



A Study of the Use and Benefits of Technology to Promote Youth Savings



Advancing Integrated Microfinance for Youth (AIM Youth)

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Executive Summary

Advancing Integrated Microfinance for Youth (AIM Youth) was launched by Freedom from Hunger in partnership with The MasterCard Foundation to address the needs of young people to meet their growing economic pressures and achieve their future financial goals. The project's goal was to reach 37,000 youth ages 13 to 24 in Mali and Ecuador with financial services and financial education.

To implement the services, Freedom from Hunger partnered in Mali with two non-governmental organizations and two credit union federations, and in Ecuador with four credit unions. By the end of the period, the project had surpassed its original goal by reaching close to 40,000 youth with financial services, primarily in the form of savings, and education.

In Ecuador, Freedom from Hunger and its local partners found an opportunity halfway through the project to implement two mobile-based technologies that had the potential to encourage youth to save regularly in a savings account: text messages to reinforce key financial education concepts and remote savings collection via Smartphones.

Given the current focus in the microfinance field on the potential for technology to increase access to financial services, determining the effectiveness of new technologies in promoting savings is critical. In an effort to contribute to the knowledge base of technology and microfinance, Freedom from Hunger carried out a small-scale study with participating youth and field staff to

- 1) assess the use and *perceived* impact of technology implemented by the credit unions to promote the financial capability of youth through increased savings and
- 2) assess the costs and benefits of the technological innovations.

Findings from the study suggest that the implemented technologies are being positively received by the youth, parents and staff. According to the data gathered from participating youth, both systems are prompting them to save money.

The revenues generated from the savings collected by the remote savings system have the potential to be financially profitable in the medium-term because they are being leveraged with more profitable financial products aimed at adults. In contrast, the financial viability of text messaging is not as clear under its current design targeting only young people.

This study's findings and analysis aim to contribute to the field of financial inclusion knowledge base by offering insights on the potential and limitations of technology in promoting savings for young people living in poverty. There is a need for further studies to determine long-term impact and cost-effectiveness of new technologies being implemented given the nature of this small-scale study.

Project Background

Young people living in poverty face many challenges as they transition from economic dependence to increased household responsibility. Their need to contribute to the household well-being is in constant tension with their limited access to financial resources and opportunities. This combination of factors can severely inhibit a young person's ability to break the vicious cycle of intergenerational poverty. Freedom from Hunger, a recognized expert in integrated financial and non-financial services for the chronically hungry poor, reasoned that offering young people with a combination of financial services and financial education would enhance the ability of young people to respond to their growing economic needs by strengthening their financial skills and knowledge.

As a result, Freedom from Hunger launched the *Advancing Integrated Microfinance for Youth (AIM Youth)* project in partnership with The MasterCard Foundation to address the financial needs of young people ages 13 to 24 in Mali and Ecuador.¹

In Ecuador, the four engaged credit unions offered individual savings accounts and financial education. The savings accounts are available at a low-opening amount and low or no opening fees. The financial education consists of ten 30-minute long sessions designed to promote savings and money-management skills.

All four credit unions followed the same delivery model. Field staff reached out to middle and high schools to facilitate financial education sessions for students during school hours. As part of the sessions, credit union staff explained to youth how they could open a savings account. In most cases, youth could bring the necessary documentation to one of the sessions to open the account, though in some cases the young person would be required to visit the branch to finalize the account opening process. Youth under the legal age (18 years) to open an account required a co-signer, who in most instances was a parent. In this model, credit union field staff dedicate between 10 and 25 percent of their time to youth services, and the rest of the time to managing and promoting financial products for adults.

The *AIM Youth* project was rolled out in two phases, with two credit unions participating in the first phase, followed by two in the second phase. This staggered approach was intentional to allow the second phase to apply lessons learned from the earlier implementation. This sequence also allowed the project to take advantage of new mobile phone-based technology that became available prior to the second phase. Given the high level of mobile-phone penetration in Ecuador,² investing and implementing the new technologies was a clear choice.

¹ For more information on *AIM Youth*, see Ramirez, R and C Nelson. "Models for integrating financial services with financial education for young people: Lessons learned from the *Advancing Integrated Microfinance for Youth* initiative." Freedom from Hunger. May 2014.

² IFC Mobile money scoping country report: Ecuador. <http://www.ifc.org/wps/wcm/connect/26b58d804a052a1e8accffdd29332b51/MobileMoneyScopingReport-Ecuador-Presentation.pdf?MOD=AJPERES>. September 2011. (Accessed June 15, 2014).

Technology Innovation #1: Remote Savings Collection System

For the first innovation, field staff used Smartphones to collect savings remotely during their visits to schools, homes and businesses. Credit union personnel carry the Smartphones and portable mini-printers while conducting regular field visits to collect savings from account holders. Staff can collect savings at two different times. They can collect savings during their visits to schools after they facilitate financial education sessions or during visits at homes or businesses of individuals who have a programmed savings account.³ During the visits to homes and businesses, staff members encourage adults who have children with a savings account to make a deposit into the youth accounts.

When savings are collected, field staff members use the portable mini-printer to print a receipt for youth to confirm their deposit and a second receipt for the cooperative to record the transaction. Since the Smartphone transfers the information about the deposit to the credit union's system, the deposit is automatic. Upon returning to the branch, staff must reconcile the money received along with the receipts that were printed and the information in the credit union's management information system.

