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Financial Education via Television Comedy*

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Abstract

We show that television may be able to deliver rudimentary financial literacy in a cost effective manner. In a controlled experiment, Cambodian garment factory workers were randomly allocated into one of three treatments: no video (baseline), slideshow, and comedy TV show. After the intervention the participants were requested to answer a set of questions on financial knowledge and attitudes to examine whether individuals were able to internalize the information that was provided. Our results show that participants randomly assigned to the comedy show are significantly more likely to report that they are interested in obtaining more information on savings account and are also significantly more likely to open a savings account in the next 6 months. This method of delivery may prove effective particularly for disadvantaged sections of the population.

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1. Introduction

How best to increase financial literacy and consequently foster financial inclusion in developing countries is unclear. Television may be able to deliver rudimentary financial literacy to those most disadvantaged in a cost effective manner. The promise of broadcast TV is that the financial education it delivers may prove effective, as it will be accessible, memorable, and entertaining to a large audience of those normally excluded from financial services, particularly those belonging to disadvantaged sections of the population and those living outside the major cities.

We evaluate the efficacy of broadcast TV to deliver financial literacy. The hope is that seamlessly embedding financial literacy in a popular television comedy will lead to a number of positive outcomes: first, households will obtain an introduction to the basic financial literacy they need; second, the advantages of the financial services introduced will, once they become apparent, prompt people to pursue more knowledge about these financial services; and finally, rural households, which are most disadvantaged, will have equal access to this broadcast television comedy.

The Cambodian Microfinance Association (CMA), in conjunction with the research team, produced a 5-minute skit that will ultimately be a part of a highly rated weekly comedy show in the country. The show involves a storyline mainly focused on concepts relating to financial knowledge, loan management, and savings. An advance video of the episode was shown to randomly selected garment factory workers during their lunch break. This relatively new and un-tested method has the potential to provide basic financial education to a large portion of the population at relatively low cost compared to alternative delivery methods, such as lectures and town hall meetings. A second randomly selected group of garment factory workers were shown a financial literacy slideshow video, which covered roughly the same material, but did not have any comedy content. After watching the respective videos, the participants were asked to participate in a survey to collect information on their financial knowledge and attitudes towards different financial products. The results were compared to that of a baseline group, which consisted of a third randomly selected group of garment factor workers who did not watch any video, but participated in the same survey as participants in the two treatment groups. Our experimental design, which is similar to that used by Berg and Zia (2013), therefore has

two possible advantages. First, it examines whether television comedy can be used as an effective medium to provide financial education to a wide group of people. Second, it compares the relative effectiveness of novel media-based financial educational programs with a more standard method of delivery of financial education.

The financial topics that were covered in the video and the slide show included debt, savings accounts, and microfinance business loans. The survey results indicate changed attitudes to some of the topics covered. We find evidence that attitudes to savings accounts were significantly different for those who viewed the comedy show compared to those assigned to the control and the slide show. This is not surprising, as thirty percent of the video was devoted to savings accounts. Despite the recent promotion of savings accounts by policymakers and governments in developing countries, who are interested in using them for "transfer payments" (see for example the *Pradhan Mantri Jan Dhan Yojna*—PMJDY—program in India), barriers preventing take-up of savings accounts in the developing world including access (e.g., proximity of branches, onerous paperwork) and business issues (e.g., lack of profitability of savings accounts providing disincentives to banks to offer them) continue to exist. In Cambodia, the location of our project, most garment factory workers could see the immediate benefit of savings accounts after watching the video and were interested in pursuing more information about them. Furthermore, it appears that the video was more effective than the alternative delivery approaches in piquing workers' interest in savings accounts.

There is now considerable evidence (both anecdotal and survey based) on the impact of mass media on behavior. The focus of a large part of this literature has been to evaluate the impact of mass media on behavior relating to health and education. One of the most successful public health campaigns in Egypt had a soap opera as one of the central components. This campaign was successful in improving the use of Oral Rehydration Therapy (ORS), which reduced infant mortality rate by approximately 70% (see Abdulla (2004)). Jensen and Oster (2009) argue that the introduction and spread of television in rural India has been associated with a decrease in violence against women, while Verner and Cardoso (2007) argue that in Brazil the introduction of television has been associated with increased use of contraception and lower adolescent drug use. In South Africa, Berg and Zia (2013) find that individuals who were randomly assigned to watch a soap opera with financial

messages had significantly higher financial knowledge of the issues highlighted in the story line and also messages delivered by the leading character.

