Source: Buckland and Fikkert, 2008

In addition to the above information, respondents were also asked their opinion about the fairness of fees charged by different fringe banking institutions. The range of opinions showed that respondents differentiated between different kinds of fringe institutes. They considered pawnshops as being the most fair in terms of the service fees that are charged. Payday loans, on the other hand, were rated the most unfair by the respondents as they charge the most fees.

Table 2. Perceived Fairness of Fees

	“Fair” or “Very Fair”	“Unfair” or “Very Unfair”
Pawnshops	67.6%	20.6%
Money Mart	33.3%	51.9%
Fringe Cheque Cashing	14.3%	57.1%
Payday Loans	12.5%	75.0%

Source: Buckland and Fikkert, 2008

The above tables show that respondents were aware of the difference in service fees between fringe banks and mainstream institutions and had an opinion about service fees charged among different fringe institutions. However, the study shows that the individuals interviewed preferred fringe banking services over mainstream banks based on financial service characteristics such as the following: (1) wait times, (2) cheque-hold times, (3) hours of operation, (4) personal identification requirements, and (5) sense of control over their money. The last point was an interesting argument. Respondents knew that fringe banks cost more than mainstream banks. Even so, they felt that while fringe banks



have a higher immediate cost, mainstream banks tend to have more hidden costs associated with their services that make the financial cost difference almost negligible (Buckland & Fikkert, 2008). This sort of behaviour tends to suggest a present bias as individuals are focussed more on the perceived immediate benefit of knowing the cost up front and failing to recognize the higher cost of fringe bank services in the longer term. Additionally, the complexity of the products and services offered by mainstream banks contributes to this impression of the latter having too many hidden fees.

The JPAL Study

The JPAL study was conducted in the United States on 1,441 borrowers of a national payday lending chain store (Bertrand & Morse, 2011). A randomized control trial was performed using three interventions. Borrowers in any of the randomly chosen 77 chain stores were given additional information about the cost of their loan along with an envelope that contained the cash they borrowed and necessary documentation. A quarter of 1,441 borrowers were taken as the comparison group and the remainder were split up into 3 groups and received the following 3 interventions:

(1) Information about the APR (annual percentage rate) was provided on the payday loan borrowed and compared to other similar rates such as mortgages and credit cards.

(2) The dollar cost of the payday loan was provided along with a comparison to cash advances from a credit card. For example, the cost of US\$300 on a credit card accrues an interest payable of US\$2.50 for 2 weeks compared to a payday loan of the same amount that would cost US\$45 for 2 weeks (Abdul Jameel Poverty Action Lab, 2008).

(3) The third and last intervention provided information about the average number of times a person refinances a payday loan before paying it back.

The above research was performed to test whether providing additional information about loan costs would influence people's decisions in terms of their payday loan usage. It is also important to mention that the information was presented to borrowers when they had come into the payday centre to apply for a loan. The results of this research showed that borrowers that received all of the above three information interventions reduced their borrowing by 23%, 16%,



and 12% in every pay cycle compared to the control group that received none of the interventions. In addition to this, it was observed that the dollar cost of loans had the biggest impact on reducing the frequency of borrowing payday loans. Borrowers that received the dollar cost information were less likely to borrow in the pay cycle following the intervention, which resulted in an 11% reduction compared to the control group (Bertrand & Morse, 2011).

In the previous study, it has been observed that respondents make a conscious decision to prefer fringe banks over mainstream financial institutions. However, in the JPAL 2008 study, respondents notably reduced payday loans usage due to the interventions they received (Bertrand & Morse, 2011). This suggests that literacy and the way information is designed and presented to individuals impact their decision to take out payday loans. Even though individuals in the second study were aware of the higher cost of fringe banking services, it is unclear whether they had information presented to them in a format that is similar to the third study. This also raises the question of whether the individuals in the previous study had misjudged the costs and benefits of fringe banking or if they knew about the dollar cost of borrowing from fringe banking services and still preferred to use them.

The first study shows that most people have bank accounts, but very few maintain a savings account or conduct any complex financial transactions such as taking out a line of credit or opening an investment account. Low-income people reliant on their wages and government entitlement programs are influenced by the low wage market and government subsidies for their savings. This study suggests that low-income individuals have few options when it comes to managing their money using the mainstream financial system. Furthermore, individuals are sometimes unaware and uninformed when making decisions about their personal finances as certain biases may play in to their decision-making process.