The objective of the remote savings is to tackle two of the major challenges faced by people in rural areas in accessing formal financial services: the cost and time of traveling to a financial institution. For young people with even more limited economic opportunities, less mobility and independence, and inadequate knowledge about financial services, an easily accessible financial service could make a difference in their ability to routinely save. While the remote savings collection was taking place even before the introduction of the Smartphones, having an automated system that can connect directly to the financial institution's management information system and provide an instant receipt can reassure people who might otherwise be concerned about their deposits not reaching their accounts either because of theft or loss. Since the staff field visits were already taking place, a key assumption is that the features of the remote savings system would prompt *additional* savings deposits.

Technology Innovation #2: Financial Education Text Messages

The second innovation consisted of sending financial education text messages to mobile phones of youth account holders. The text messages were designed to reinforce key concepts learned from the financial education sessions in which youth participated, encouraging recipients to save as much and as frequently as possible (see Annex A for Examples of Text Messages). The text messages are sent weekly over a fixed period of time at no cost to the receiver. Nudging youth to save is important because of psychological barriers many people face to develop a savings habit, such as the tendency to continue doing what is comfortable and familiar (i.e. not setting aside money regularly).⁴ Some

³ A programmed savings account is a type of account to which the account holder commits saving a certain amount of money.

⁴ Pathak, P, J Holmes and J Zimmerman. "Accelerating financial capability among youth: Nudging new thinking." New America Foundation. (June 2011).

studies have shown that text messages can be effective reminders to promote savings,⁵ though those studies have not examined the financial aspects of such systems.

The text messages, however, are not necessarily received by all youth account holders. Since the text-messaging system was implemented at a later phase in project implementation, the savings account application sometimes captured the phone number of the co-signer (often a parent) in the case of youth under legal age. This happened either because the credit union staff did not specify that the young person’s account could be included or because the young person did not have a mobile phone at that point.

The text-messaging system is also being utilized to remind adults when their loans are due, to send promotional messages, and to send confirmations when transaction are made.

Table 1 shows each of the participating partners and the technology innovation that was implemented.

Technology	San José	San Miguel de los Bancos	Cooprogreso
Financial Education Text Messages	N/A	April 2013 to date	June 2013 to date
Remote Savings Mobilization	August 2011 to April 2012	April 2012 to date	N/A

The study took place July through August 2013, approximately 18 months after the remote savings system had been implemented by San Miguel de los Bancos, and three to five months after the text-messaging system had been implemented by San Miguel de los Bancos and Cooprogreso, respectively. The remote savings system implemented by the credit union San José was temporarily suspended in the Spring of 2013 due to changes in the technology utilized by the software provider that enables the remote savings mobilization. This new software was not able to communicate with the credit union’s MIS system, and as a result mobile transactions were not registering properly. As of the date of this report this issue had not been resolved yet.

Methodology

This report synthesizes results from the assessment conducted by Freedom from Hunger with the assistance and support of three credit unions: Cooprogreso, San José and San Miguel de los Bancos. Individual surveys consisting of both close- and open-ended questions gathered information from youth participating in the program, parents of youth and credit union staff. Selection of participating youth was carried out by credit union staff.

⁵ Kast, F, S Meier and D Pomeranz. "Under-savers anonymous: Evidence on self-help groups and peer pressure as savings commitment device." IZA DP no. 6311. Discussion Paper Series, (January 2012): 22. | Karlan, D, M McConnell, S Mullainathan and J Zinman, 2010. "Getting to the top of mind: How reminders increase saving," NBER Working Papers 16205, National Bureau of Economic Research, Inc.

The study took place in the following Ecuador regions: Pichincha, Bolivar, and Los Rios. Table 1 shows the total number of participants and general profile characteristics:

Study Participant	Female	Male	Average Age	Total Number
Young person	15	11	18	26
Credit union staff	3	3	N/A	6
Parent	5	1	N/A	6
Total	23	15		38

Most of the youth participants are doing some type of work, either in a family business or as an employee, but the majority indicated that they either did not have a regular income stream or that their income did not represent a significant financial contribution in their household.

The survey for the youth consisted of three main sections:

- 1) General savings behaviors and access to financial services
- 2) Use of the technology (text messaging or remote savings)
- 3) Perceived impact of technology (text messaging or remote savings)

The surveys for the parents were shorter and focused on their role in the savings behaviors of youth (questions on who deposits into the youth savings account, whether parents give money to their children to save, how frequently they give their children money, etc). The surveys for the field staff asked questions about the savings habits of the youth (questions on frequency, amounts, account openings and use of a remote savings system). Findings from the parents and staff are weaved in throughout the report as relevant.

This study was purposefully designed to be small in scale because Freedom from Hunger was already conducting a quasi-experimental, multi-method research agenda consisting of quantitative impact studies (baseline, midline and endline), financial diaries, qualitative assessment on youth satisfaction and impact stories. A full description of those methods can be found in the final research reports for Mali⁶ and Ecuador.⁷ In addition, a comprehensive costing study was carried out to analyze the financial viability of the services in the short- and medium-term (three to five years). Freedom from Hunger staff also conducted ongoing monitoring visits during which they frequently engaged in group discussions with credit union staff. We drew data obtained from the *AIM Youth* quantitative impact study, the costing study and monitoring visits to provide additional information about specific research questions.⁸

⁶ Gash, M. "Impact of integrated financial services for young people in Mali: A comprehensive research report for the Freedom from Hunger *Advancing Integrated Microfinance for Youth* project." Freedom from Hunger. 2014.

⁷ Gray, B. "Impact of integrated financial services for young people in Ecuador: A comprehensive research report for the Freedom from Hunger *Advancing Integrated Microfinance for Youth* project." Freedom from Hunger. 2014.