If the success of broadcast TV and entertainment to generate interest in savings accounts can be translated to other financial services then our study may spur further embedded financial literacy in entertainment using broadcast TV. The successful use of financial education through entertainment media has broad implications for the delivery of financial education. It demonstrates that it could be an engaging and cost-effective way to educate a broad range of people in developing countries around the world on financial matters.

2. Experimental Design, Sample and Sample Characteristics

Participants in the experiment were randomly allocated into one of three treatments: no video (baseline), slideshow and comedy. All presentations were conducted in garment factories located in the Special Economic Zones located within 50 km of the capital city of Phnom Penh. The sessions were all organized with the assistance of the "Cambodian Women for Peace and Development," an NGO that organizes videos relating to topics like health awareness and HIV prevention to be shown in these factories.

The comedy treatment consisted of showing a video that was produced by the Cambodian Microfinance Association. Ultimately, this video will be shown as a pre-recorded segment in a Saturday evening television show. This is one of the most popular television timeslots in the country, with approximately 20% of the country's viewers watching during this period. The episode has not yet been broadcast at the time of writing this report. Figure 1 presents the environment in which the experiment and the survey were conducted.

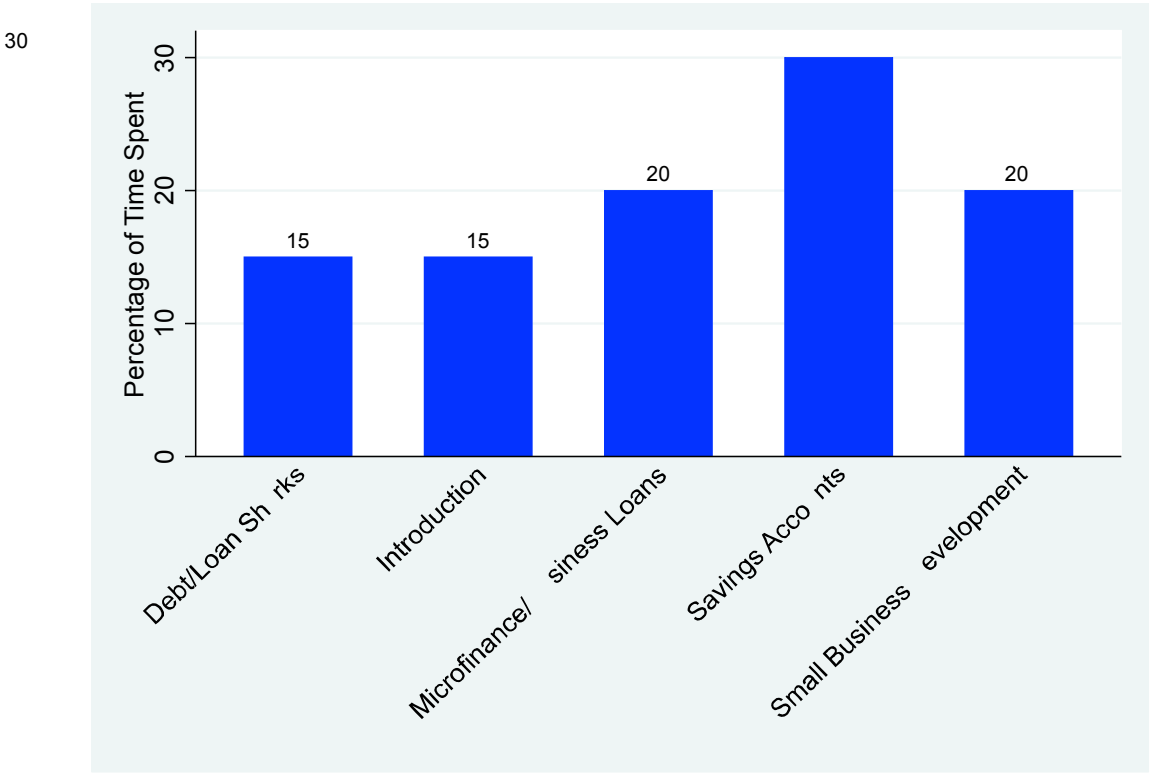
The episode involved a storyline focusing on loan management and savings. Figure 2 presents the percentage of time spent on each component of financial literacy. The slideshow treatment included a slideshow presentation prepared by the Cambodian Microfinance Association. The length of the presentation was the same as the video and the presentation covered similar topics as the video. A second episode, which will focus on mobile money, is currently under development.