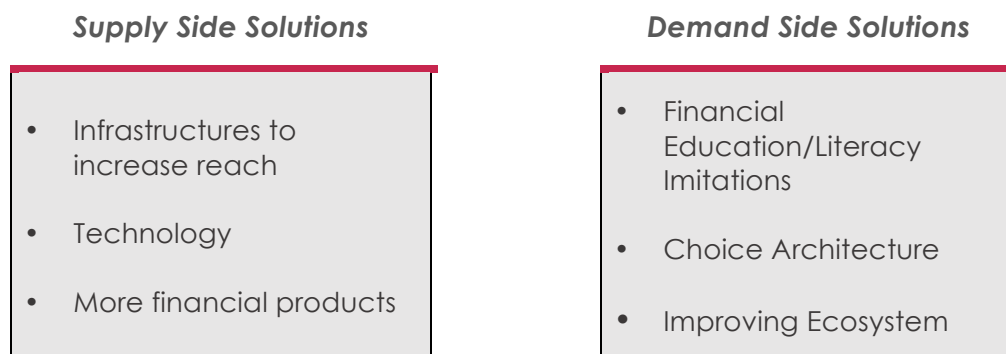


5. Improving Financial Inclusion

The problem of financial inclusion can broadly be classified as a supply- and demand-side issue. Sometimes the problem arises because access to affordable financial resources are not available and simply do not exist yet. A second reason why this problem may occur is because consumers do not demand financial services as these services may not cater to their needs.

Figure 5.1 provides a summary of supply- and demand-side solutions (see also Appendix B for more detailed solutions. The appendix as well as some of the discussion below is based on work done by participants in the Global Ideas Initiative, a University of Toronto program). On the supply side, the solutions have been categorised as infrastructure, technology, and financial products while the demand-side solutions are addressed by education and awareness initiatives, as well as an improvement in the ecosystem that can help nudge the right behaviours.

Figure 5.1 Improving Financial Inclusion



Solution 1: Infrastructure

This refers to the way in which a financial ecosystem is organised to deliver financial services. One solution proposed under infrastructure suggests expanding relatively mobile ATM machines or kiosks that dispense and collect cash. Another solution given is that of commercial banks partnering with NGOs



(non-governmental organisations) to tap into the latter's existing network and increase financial services in hard-to-reach areas. This is because NGOs and development organisations tend to work with the marginalized segment of the population and hence position themselves to reach people in remote areas. The solutions proposed here try to increase accessibility by organising and structuring the financial environment in a better way.

Solution 2: Technology

One of the most revolutionary innovations in improving access to financial services has been in the rise of mobile phone-based money services. According to an interview report, mobile money services have spread across Africa, Asia, Latin America, and the Middle East, increasing mobile money accounts by approximately 32% in 2014. Furthermore, the number of active accounts is up by approximately 41% (Riecke, 2015). This billion-dollar industry can be attributed to the rise in the use of mobile phones in the past decade or so. A second innovation is manipulating large piles of granular data derived from phone activity such as airtime purchases and P2P money transfers. This data is then used to generate a credit score that can be used by loan officers working for microfinance institutions to approve first-time loans based on the credit worthiness of their clients (Instant Risk Scores, n.d.).

Solution 3: Financial Products

The last solution to the supply-side problem has to do with financial products. Shared banking products such as loans have made the forefront of innovation in financial services that are offered. Social entrepreneur and founder of Grameen Bank, Muhammad Yunus, used the idea of “peer pressure and peer support” as the basis for issuing group loans. Two members out of a five-person group would be issued a loan. If one member defaulted, then their friends would be expected to repay the loan. This group lending model creates accountability among members to ensure that the others' businesses succeed and the loan is repaid (Grameen Methodology, n.d.). Additionally, financial institutions are looking to increase their range of products through micro loans, micro savings, and even micro insurance packages. Community-based models are also very popular in accessing financial services. Most remote areas often use a ROSCA (rotating savings and credit association) model where all the members of a group contribute a fixed savings amount over a period of time. Members may meet on a weekly basis when the savings are collected, and one member takes



the entire amount once. This system not only mitigates the risk of saving at home but allows every member of the group access to a lump sum of money that is eventually paid off by the savings contributed by each member on a weekly or biweekly basis.

Solution 4: Education

The demand side of the problem to financial inclusion often arises from lack of education. Many financial institutions such as TD Canada Trust have undertaken initiatives to provide money management skills that are supplemented with financial products and instruments that help consumers with their financial decisions (Financial Literacy, n.d.). Other organisations such as BRAC provide a financial education program along with call centres that support the needs of their clients (Financial Education, n.d.). Countries such as the United Kingdom have chosen to tackle the problems surrounding financial inclusion early on. According to a *TIME* article, beginning in 2014, the UK made literacy on personal finances a mandatory addition to the educational curriculum (Kadlec, 2013).

Solution 5: Awareness and Information Framing

The last solution that is given aims to tackle the demand-side problem by raising awareness about financial education through advertising campaigns. One such initiative was carried out by the Reserve Bank of India that launched its 'Financial Literacy Awareness' programme by displaying posters and slogans at a well-known public railway station (Reserve Bank, 2014). Another prominent example is the payday loans regulation. Under this rule, payday lenders are required to display information about the cost of borrowing a payday loan over time and compare it to the cost of using a credit card (Payday Loans Act, 2008). Notably, the display is written in terms of the dollar cost of payday borrowing which is psychologically more consistent with the manner in which people process information than interest rate (APR) information. The intention behind this is twofold. This not only raises awareness but educates borrowers about the costs of borrowing a payday loan and helps them in their financial planning (Appendix C).