⁸ For more information on the main *AIM Youth* research agenda, see B Gray, "Impact of integrated financial services for young people in Ecuador: A comprehensive research report for the Freedom from Hunger *Advancing Integrated Microfinance for Youth* project." Freedom from Hunger. 2014. | For more information on the comprehensive financial analysis, see C Loupeda, "Show Me the Money: The Costs and Revenues of Savings and Financial Education for Young People." Freedom from Hunger. *Forthcoming* in 2014.

Given the participants chosen, in almost all cases youth with access to the remote savings system did not have access to text messages and vice versa, thus providing a useful comparison group of users vs. non-users.

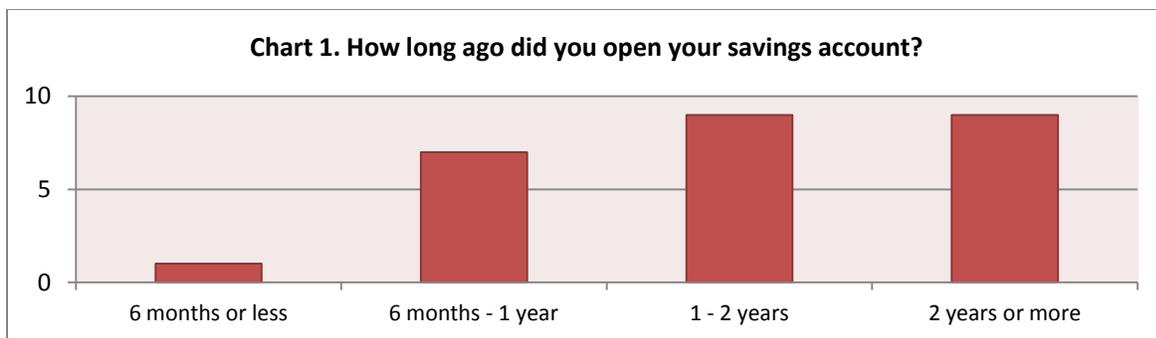
One key limitation to consider is that the credit unions were not able to provide actual deposit data from their management information systems that would differentiate deposits made at the branch versus deposits made via Smartphones. Similarly, there was no data available on the savings balances of the youth who received the text messages. As a result, the study offers *estimates* on savings made through the remote system and text messaging based on the responses from participants about their perception of the technology.

Survey Results

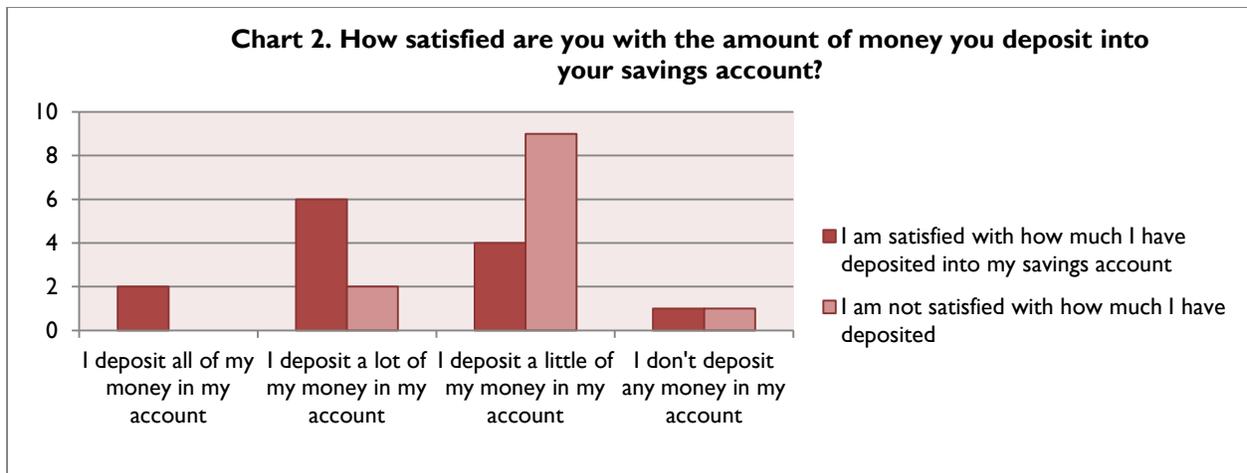
General savings behaviors

The first part of the study focused on determining general financial behaviors of young people, primarily related to saving in a credit union account.

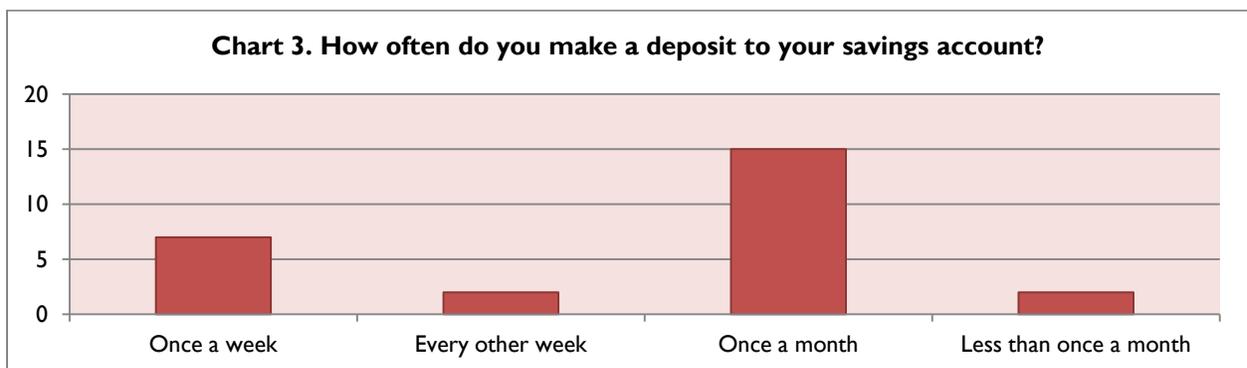
All of the participants had a savings account at one of the participating credit unions. The majority of the participants had their account for at least one year. Chart 1 shows how long the savings accounts had been open at the time of the study:



All of the participants indicated that having a savings account has had a positive impact in their lives. However, only half of the participants indicated being satisfied with the amount they had saved in their accounts. Those who reported higher levels of satisfaction indicated saving much of their money in their account (see Chart 2).