Figure 1: Screening of videos in garment factories

After the comedy video or slideshow video was complete, the participants were requested to answer a set of questions. These questions were designed to obtain information on financial knowledge and attitudes and also whether individuals were able to internalize the information that was provided through the comedy show and the slideshow video. A portion of the survey utilized

the Trans Theoretical Model (TTM) of Behaviour Change (see Xiao, et al. (2004)). The idea behind TTM is to guide the development of a series of outcome measures that capture incremental behavioral change. The appeal of TTM is that it provides a theoretical framework for thinking about the process through which individuals move towards action. The framework defines stages through which individuals move as they progress toward change and thus also defines the processes necessary to achieve and sustain behavior change. In constructing these stages, TTM structures the relationships between attitudes, intentions, and behavior, creating incremental measures of action useful for evaluating interventions. A team of research assistants conducted the surveys and each survey took approximately 20 minutes. The surveys were all conducted in Khmer on Samsung tablets using Open Data Kit (ODK) software.

Figure 2: Time Allocation to different aspects of financial education in the video



Garment factory workers were selected as respondents for a number of reasons. Firstly, they represent a relatively uneducated group of individuals who might benefit from being financially more literate. Secondly, the video may generate a greater impact on financial literacy, given the relatively low financial literacy in this cohort. Finally, having respondents all in one location, the garment

factory, allowed an enclosed screening of the video and the slide show and an environment that facilitated data collection, while maintaining the privacy of the participants.

A total of 177 men and women participated in the sessions: 86 in the comedy treatment, 40 in the slideshow treatment and 51 in the control treatment. Sample averages are presented in Table 1. Approximately 88% of the participants in the experimental sessions were women and the average age of the participants is around 28 years. Approximately, 44% of the participants have no children and 81% of the participants have completed primary schooling with 19% having completed secondary schooling. Table 1 also presents the sample averages for individuals assigned to the three treatments. With the exception of the proportion of the population having no children, which is significantly higher for the control (no video) group, the Kruskall-Wallis (K-W) statistic presented in column 5 of Table 1 does not offer evidence that participant characteristics were systematically different across the three groups.

Table 1: Sample averages by treatment

	All (1)	**Comedy (2)**	**Slideshow (3)**	**Control (4)**	**K-W Statistic (5)**
Female	0.876	0.849	0.850	0.941	2.806
	(0.331)	(0.360)	(0.362)	0.238	
Age	27.831	28.407	28.500	26.333	3.039
	(5.905)	(5.999)	(6.820)	4.698	
Children Missing	0.141	0.163	0.100	0.137	0.892
	(0.349)	(0.371)	(0.304)	0.348	
Children = 0	0.441	0.337	0.400	0.647	12.745***
	(0.498)	(0.476)	0.496	0.483	
Children = 1	0.158	0.174	0.200	0.098	2.069
	(0.366)	(0.382)	0.405	0.300	
Children = 2	0.186	0.244	0.175	0.098	4.527
	(0.391)	(0.432)	0.385	0.300	
Children > 2	0.073	0.081	0.125	0.020	3.793
	(0.262)	(0.275)	0.335	0.140	
Years of Schooling <= 5	0.186	0.174	0.250	0.157	1.433
	(0.391)	(0.382)	0.439	0.367	
Years of Schooling 6 – 10	0.605	0.628	0.500	0.647	2.397
	(0.490)	(0.486)	0.506	0.483	
Years of Schooling > 10	0.192	0.186	0.225	0.176	0.377
	(0.395)	(0.391)	0.423	0.385	
Ownership of Television	0.718	0.698	0.750	0.725	0.389
	(0.451)	(0.462)	0.439	0.451	
Sample Size	177	86	40	51	