Even though the above-mentioned solutions address the supply- and demand-side issues of financial inclusion, the success of these solutions cannot be ensured based on the intervention alone. Some solutions require the presence of a host of other factors – the right ecosystem - to work successfully. For example, M-Pesa is a successful mobile phone-based banking service



introduced by Vodafone in 2007. The model M-Pesa proposed in Kenya and Tanzania was centred on satisfying the needs of the unbanked. It provided a digital wallet that would allow individuals to transfer money, pay bills, buy airtime and goods, and deposit and withdraw cash at M-Pesa outlets.

However, when M-Pesa was launched in South Africa in 2010, it proved to be far less effective, with the service being suspended later on. Some of the issues that were observed were problems in distributing the service, ease of use, lack of motivation and identification requirements, among other things. M-Pesa's head of mobile commerce, Herman Singh, commented that the initial launch was made with too few M-Pesa outlets and only relied on one bank, which had a low penetration rate in rural areas. This presented problems such as proper distribution and accessibility. Moreover, in places like Kenya and Tanzania, the e-wallet system worked particularly well where there were few ATMs and point of sales (POS) outlets and people could load money through their airtime purchases. However, the opposite was true for South Africa where there were 27,000 ATM and 360,000 POS machines. People would have difficulty loading money onto their digital wallets. That is why in the re-launch of M-Pesa in South Africa, Vodacom ensured that it was connected with all the Internet banks to make it easier for consumers to load money into their M-Pesa accounts (Douglas, 2014). Another adjustment that Vodacom made was to introduce a loyalty program to motivate consumers to use their services. Free airtime was awarded to users on the basis of the usage of their M-Pesa accounts for things such as airtime purchases of M-Pesa cards.

In addition to the above example, some interventions work best when used simultaneously. One such instance is that of financial education to increase the use of financial services. There are many studies that show how low levels of literacy are associated with low levels of inclusion (Atkinson & Messy, 2013). The above examples refer to the last-mile problem of bridging the gap between the solution and the delivery of that solution to its intended audience. In order for some solutions to work, there needs to be other factors present for them to work properly. In addition, the solution has to cater to the environment in which it is being delivered.



6. Innovations in Financial Literacy and the Financial Ecosystem

Despite our earlier pessimism about the paucity of discourse on both the how's and why's of financial education as well as financial ecosystem issues, our journey found some innovative projects which precisely addressed this shortcoming. We review some of them in this section.

Vancity's Pigeon Park Savings

This project is a joint collaboration between Vancity credit union and PHS Community Services, which serve community members in Vancouver's Downtown Eastside. The Pigeon Park Savings initiative aims to provide a basic account for low-income individuals, which includes cheque cashing, withdrawal, payment, and other services for a flat service fee of \$5 every month (Basic Banking, n.d.).

Vancity's Fair and Fast Loan

This product tries to fill in the gap between traditional and payday loan services and help people build a credit history by lending small and affordable loans over a flexible payment schedule. Vancity's Fair & Fast loan was introduced to break the payday loan cycle that most low income individuals become caught in as they cannot make their installment payments and take out another payday loan to pay off the previous one (Vancity Fair & Fast Loan™, n.d.).

Alterna Microloan Program

Alterna Savings and Credit Union provides microfinance services in the form of microloans to individuals and small enterprises. Participants that have received this loan have seen a reduced reliance on government assistance by 21%. Small enterprises that have taken out the loan have experienced a growth in their operations and borrowers have also seen a rise in their income (Alterna Savings and Credit Union Ltd., n.d.).

In addition to the above innovations, physical brick and mortar branches of credit unions were opened to provide access to financial resources when formal banks left certain areas. Vancity's extension into Alert Bay in Northern



Vancouver (Penner, 2015) and Assiniboine Credit Union's branch opening in Winnipeg's North-End (McGregor Branch, n.d.) are examples of such initiatives.

Money School Canada and PlayMoolah

Money School Canada has the goal of creating "a new generation of financially-savvy, young Canadians armed with the knowledge, skill and confidence needed to manage money well" (<http://www.moneyschoolcanada.com/index.html>). Their programs stand out compared to other financial education initiatives through their practical and hands-on elements. In the words of the school's founder Tricia Barry, "The best way (for parents) to teach kids about money is to give them some" (Financial Post 2015).

Another initiative that used the principles of gamification (Huang and Soman 2013) and hands-on activity is a Singapore based business called PlayMoolah (<http://www.playmoolah.com/>). PlayMoolah comprises of a series of games and online activities on which children, youth and their parents learn the skills and confidence needed to make financial decisions in a safe, gamified environment.

Children and Youth Engagement in Financial Service Products

The issue of financial inclusion among children and youth is a bit more complicated. There are a lot more regulations in place to protect the best interests of this particular segment. Since children and youth are usually below the age of contractual capacity, regulatory requirements is often the biggest barrier to overcome financial exclusion. However, a lot of discussion around the topic of child friendly products has been published (Jayasekaran, Stoffele, Rademaker, & Zanghi (n.d.)).