When asked about the frequency of deposits, the majority of the participants (93%) indicated saving *at least* once a month (see Chart 3). Field staff's responses were in line with those of the youth, as the majority of staff reported a monthly deposit by the youth. Data from the Global Financial Inclusion Database also shows that 86 percent of youth (15 to 24 years old) with a formal account make at least one deposit per month.⁹



To determine the role that distance to the credit union plays in the savings behaviors of youth, we asked participants their perception on how far away they considered the credit union to be, how they traveled to the credit union, and the cost of traveling to the credit union (when taking public transportation).

The majority of the participants indicated living somewhat close to the credit union, though approximately half of the participants take public transportation to the credit union. Traveling to the credit union costs youth on average US \$0.72. However, when asked if visiting the credit union was difficult and why, the majority of youth who confirmed some difficulty in going to the credit union, gave *time* as the main reason, followed by money. There was no close correlation between the distance to the credit union and the frequency of deposits.

⁹ World Bank. Global Financial Inclusion Database. <http://datatopics.worldbank.org/financialinclusion/> Accessed June 15, 2014.

We also asked youth to indicate who made the deposits to their savings accounts. Half of the youth affirmed *they* made all of the deposits to their savings account, whereas one-third indicated that sometimes their *parents* made the deposits. The remaining youth indicated that their parents made all of the deposits for them. The average age of youth who made deposits on their own was 20 years, whereas youth whose parents were involved were on average 16 years old. Most of the parents also reported giving money to their children to be saved into the youth accounts.

These results are consistent with the *AIM Youth* quantitative impact study, which found that about half of the youth make the deposits, whereas the other half have their parents make the deposits (see Table 3).

	Treatment	Comparison
Young person deposits money in savings account	56%	83%**
Parent deposits money in savings account	41%***	9%

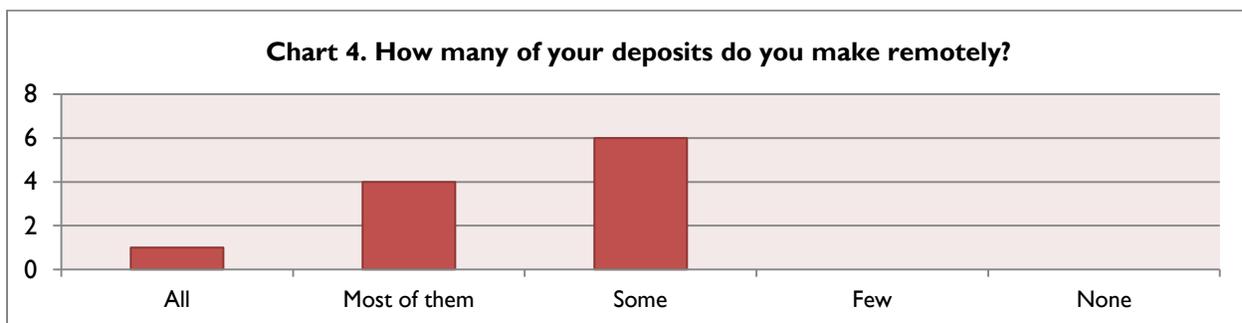
Significant difference between treatment and comparison outcomes: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Youth were asked whether they felt they had control over their savings account. The majority noted that they did feel they had control because they could make their own withdrawals. Only a few youth said that their parents had control over their savings.

Use and Impact of the Technology on the Financial Behaviors of Young People

1) Remote Savings

Among the youth with access to the remote savings system, half noted that they make only *some* of their deposits via the remote savings system (see Chart 4). Responses from field staff are consistent with these findings. Half of the staff indicated that youth *with access* to the remote savings system tend to use it more, and the other half said that youth deposit more frequently at a branch. It is worth pointing out that during a monitoring visit prior to this survey, credit union staff had indicated that very few youth actually make savings deposits remotely after the financial education sessions are delivered.



According to staff, when they conduct field visits with the remote savings system to the homes or businesses of adults with programmed savings, the parents are the ones depositing more frequently into their children's youth savings accounts—approximately twice per month.

In general, when comparing the frequency of making deposits of those who use the remote savings system to those who do not use it, there is no difference—for both groups, the majority report making a deposit at least once a month.

When youth were asked who made the remote savings deposit, answers were consistent with another survey question asking who made savings deposits in general: the youth who reported making their own savings deposits in general also make their own deposits via the remote savings system.