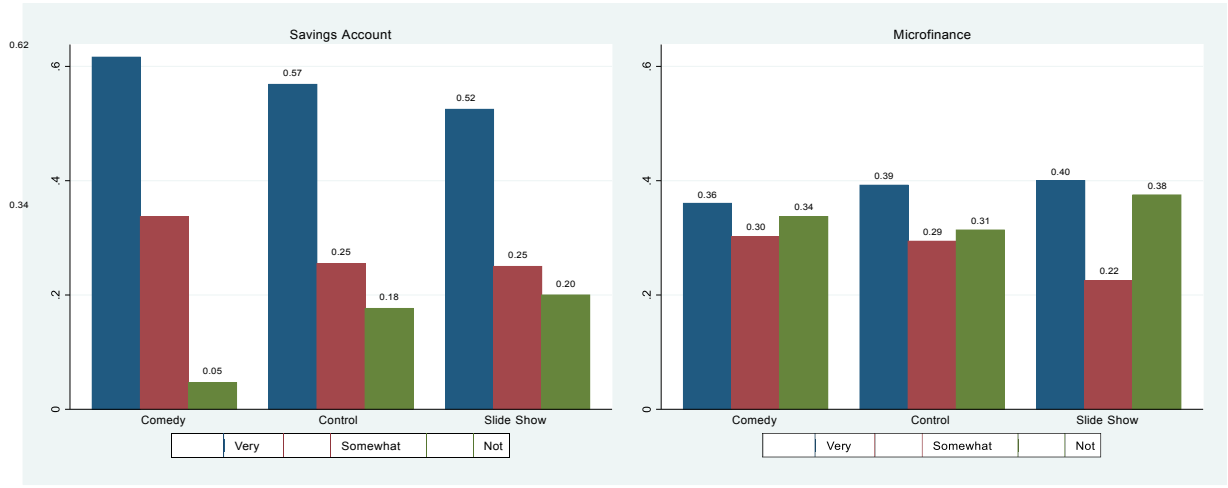
Notes: Standard deviations in parenthesis. *** $p < 0.01$, ** $p < 0.05$, *$p < 0.10$. Kruskal-Wallis (KW) Statistic is distributed as χ^2 with 2 degrees of freedom.

3. Results

Next we examine the impact of the different treatments on financial literacy and attitudes towards financial wellbeing. The questions that were asked of participants were related to different areas of financial literacy, including: general financial knowledge, savings accounts, mobile money, credit and loans, and remittances and money transfer. What follows are the most important results.

There are clear signs of increased attraction to savings accounts following the screening of the comedy video. Out of those who watched the comedy show only 5% are "not interested" in savings accounts afterwards compared to 21% of slideshow video viewers and 18% in the control group (see Figure 3). Both "very interested" and "somewhat interested" scores were higher for individuals assigned to the comedy treatment compared to those assigned to the slideshow or the control treatments. As the results presented in column 1 of Table 2 shows, the likelihood of reporting interested or very interested is almost 14 percentage points (or 17 percent) higher in the comedy treatment than in the control treatment and almost 18 percentage points (or 19.5 percent) higher than in the slide show treatment.

Figure 3: How interested would you be to obtain more information on …



For the savings account it is clear from Figure 3 that the comedy show was more successful in generating interest than the slide show approach (relative to the control group). There is, however, no differential treatment effect on interest in microfinance. This is despite the fact that a large portion of the comedy video and the slide show was devoted to articulating the benefit of microfinance (especially for small business) 36 percent of comedy viewers, 38 percent of slideshow viewers and 32 percent of

those in the control treatment replied that they are "not interested" in microfinance loans for business. Similarly, over 70 percent of respondents in each group said they would not take out a loan in the next 6 months. This is corroborated by the regression results presented in column 2 of Table 2.