A few banks around the world that provide financial services catering to youth are summarized in Table 3 below.



Table 3. Financial Services to Children and Youth

	Country of Head Office	Customers Ages under 18 with an Account	Customers Aged 18-24 with an Account	Savings Volume that is Youth Generated
Commonwealth Bank	Australia	1.361 million	1.354 million	20.00%
FRANK by OCBC Bank	Singapore	30% (must be 16 years of age)	> 60%	70.00%
ING Bank	Netherlands	1.1 million	390,000	
Intesa Sanpaolo Bank	Italy	350,000	1 million {600,000 aged 24-35}	20.00%

Source: childfinanceinternational.org/resources/publications/2014banking-a-new-generation.pdf

New innovations and expanding the range of financial services are some of the steps that have been taken to increase financial inclusion among low-income adults and children and youth. The above innovations refer to the way in which financial services are being expanded to include the marginalized and disadvantaged segment of the population who are unable to access financial services easily. However, additional interventions can help to aid consumers' decision-making processes. For example, the Vancity Fair & Fast Loan product could have information about payday loan centres and the cost of borrowing loans from such centres. A small difference in displaying information in a certain manner can result in significant changes, as shown in the JPAL 2008 study. Using nudge tactics and choice architecture in current innovations may result in increasing financial inclusion. The next section will discuss more about the applications of behavioural insights in the context of financial inclusion.

7. General Discussion & Conclusion

Previous sections of this paper discussed how present bias can influence people to focus on immediate short-term benefits and discounting the impact their decision may have in the future. The JPAL 2008 study also alluded to the effect of present bias and suggested how individuals are not always informed when making choices regarding their financial service provider. This presents an opportunity to apply behavioural insights to aid consumers in making their decisions. Compounding the dollar cost of a payday loan compared to cash advances on credit cards was a way to show individuals what their present actions might cost them in the future. This is a consideration that has already been taken by the Canadian government, which requires payday loan centres to display information about the cost of their loans in their stores (refer to Appendix C).

The applications of behavioural insights, however, do not end there. Commitment savings accounts that allow individuals to withdraw money once their goal amount has been reached have been effectively implemented in places such as the Philippines and Malawi. Kenya has implemented an interest-free loan product contingent on a third of that loan amount being held as savings (Ehrbeck, 2013). One of the most noteworthy facts about incorporating behavioural insights to change behaviour is that not a lot has to be done. Small changes such as displaying the correct information in the right way (as done in the JPAL 2008 study) can yield significant changes in behaviour.

It is important to note some of the limitations of this paper. The sample sizes that were considered for the first two research studies may not have been significant, but they still provide an insight into how individuals think and manage their money. Moreover, the studies suggest how people think about fringe banking institutes compared to formal banks and how their decisions may change when they are better informed about their financial choices. However, it is unclear whether individuals make informed choices. The second study observed how people prefer fringe banks over mainstream banks. It would be interesting to see if the same individuals were to express the same opinions about their preferences towards financial products if information about the cost differences and service benefits were displayed in a different format.



In the second section of the paper, it was discussed how there is a last-mile problem because of a gap that exists between a solution and the delivery of that solution to individuals. In the context of financial inclusion, it can be said that the first mile pertains to infrastructure, financial products, technology, and other elements that would go into creating a solution and making it available for distribution. The last mile, in this situation, would be looking at variables that engage consumers to accept the solutions provided to them. In other words, solutions can be promoted through choice architecture, financial literacy and by increasing consumer motivation.

Often times, these engagement variables are considered separately and not in conjunction with each other. First, choice architecture, which is the way in which information is designed and presented, influences consumer decision-making.

Secondly, financial literacy and education make individuals better informed about the choices they make with regards to their finances. Review of the literature on financial literacy reveals that financial education does have a definite correlation with knowledge and skills. However, this gain in knowledge and skills does not always convert into a long-term gain by the way of a change in financial behaviour.

There are several reasons attributed this phenomenon, including knowledge decaying with time, the inability to gain real life experience through financial education, the dependency of financial behaviour on numeracy skills, the short-term duration of financial literacy programs and so on.

Studies have shown that causal effects cannot be deduced between financial literacy and desired behavioural outcome. Therefore, the issues that surrounds literacy programs should not only be about making programs more effective, but also about making the audience more receptive. Behavioural insights, therefore, should be the center piece of financial literacy programs. Knowledge and attitudes can be developed through classroom training and other educational formats, however, behavioural interventions would be required for the knowledge to convert into actual behaviours.

A key element of literacy programs is evaluation. Evaluation of literacy programs achieves two main objectives. By evaluating the program, the educator will be able to identify whether the desired outcomes of the program are being implemented as anticipated. If not, the educator can discover the program's



barriers, weaknesses, strengths, and possible alternatives. Moreover, evaluation helps the practitioners document the outcome of financial education programs.