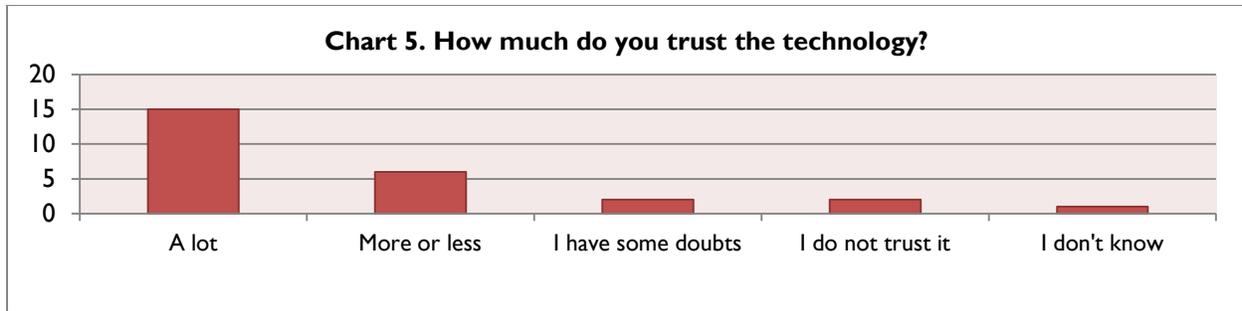
In terms of amounts, staff were asked about the amount youth and parents save when they collect the remote savings.¹⁰ Staff affirmed that each time parents make the deposits the amounts tend to be about \$5; whereas youth deposit between \$1 and \$2, with a few depositing slightly larger amounts. However, according to the findings from the *AIM Youth* quantitative impact study, youth reported depositing on average \$29.54 (\$25.80 for the comparison group). The large discrepancy might be explained by three factors. First, we know from the *AIM Youth* qualitative study that youth reported feeling embarrassed at making small deposits.¹¹ We also know very few youth in the *AIM Youth* impact study reported having access to a remote savings system (only 4%), so those youth who did not have access to the remote savings system are likely making deposits at a branch. Given the cost of transportation, youth might only bother making a deposit at a branch with a larger amount of money, whereas with the remote savings system it might be convenient enough to make even a very small deposit. Next, older youth, especially over 18 years old, might be making larger deposits because they have a greater income generating capacity.¹² Finally, since parents play a major role in the deposits of their children, the larger deposit amounts might also partially reflect amounts deposited by parents.

When youth were asked about their confidence in the technology, the majority noted having a high level of trust; with only a few having some reservations about the system (see Chart 5). Additional questions on this topic revealed that those who have concerns about the technology fear mistakes in the system. Parents also expressed a high level of trust in the technology being utilized.

¹⁰ The survey for youth did not include a question on savings amounts as we believed that we would obtain more accurate data from the field staff, especially since we knew youth might feel embarrassed about the amount of money they can save.

¹¹ Gray, B. "Impact of integrated financial services for young people in Ecuador: A comprehensive research report for the Freedom from Hunger *Advancing Integrated Microfinance for Youth* project." Freedom from Hunger. 2014.

¹² For more information on age and income, see Ramirez, R. and Candace Nelson. "Models for integrating financial services with financial education for young people: Lessons learned from the *Advancing Integrated Microfinance for Youth* initiative." Freedom from Hunger. May 2014.

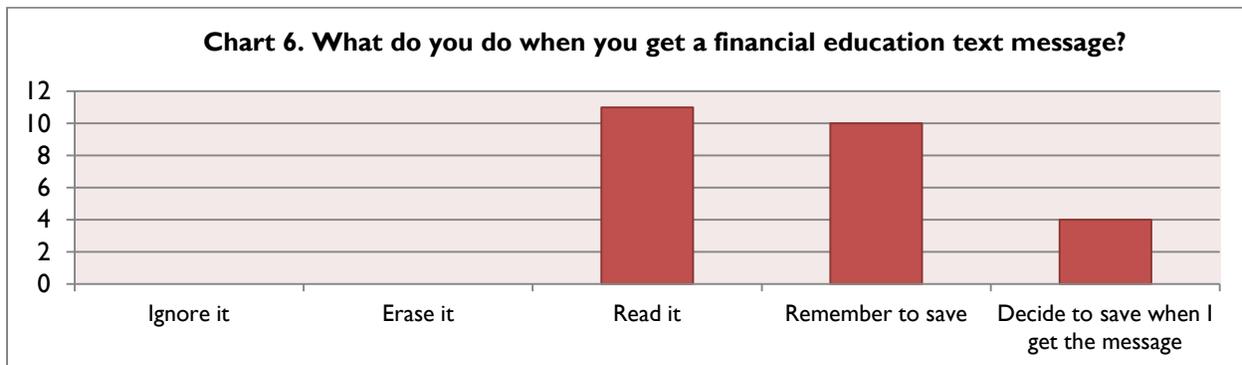


2) Text Messaging

We first asked youth about their access to and use of cell phones. A majority of the youth reported having a cell phone, and of those owners, the majority indicated making the purchase themselves. The remaining youth had their cell phones given to them by their parents or another adult relative. Most of the youth who did not have a cell phone had access to one through another person, usually a parent or older sibling. There was no difference in the average age of youth with access to a cell phone.