We should not be surprised with these results. After all, the twenty percent of the video devoted to microfinance was exclusively for microfinance business loans, not personal loans. It stands to reason that Cambodian garment workers would not be particularly interested in business loans, as they are employees of the garment industry. They might be not very interested in starting a business, according to the surveys, and therefore would have no need for such loans.

Table 2: Treatment Differences in Interest in Information on Savings and Microfinance

Interested in Savings	**(1)**	**Interested in Microfinance (2)**
Treatment: Slide show	-0.022	-0.136
	(0.057)	(0.109)
Treatment: Comedy	0.139***	-0.071
	(0.054)	(0.086)
Average for Control Treatment	0.824	0.686
Equality of Effects Comedy = Slide show χ^2 (1)	7.62***	0.43
Sample Size	177	177

Notes: Marginal effects from probit regressions are presented. The dependent variable takes the value of 1 if the participant responded that (s)he was interested or somewhat interested in obtaining more information on savings account (Column 1) and microfinance and microloans (Column 2). Regressions control for individual level characteristics (age, gender, number of children, level of schooling and ownership of television). Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, *$p < 0.10$.

The video was effective in changing attitudes to savings accounts but less so in terms of microfinance loans. Further examination of the survey data reveals why this may be the case. Both savings and loans respondents were asked why they had never used the products. For savings over 16 percent of all respondents said it was because they previously had no knowledge of savings accounts. On the other hand, less than 3 percent replied they previously had no knowledge of microloans. Over 64 percent replied they had never needed a microloan, with only 20 percent of all respondents ever having previously taken out a microloan. This deeper examination suggests that a large number of respondents have knowledge of microloans but simply feel that they have no need for them. Other

reasons for not borrowing included the cost of interest (7 percent), the belief that MFIs are expensive (6 percent), fear of repayment (5 percent), and lack of collateral (2 percent).

This means that regardless of the information delivery mechanism (i.e., entertainment or slide show), we would not expect to see a strong effect due to the lack of intrinsic interest in microfinance business loans.

The results presented in Figure 4 and also in Table 3 indicate that individuals randomly assigned to the comedy treatment report that they are significantly more likely to have their own savings account in the next 6 months. However, there is very little effect on the willingness to obtain a new microloan in the next 6 months.

Table 3: Treatment Differences in Interest in having/learning more about…

	Saving account	**Microloans**
	(1)	**(2)**
Treatment: Slide show	0.093	0.004
	(0.105)	(0.086)
Treatment: Comedy	0.168*	0.028
	(0.089)	(0.073)
Average for Control Treatment	0.431	0.157
Equality of Effects Comedy = Slide show $\chi^2(1)$	0.58	0.10
Sample Size	177	177

Notes: Marginal effects from probit regressions are presented. The dependent variable takes the value of 1 if the participant responded that (s)he was interested or somewhat interested in owning a savings account (Column 1) and microloans (Column 2). Regressions control for individual level characteristics (age, gender, number of children, level of schooling and ownership of television). Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, *$p < 0.10$.