From a behavioural perspective, the best method to test the design these programs are randomized controlled trials (RCTs) – an experimental design that randomly assigns participants into a treatment group or a control group. Even though RCT's might be time and resource intensive, they can identify and examine the effect of specific behavioural interventions on financial outcomes. As financial literacy is still in the early stages of evolution, knowledge derived from this method of evaluation could prove very useful in shaping the future of this domain.

Motivation is the third engagement variable and is the one that encourages people to engage in an initiative because it benefits them in some way. It would be interesting to look at the impact of using all three engagement variables to promote financial inclusion in Canada. In addition to learning about how to increase financial inclusion, it is also important to consider the financial ecosystem that is constantly changing. Effective solutions to address this issue should also be flexible enough to suit its surroundings.

In conclusion, we believe that going forward, our national conversation about financial literacy should be broadened to include a rich understanding of the behavioural insights that underlie financial behaviours, and that the discussion evolved to study financial inclusion more broadly at the ecosystem level. Finally, we call on developing a culture of randomized trials and evidence based practices in delivering financial literacy programs.



References

- Alterna Savings and Credit Union Ltd. – Success stories. (n.d.). Retrieved August 4, 2015, from <https://www.alterna.ca/AboutUs/Community/EconomicDevelopment/MicroFinanceProgram/SuccessStories/>
- Atkinson, A., & Messy, F. (2013), "Promoting financial inclusion through financial education: OECD/INFE evidence, policies and practice," OECD working papers on finance, insurance and private pensions, No. 34, OECD Publishing. <http://dx.doi.org/10.1787/5k3xz6m88smp-en>
- Basic Banking. (n.d.). Retrieved July 31, 2015, from <https://www.vancity.com/AboutVancity/VisionAndValues/ValuesBasedBanking/FinancialLiteracyAndBasicBanking/BasicBanking/>
- Behavioural Insights Team. (n.d.) The Behavioural Insights Team: Update Report 2013-2015. Retrieved October 22, 2015 from http://38r8om2xjhhl25mw24492dir.wpengine.netdna-cdn.com/wp-content/uploads/2015/08/BIT_Update-Report-Final-2013-2015.pdf
- Bertrand, M., & Morse, A. (2011). "Information disclosure, cognitive biases, and payday borrowing." *The Journal of Finance*, 66(2011): 1865–1893. Retrieved July 23, 2015, from <http://www.povertyactionlab.org/publication/information-disclosure-cognitive-biases-and-payday-borrowing>
- Buckland, J., & Fikkert, A. (2008, May 9). Choosing financial services Where the options are limited. Retrieved July 13, 2015, from http://financial-exclusion.uwinnipeg.ca/sites/financial-exclusion.uwinnipeg.ca/files/docs/Choosing_Financial_Services_Where_the_Options_are_Limited.pdf
- Carpena, Fenella; Cole, Shawn A.; Shapiro, Jeremy; Zia, Bilal Husnain. 2015. *The ABCs of financial education: experimental evidence on attitudes, behavior, and cognitive biases*. Policy Research working paper; no. WPS 7413; Impact Evaluation series. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/2015/09/25050693/abcs-financial-education-experimental-evidence-attitudes-behavior-cognitive-biases>



- Department of Finance Canada. (2009). "Minister of Finance Launches Task Force on Financial Literacy." Media release 2009-067. Toronto, June 26. Retrieved from www.fin.gc.ca/n08/09-067-eng.asp
- Douglas, K. (2014, November 17). Why M-Pesa's Kenya business model had to be altered for South Africa. Retrieved July 28, 2015, from <http://www.howwemadeitinafrica.com/why-m-pesas-kenya-business-model-had-to-be-altered-for-south-africa/44945/>
- Dupas, P., Green, S., Keats, A., & Robinson, J. (2012, February 6). Challenges in banking the rural poor: Evidence from Kenya's western province. Retrieved July 17, 2015, from http://web.stanford.edu/~pdupas/Challenges_DupasEtAl2011.pdf
- Ehrbeck, T. (2013, February 18). Behavioral insights to advance financial inclusion – or why Swedes are not necessarily better human beings than Danes. Retrieved August 5, 2015, from http://www.huffingtonpost.com/tilman-ehrbeck/financial-inclusion-poor_b_2317686.html
- Fernandes, D., Lynch Jr, J., Netemeyer, R. (2014, January 27). Financial Literacy, Financial Education, and Downstream Financial Behaviours. Retrieved from <http://pubsonline.informs.org/doi/abs/10.1287/mnsc.2013.1849?journalCode=mnsc>
- Financial Consumer Agency of Canada. (2015). National Strategy for Financial Literacy – Count me in, Canada. Retrieved from <http://www.fcac-acfc.gc.ca/Eng/financialLiteracy/financialLiteracyCanada/strategy/Documents/NationalStrategyForFinancialLiteracyCountMeInCanada.pdf>
- Financial Education and Client Protection. (n.d.). Retrieved July 15, 2015, from <http://microfinance.brac.net/our-approach>
- Financial Literacy. (n.d.). Retrieved July 15, 2015, from <http://www.td.com/to-our-customers/financialliteracy.jsp>
- Financial Post. (2015). The best way to teach your kids about money? Give them some. Retrieved from <http://business.financialpost.com/personal-finance/family-finance/millennial-money/the-best-way-to-teach-your-kids-about-money-give-them-some>