The average cost of the cell phones was \$233, and it took on average three months for youth to save the money for the purchase. Most of the youth purchase pay-as-you-go cards at least once a week that allow them to use their cell phones for a fixed amount of time.¹³

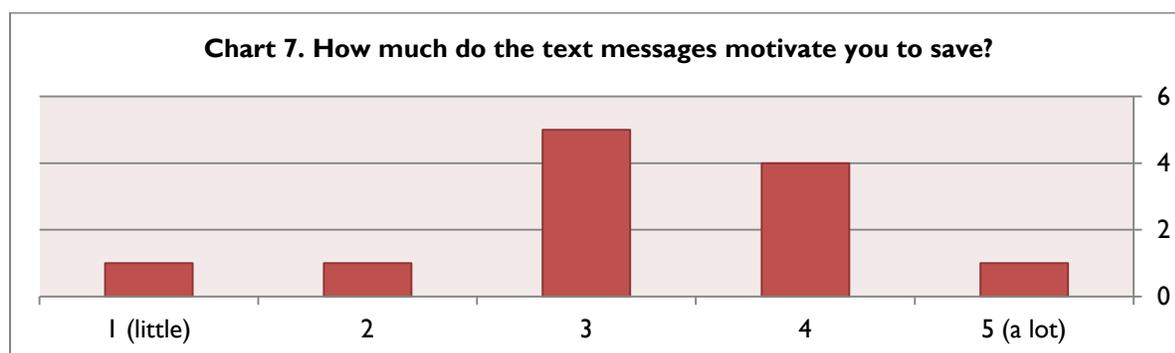
Among the youth receiving text messages (those with cell phones and with an account at a credit union offering the service), the general consensus of the messages among recipients is that the messages offer good advice, with only one person noting that the messages seemed too basic. The majority reported reading the message and feeling motivated to save, but only half reported deciding to save as a result of the text message (see Chart 6).



Two follow-up questions on the extent to which the text message influences youth to save showed similar tendencies: on a scale from 1 to 5 (with 5 being the highest influence), the average level of influence was 3.25; half of the recipients indicated that the messages exerted a great deal of influence

¹³ In the survey, we did not ask which type of phone was purchased (Smartphone vs. regular phone) or whether the pay-as-you-go cards included data.

on their deposits, but the remaining youth indicated that some the messages influenced them, but others did not.



Costs and Benefits of the Technology for the Youth and Financial Institutions

1) Remote Savings

For the cost-benefit analysis of the remote savings system, data was drawn from the credit union San Miguel de los Bancos.¹⁴

Total first-year costs for acquisition and utilization of the system, which involved purchase of the Smartphones, portable mini-printers and a monthly connectivity charge are shown in Table 4.

Hardware Expense (3 Smartphones and portable mini-printers)	\$2,374.40
Annual Connectivity Charge (12 months)	\$3,360.00
Total	\$5,734.40

Table 5 shows the first-year costs amortized over three years, along with annual connectivity expenses for two more years for a total five-year period.¹⁵ Because of the approach implemented by the credit unions, in which staff members bring the Smartphones during their regular field visits, staff costs for implementing the remote savings collection are difficult to disentangle from the rest of the services. In fact, the use of the Smartphones in collecting savings might result in time efficiencies when compared to the time taken to fill out a deposit form. Thus, for this analysis we focus only on the implementation and annual connectivity expenses, along with the interest to be paid on the collected savings (3% annual interest paid by San Miguel de los Bancos).

	2012	2013	2014	2015	2016
Implementation and Connectivity Expenses	3,078.20	6,438.20	6,438.20	3,541.44	3,732.68

¹⁴ There were no cost data available for the remote savings system implemented by San José.

¹⁵ We assumed an annual inflation rate of 4.1 percent. Source: World Bank databank: <http://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG>. Accessed June 20, 2014.

The next step in this analysis is calculating the *additional* amounts that might be generated by the remote savings system. One important consideration is the approach implemented by this credit union to reach out to youth. In order to increase the uptake of savings accounts, the credit union significantly slowed the number of financial education sessions that field staff were conducting and devoted more time to promoting the accounts. This strategic decision has implications on the opportunities young people have to tap into the remote savings system.

For this analysis, we made several assumptions. First, of the youth savings account holders (ages 13 to 24) of San Miguel de los Bancos, 68 percent are under the age of 18. We assume these youth might have access to the remote savings system primarily when field staff visit schools to facilitate financial education sessions (ten sessions over approximately three months). So we count only the incremental number of youth who participate in the financial education every year. In terms of frequency of deposit, we draw from interviews with the field staff in which they indicated that youth usually deposit usually only once per month. An important assumption is that this deposit is in addition to deposits they might be making at the branch.

For the older youth, we assume that they will at least have once-a-month access to make a monthly deposit, as field staff conduct visits to their homes or businesses. Given there is ample evidence on the role of parents in the financial lives of young people,¹⁶ we also take into account deposits made by the parents. Based on survey results, parents appear to make a deposit into their children’s savings accounts twice per month. We also estimate that only one-half of the youth account holders (under 18 years old) have parents who make a deposit into their accounts.

Finally, in terms of amounts that are deposited, staff report that most youth deposit small amounts of money, between \$1 and \$2. However, as indicated earlier, older youth might deposit higher amounts. Therefore, we estimated an average deposit of \$2 for youth under 18 years old and \$5 for youth over 18 years old. We also estimate parents might deposit larger amounts, \$5 on average.

Using these findings as a baseline, Table 6 shows an estimation of the value using the remote savings system to collect deposits. The calculations include the revenues that could be generated from the savings balances as capital available for loans.¹⁷

	2012	2013	2014	2015	2016
Number of Youth (18+) with a Savings Account	42	208	249	299	359
Average Savings Deposit Amount	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Annual Frequency of Deposits	12	12	12	12	12
Approximate Savings Amounts Collected from Youth (18+) via Remote Savings	\$2,520.00	\$12,470.40	\$14,964.48	\$17,957.38	\$21,548.85

¹⁶ For more information on the role of parents in the financial lives of young people, see Ramirez, R and V Torres. “From One Generation to the Next: The Role of Parents in the Financial Inclusion of Young People.” Freedom from Hunger. 2014.