- Grameen Methodology (n.d.). Retrieved July 15, 2015, from <http://grameenresearch.org/grameen-methodology.org-2>
- Huang, W., Soman, D. (2013). A practitioner's guide to gamification of education. *Research Report Series Behavioural Economics in Action*. Retrieved from <http://inside.rotman.utoronto.ca/behaviouraleconomicsinaction/files/2013/09/GuideGamificationEducationDec2013.pdf>
- Instant Risk Scores for Emerging Markets. (n.d.). Retrieved July 15, 2015, from <http://www.firstaccessmarket.com/>
- Jayasekaran, S., Stoffele, B., Rademaker, J., & Zanghi, A. (n.d.). Beyond the promotional piggybank: Towards children as stakeholders. Retrieved August 4, 2015, from http://www.unicef.org/csr/css/UNICEF-CYFI_Beyond_the_Promotional_Piggy_Bank_06_05_13.pdf
- Kadlec, D. (2013, February 14). Bold new rule: Students in the U.K. must study personal finance. Retrieved July 15, 2015, from <http://business.time.com/2013/02/14/bold-new-rule-students-in-the-u-k-must-study-personal-finance/>
- Kahneman, D., Knetsch, J., & Thaler, R. (1991). Anomalies: The endowment effect, loss aversion, and status quo bias. *Journal of Economic Perspectives*, 193–206. Retrieved July 21, 2015, from <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.5.1.193>
- Lino, M. (2014). Expenditures on Children by Families. Retrieved July 23, 2015, from http://www.cnpp.usda.gov/sites/default/files/expenditures_on_children_by_families/crc2013.pdf
- McGregor Branch. (n.d.). Retrieved August 4, 2015, from <http://www.assiniboine.mb.ca/My-Finances/Banking/Access/McGregor-Branch.aspx>
- Ministry of Finance. (2009). Minister of finance launches task force on financial literacy. Toronto, ON: Department of Finance. <http://www.fin.gc.ca/n08/09-067-eng.asp>



- Office of Chief Actuary. (2014). Mortality Projections for Social Security Programs in Canada. Retrieved July 23, 2015, from <http://www.osfi-bsif.gc.ca/Eng/Docs/mpsspc.pdf>
- Payday Loans Act, 2008, S.O. 2008, c. 9. (2015, July 20). Retrieved July 23, 2015, from <http://www.ontario.ca/laws/statute/08p09>
- Payday Loans Regulation. (2009). Retrieved July 13, 2015, from http://www.bclaws.ca/Recon/document/ID/freeside/16_57_2009#section22
- Penner, D. (2015, February 26). Vancity extends banking reach to remote Alert Bay. Retrieved August 4, 2015, from http://www.vancouver.sun.com/business/Vancity_extends_banking_reach_remote_Alert/10846131/story.html
- Reserve Bank Launches Financial Literacy Awareness Programme. (2014, October 18). Retrieved July 15, 2015, from <http://www.newindianexpress.com/cities/hyderabad/Reserve-Bank-Launches-Financial-Literacy-Awareness-Programme/2014/10/18/article2483223.ece>
- Riecke, J. (2015, March 5). The state of mobile financial services: An interview with GSMA's Jennifer Frydrych. Retrieved July 15, 2015, from <http://cfi-blog.org/2015/03/05/the-state-of-mobile-financial-services-an-interview-with-gsmas-jennifer-frydrych/>
- Soman, D., Mazar, N. (2012, November 12). Financial literacy is not enough. *The Hill Times*, Retrieved from <http://inside.rotman.utoronto.ca/behaviouraleconomicsinaction/files/2013/03/TheHillTimes-25.pdf>
- Soman, D., Pillai, S., Macklem, T. (2015, April 7). Accessible banking systems are key to reducing poverty. *The Globe and Mail*, Retrieved from <http://www.theglobeandmail.com/report-on-business/rob-commentary/accessible-banking-services-are-key-to-reducing-poverty/article23828256/>
- Task Force on Financial Literacy. (2010). Canadians and their Money – Building a Brighter Financial Future. Retrieved from



<http://www.financialliteracyincanada.com/pdf/canadians-and-their-money-1-report-eng.pdf>

Thaler, R., & Tucker, W. (2013). Smarter information, smarter consumers. Retrieved July 22, 2015, from <https://hbr.org/2013/01/smarter-information-smarter-consumers>

The Abdul Jameel Poverty Action Lab. (2008). Retrieved July 30, 2015, from <http://www.povertyactionlab.org/evaluation/information-disclosure-cognitive-biases-and-payday-borrowing-united-states>