¹⁷ Average Portfolio Yield for San Miguel de los Bancos is 17.17 percent. We applied this yield to 80 percent of the average deposits available for on-lending, which is consistent with the percentage being utilized by the other AIM Youth partners in Ecuador.

Number of Youth (under 18) with a Savings Account	89	442	530	636	763
Average Savings Deposit Amount	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
Annual Frequency of Deposits	3	3	3	3	3
Approximate Savings Amounts Collected from Youth (under 18) via Remote Savings	\$535.50	\$2,114.46	\$529.99	\$635.99	\$763.19
Approximate Savings Deposit by Parents	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Frequency of Deposits by Parents	24	24	24	24	24
Approximate Savings Amounts Collected From Parents via Remote Savings	\$5,355.00	\$26,499.60	\$31,799.52	\$38,159.42	\$45,791.31
Total Savings Deposits Collected via Remote Savings	\$8,410.50	\$41,084.46	\$47,293.99	\$56,752.79	\$68,103.35
Total Revenue from On-lending	\$1,241.91	\$6,066.61	\$ 6,983.53	\$8,380.23	\$10,056.28

Table 7 combines the costs for the remote savings system, the interest paid on the remotely collected savings, and the revenues that can potentially be generated. As presented earlier, the approach taken by the credit unions in utilizing the remote savings system does not seem to generate additional costs of staff time, transportation or even marketing and administration, and might even generate some time efficiencies. According to this analysis, the revenues from the remote system can reach a break-even point after three years. Since the system is utilized to collect savings from adult accounts as well, it is likely that the costs of the system might be defrayed much earlier when revenues from more profitable products are included.

	2012	2013	2014	2015	2016
Cost of Remote Savings System	\$1,911.47	\$5,409.23	\$5,552.63	\$3,790.46	\$4,451.38
Interest Payment on Generated Savings from Remote System	\$252.32	\$1,232.53	\$1,418.82	\$1,702.58	\$2,043.10
Revenue from On-lending of Savings Collected via Remote Savings	\$1,241.91	\$6,066.61	\$6,983.53	\$8,380.23	\$10,056.28
Profit (Loss)	\$(921.87)	\$(575.15)	\$12.07	\$2,887.19	\$3,561.80

2) Text Messaging

This analysis of costs and benefits of the financial education text messages draws only from the system implemented by Cooprogreso.¹⁸

The initial and annual costs for implementing the text-messaging system, which assumes a weekly message to account holders, are listed in Table 8. Although the software that was utilized was purchased specifically as a result of the *AIM Youth* project, the system is being used by the credit union for all clients. For example, it is using the system to send reminders of dates loan payments are due as well as promotional messages on financial products.

¹⁸ The text-messaging system implemented by San Miguel de los Bancos involved an adaptation of their current system and does not reflect the full costs of implementation, and as a result was not included in this part of the cost-benefit analysis.

Software Expense	\$10,080.00
Approximate Annual Expense for Sending Out Messages	\$4,426.24
Total	\$14,506.24

Table 9 breaks down the expenses over a three-year period and adds the annual expenses for two more years for a total of five years.¹⁹

	2013	2014	2015	2016	2017
Implementation and Annual Expenses	7,786.24	8,025.26	8,277.18	5,182.71	5,462.57

For the revenues generated by the text messages, we know from the survey that half of the youth are prompted to save after receiving a text message with a savings reminder. However, for this analysis we assume a more conservative figure, estimating that only 25 percent of youth will be prompted to make a deposit. Since youth indicated that only some of the messages exert significant influence on them, the calculation assumes that the messaging will trigger only one additional deposit per month. We also estimate that text messages will be sent weekly over a year's period. The last assumption is that the amounts to be deposited take place at a branch, since this credit union had not yet implemented a remote savings system. Given the cost of traveling to a branch and that youth are reluctant to visit a branch to deposit a small amount of money, we assume the amounts will be \$5 on average, a larger amount than those that are deposited through a remote system.

As with the financial analysis of the remote system, we assume that the savings balances will be available for on-lending and will generate revenue. Although some of the text messages were received by parents when they co-signed for the children, the text-message reminders were designed specifically for the youth account holders, so a deposit from the parents resulting from the reminders may not be forthcoming.²⁰ Table 10 shows the potential revenues from the text messaging.

	2013	2014	2015	2016	2017
Average Number of Youth Savings Accounts	1,216	1,338	1,471	1,618	1,780
Approximate Savings Deposit by Youth	5.00	5.00	5.00	5.00	5.00
Annual Frequency of Deposits by Youth	12	12	12	12	12
Approximate Savings Amounts Resulting from Text Messaging	18,240.00	20,064.00	22,070.40	24,277.44	26,705.18
Revenue from On-lending Savings	1,898.42	2,088.26	2,297.09	2,526.80	2,779.48

¹⁹ Inflation rate 4.1 percent

²⁰ Credit union management have indicated that the savings account applications sometimes include only the phone number of the parent, we do not have sufficient data from the parents to include in this financial analysis. In addition, the text messages were written specifically to motivate youth to save.

Finally, Table 11 shows that the revenues that might be generated from the text messaging are not enough to cover the initial or ongoing costs. Since Cooprogreso’s youth services as a whole have the potential to breakeven after three years,²¹ there is some potential for the technology costs to be cross-subsidized, though that could delay the breakeven point for all of the youth services.