Vancity Fair & Fast Loan™. (n.d.). Retrieved August 4, 2015, from <https://www.vancity.com/Loans/TypesOfLoans/FairAndFastLoan/>



Appendices





Appendix A. Behavioural Influences as a Function of Life Stage

Life Stage 1: Post-secondary education

Post-secondary education is one of the first and most crucial financial decisions young people make today. It is also one that has the longest lasting impact on financial well-being. During this life stage, three major financial activities need to be managed:

- Handling tuition payments
- Maintaining and adhering to a student budget
- Managing student loans

Behavioural Influences:

Peer Effects: High school graduates and parents tend to be influenced by their peers while making this decision. For example, when living abroad, students may not always structure their lifestyle based on their needs and financial capability, but based on the activities their peers are engaged in. Food expenses, for example, are a major part of the student budget and may not be dictated by budget constraints, but by where their classmates usually spend their time. Parents may wish to put their children in select schools based on the recommendations of their peers rather than what is financially sensible. While peer recommendations may be suitable in selecting a good school, an adequate amount of financial planning should take place before taking on a high student loan.

Information Overload: Another major influence at this stage is information overload. That is, the presence of too much information in the environment, preventing the individual from evaluating and making a good decision. When an individual seeks information about student loans, he or she is provided with information regarding interest rates, loan terms, collateral requirements and so forth. However, the crucial element of analyzing this information is most often left to the individual.



Limited Willpower: Once a loan is secured for education, many years are spent paying it back. It takes a lot of willpower, patience and persistence to make regular payments until the principal and interest is completely paid off.

Life Stage 2: Entering the workforce

Unlike many other life stages where an individual might be making a big expenditure, this is unique because a steady income source has emerged. This is also the phase where an individual transition from being a student to an earner, and where major lifestyle changes can occur.

Behavioural Influences:

Overconfidence: The overconfidence effect is a well-established bias in which a person's subjective confidence in his or her judgments is reliably greater than the objective accuracy of those judgments, especially when confidence is relatively high. In this life stage, individuals tend to get carried away by the sudden increase in disposable cash and therefore may indulge in excessive spending due to overconfidence about his or her earning capability and the stability of their income stream.

Life Stage 3: Getting married/Living as a couple

Getting married or moving in with another person is usually a major life transition. Issues like joint accounts, paying off shared debt, dual incomes and financial planning will likely play a big role in their married life. If they are not carefully planned, they could lead to considerable indifferences. Several key activities should take place during this life stage:

- Defining shared financial goals
- Implementing a plan to manage shared finances
- Planning a wedding budget
- In some cases, creating a pre-nuptial agreement

Behavioural Influences:

Over optimism: Because of the belief that world is a better place than it really is, people aren't prepared for the impending dangers. Due to over optimism about



the future, couples tend to underestimate the financial challenges they will experience together.

Survivorship bias: This is a bias that comes from focusing only on surviving examples, causing us to miscalculate a situation. In this case people generally overestimate the probability of a successful marriage, in spite of the overwhelming evidence against it.

Life Stage 4: Having children

This is a life stage where an individual needs to become more selfless and develop a concrete financial plan for themselves and for the next generation. Not only does an individual have to manage the household with lesser money, new parents need to start saving substantially to ensure all the care and nourishment is provided for their children. Estimates from the U.S. Department of Agriculture, states that on average, it takes about \$150,000 to raise a child, not including tuition. Several key financial activities should take place during this life stage:

- Planning for childcare expenses
- Opening an RESP account and planning for tuition costs
- Consider purchasing or updating life insurance details to ensure family members are financially protected in the case of death or illness

Behavioural Influences:

Present Bias: New parents may be focussed on providing the day-to-day needs of the child and future costs such as tuition, may be less of a priority. Consequently, money that could have been saved for education might be used for more enjoyable purchases such as clothing and toys. In Canada, one of the consequences of present bias is that many families do not take advantage of government benefits such as the Canada Learning Bond – a program that provides up to \$2000 of tax-free money to eligible families for post-secondary education.

Planning Fallacy: This fallacy describes the tendency to underestimate how much time or effort it would take to complete a task. Estimates from the U.S. Department of Agriculture make it evident that raising a child can be a costly endeavour. The cost of childcare, for example, can be extremely expensive -



parents may be more prepared to handle this expenditure more comfortably if they had planned for this expense prior to having children. Working in tandem with present bias, parents may not save and plan enough for their child's education, which can prove to be a financial burden for the child and the family later on.

Life Stage 5: Owning a home

Owning a home is one of the biggest personal investments an individual makes. Therefore, it is extremely important to plan for this change and also understand how to protect their investment.

Behavioural Influences:

Peer Effects: Individuals may be influenced by the lifestyle of their peers and individuals may end up purchasing homes that match the lifestyle of their peers rather than what is financially sensible. Hence, an individual or a couple may take on more mortgage debt than they would like.

Post-purchase rationalization: Another dominant bias that is involved in owning a home is post-purchase rationalization. Individuals tend to justify their purchases even though they might not have secured the best deal. Therefore, they might end up spending a lot more on the same property even though it might not be a good investment.

Life Stage 6: Job Loss

Losing a job is often an unpredictable event. It means losing income and having to survive on savings and other benefits for an extended period of time. It also results in a sudden transition in the lifestyle. Depending upon the circumstances, it will require one to:

- Reduce your expenses through budgeting
- Manage debt
- Replace income by claiming benefits and find new sources of income



Behavioural Influences:

Implementation Intentions Gap: While individuals know that they need to search for a new job, it can be difficult to develop and adhere to a concrete plan to meet this goal. Evidence from the work done by the Behavioural Insights Team in the UK has shown that helping individuals develop and commit to a concrete job search plan reduces the amount of time they spend on unemployment benefits.

Status quo bias: During a period of unemployment, an individual cannot stick to the status quo and may need to make changes to their budget and lifestyle. However, this can be difficult for an individual if they are accustomed to a certain lifestyle. Furthermore, some individuals may need to change fields to find suitable employment, which can be a difficult transition.

Life Stage 7: Retirement and Retirement Planning

A good retirement plan should balance the needs, wants and the reality of an individual's finances. This is a challenging task because of the long-term commitment required to ensure sufficient savings. Furthermore, Canadians are living longer than ever before - the average Canadian reaching 65 years old in 2013 can expect to live until age 87. This is about five years longer than the life expectancy of the average Canadian reaching age 65 in 1970. Current and future retirees face the challenge of stretching their retirement savings over a longer lifespan than their parents and grandparents had done in the past.

Behavioural Influences:

Hyperbolic discounting: With regards to retirement savings, individuals tend to place lesser value on the future benefits they would reap from saving more money today, as compared to the costs or sacrifices that need to be made in the present.

Planning fallacy: In spite of knowing that saving for retirement is important, individuals may not possess the knowledge to determine when to start and how much they have to save for the retirement in order to reach their retirement savings goals. Furthermore, individuals may not commit to contributing to a retirement savings plan because of the belief that their existing savings, assets, or pension will suffice.

Appendix B. Supply and Demand Side Solutions

	Infrastructure	Technology	Financial Products		Education	Awareness
	Supply Side	1) increasing ATMs/Kiosks in remote areas	1) Mobile banking with a user friendly interface that allows customers to create and maintain a personal banking account using their mobile phones		1) Shared banking products (a group of people that have similar loan types will be linked together to make their payments so that each month all the members of the group will contribute a little money towards their outstanding amount)	Demand Side
2) Commercial banks partnering with NGOs or community centres to increase their presence in hard-to-reach areas		2) Using airtime purchase and P2P mobile money transfer information to generate credit scores	2) Increasing the range of services provided by micro finance institutions, commercial banks and other formal financial institutions to cater to the unbanked or under banked	2) Creation of a financial literacy curriculum that discusses banking terminology and applications to banking	2) Communicating banking services at well-known community institutions such as churches, temples, shelters, etc.	
3) Microfinance institutions (MFI) can merge their client data with existing databases to create a credit report		3) Using biometric information (i.e. Finger-printing) to track customers in a reliable manner	3) Community chit funds or rotating savings and credit association (ROSCA): this system allows members to save money on a regular basis over a fixed amount of time. Every member is therefore able to access a lump sum of money that they pay back over the fixed period of time	3) Local community level education that includes: -workshops delivered by bankers, teachers, board officials, and education experts -playing out real-life scenarios where people face financial troubles -a basic vocabulary list used for ATM machines, banks, and mobile phone applications -visual-& audio-based learning success stories	3) Advertising through radio, mobile phones, posters, pamphlets, NGO, field workers, etc.	
4) Commercial banks partnering with mobile payment applications to create a network of outlets that allow people to deposit and withdraw money (i.e. bKash)			4) Sharia-compliant banking products to target Muslim ethnic minority: -partnership between government and state banks -raise awareness through Mosques & influential community members	4) Education curriculum that can effectively deliver financial concepts to students	4) pay-day loan legislation	



Appendix C. Payday Loan Signage

MINISTRY OF
CONSUMER SERVICES

How much will **\$300** cost
you for **two weeks?**

IF YOU BORROW:	PAYDAY LOAN (assuming cost of borrowing is \$21 per \$100)*	CREDIT CARD (assuming a daily interest rate at 23% APR for a cash advance)
One loan	\$63	\$2.65
Two loans	\$126	\$5.29
Four loans	\$252	\$10.59
Six loans	\$378	\$15.88

Complaint? Concern? Please call:
Ministry of Consumer Services at
(416) 326-8800 or 1-800-889-9768 | TTY 416-229-6086 or 1-877-666-6545

Source: How much will \$300 cost. [Poster]. Retrieved from http://www.sse.gov.on.ca/mcs/en/Pages/Business_Licences_Payday.aspx