	2013	2014	2015	2016	2017
Cost of Text Messaging	7,786.24	8,025.26	8,277.18	5,182.71	5,462.57
Interest Payment on Generated Savings	273.60	300.96	331.06	364.16	400.58
Revenue from On-Lending of Savings	1,898.42	2,088.26	2,297.09	2,526.80	2,779.48
Profit (Loss)	(6,161.42)	(6,237.96)	(6,311.15)	(3,020.07)	(3,083.68)

Analysis

Overall, both the remote savings system and the text messaging seem to exert a positive influence on the savings behaviors of the youth account holders. While a few youth expressed concern about potential mistakes in the technology, especially in collecting savings, there seems to be a strong level of trust in the technology innovations being implemented by the credit unions to promote savings.

The convenience of the remote savings system seems to be a critical factor in helping youth save, especially taking into account the small amounts they might be able to deposit and that they might not bother depositing at a branch. While youth do not appear deterred as much by the cost of reaching a credit union branch, the time to get there seems to be a major issue.

There is a possibility that the remote savings mobilization could have a substitution effect, in which youth make a deposit remotely *instead* of at a branch, and thus not result in an additional deposit. Given the different amounts that might be deposited at a branch versus the amount deposited remotely, this substitution effect might be minimal. In addition, given that the credit unions experienced extensive account inactivity in the early stages of the project, it is more likely that the remote savings system has actually encouraged youth to make deposits.

The cost-benefit analysis of the remote savings system suggests that the savings captured from the youth were insufficient by themselves when implemented on a small scale to cover the expense of the system in the short term. However, the approach implemented by the credit unions, in which the field staff devote a small percentage of their time to the youth services, with the bulk of their time devoted to more profitable products aimed at adults, ensures that the costs of the system do not have to rely exclusively on the financial revenues generated by youth. In essence, the more profitable adult products can subsidize the time and costs in offering the services to young people. Since the credit unions are banking on those youth to become their credit clients of the future, this strategy reflects an investment for the future of the financial institution.

²¹ Loupeda, C. “Show me the money: Costs and revenues of youth savings and financial education services offered by credit unions in Mali and Ecuador.” Freedom from Hunger. May 2014.

In contrast, the financial analysis for the text messaging suggests that the revenues from youth savings alone are insufficient to cover initial or ongoing expenses. Since the costs of the messages will grow with the number of accountholders who receive the messages, the financial viability of the system would need to prompt larger savings amounts or more frequent savings.

The text-messaging system, however, might be financially sustainable to the extent that the text messages sent to adults as loan reminders or promoting other financial products result in additional revenues. Equally important, given the significant role parents can play in building the savings balances of their children, sending text messages to the parents encouraging them to make deposits to their children's accounts could make a difference in making the system financially sustainable.

Conclusion

The convenience and perceived level of security of the remote savings system seems to be having a positive influence on the youth, prompting them to save even small amounts of money in a savings account, which they might not do otherwise. The remote savings system also has the best cost-effectiveness potential of the two technologies that were analyzed.

Text messages with financial education reinforcement concepts are also being positively received by youth. While the financial viability of the text-messaging system is not achieved with revenues generated only from financial education messages to young people, the analysis did not include proceeds from other uses, including loan payment reminders to adult clients.

This analysis is consistent with overall conclusions from the *AIM Youth* project, which suggests that programming aimed at young people to develop their financial inclusion and capability should incorporate parents more purposefully and directly, given the critical role they play in the financial lives of their children.²²

While the findings are overall positive in terms of the perceived impact of the technology in the savings behaviors of young people, it is critical to consider the context of this study. Ecuador is a country with a high level of mobile-phone penetration, where there is a solid infrastructure in place, which is strengthening over time. As a result, there is a high level of trust in the technology, especially among young people. This might not be the case in countries where the access and use of mobile phones is still limited.

As coined by the New America Foundation's report on technology and youth savings, there is a "buzz" about the use of technology to promote financial inclusion for young people, but little information is available to determine its real effectiveness.²³ In addition, if financial institutions are to implement new technologies, they must be cost effective, especially as funds from donors are usually only available for new demonstration projects. This study, while small in scale, offers some

²² Ramirez, R. and Veronica Torres. "From One Generation to the Next: The Role Of Parents In The Financial Inclusion of Young People." *Freedom from Hunger*. May 2014.

²³ Zimmerman, Jamie; Julia Arnold; Elizabeth Carls; Lex Nowak; and Vinay Rao. *Beyond the Buzz: The Allure and Challenge of Using Mobile Phones to Increase Youth Financial Inclusion*. New America Foundation. September 12, 2013.

insights into the costs and benefits of utilizing two different types of mobile phone technologies – remote savings system and text messaging – to promote youth savings. There is certainly a need for more extensive studies on the impact of technology as well as cost-benefit analysis over a longer period.

Annex A

Sample of Financial Education Text Messages

1. How much do you spend on soda and candy? A lot! Save that money and buy yourself something special in six months!
2. How much more do you need to attend University? Save 50 cents today to reach your goal!!
3. Do you have dreams for your future, like traveling? Then save one dollar TODAY to make that dream come true!
4. You do not have money to save? Put aside 25 cents per day and by the end of the week you will have \$1.75.
5. When saving, every penny counts! You could buy yourself a computer, an iPod or even a new cell phone. Save now!
6. Have you thought of starting a business one day? You can do it! Reach your goal by saving your lunch money or wages every day.
7. Do you want to help your younger siblings? Teach them the importance of saving, even if it is only 10 cents! They will thank you.
8. Have you opened your own savings account? What are you waiting for? Do it now! You are smart; keep your money safe from the temptation to spend it.
9. Make a monthly budget to manage your income and expenses. And you will find out how much you can save.
10. Get started! Save just 25 cents today and you will have \$5 per month. In one year, you will have \$60!