4. Policy implications

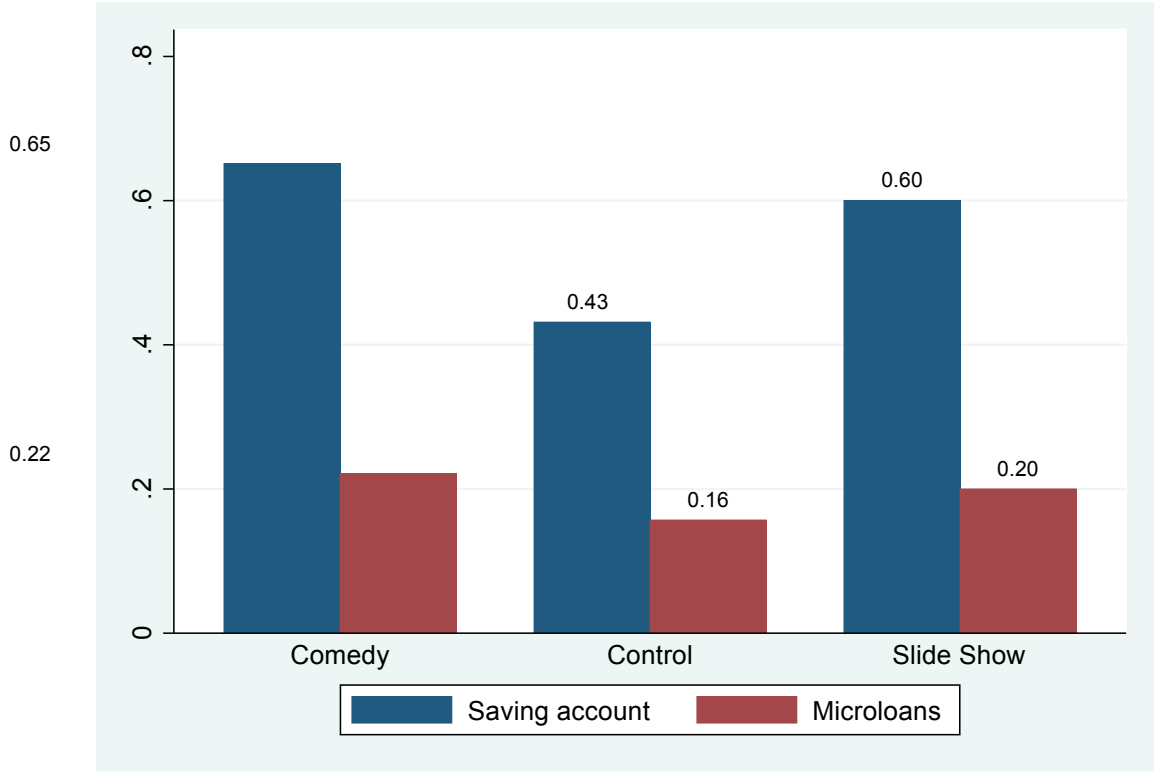
Several policy implications emerge from our experiment. First, the primary aim of this study was to evaluate the effectiveness of a comedy show in providing low-cost financial education outcomes for low-income Cambodians. This objective was achieved in terms of the production of the episodes and the survey of low-income garment factory workers to test its impact. Participants randomly assigned to the comedy show are significantly more likely to report that they are very or somewhat interested in obtaining more information on savings accounts and also are significantly more likely to open a savings account in the next 6 months (relative to those assigned to the control treatment). In terms of

educating about loans, the results are less encouraging. However, other results from the survey suggest that this reported lack of interest might be due to a perceived lack of need.

The positive and statistically significant treatment effectiveness for savings but lack of impact relating to loans may suggest that the comedy video format is helpful for increasing knowledge of products rather than promoting well-known products. The comedy video shows a couple who successfully borrow to start a business, but garment factory workers seem indifferent towards this small business borrowing option following the video. Hence, this may indicate that a comedy show is not going to lead to more use of loans for those that have already decided they are unnecessary.

The evidence suggesting that television comedy might be better used for education rather than promotion may mean that future shows should be produced on topics where knowledge is low across the population. This may result in initial research to measure the level of knowledge for various topics prior to production of the show. The show could then demonstrate the existence and characteristics of the products with MFIs left to advertise why they should be used. This is akin to community announcements regarding newly available medication or education.

Figure 4: Would like to have/learn about…



With initial pilot research complete (and showing some success), we can progress to wider distribution, including television broadcast and social media. Certain social media platforms, such as Facebook, are becoming widely popular among young people in Cambodia, and the low cost and availability of smart phones and cheap, widely available mobile phone data networks has made them accessible even in poor, rural areas. Garment factory workers, for instance, are becoming heavy users of social media. Once wide distribution commences, the research on its large-scale impact can commence. Currently, market research companies are being explored as a method of evaluating the effectiveness of the video across the whole country including possible measurement of social media impact.

Production is currently wrapping up on the next financial education-related episode in the comedy series. The next episode relates exclusively to mobile money and its benefits in terms of transferring funds cheaply and easily across the country. Research on the effectiveness of this episode was initially to be included in this study, but a delay in the production of the show has prevented this from occurring. However, our research model (following possible improvements) can be applied to the second episode to measure its impact.

The ultimate test of broadcast television as a tool to impart financial education would be the cost effectiveness of this medium compared to available alternatives. We know the cost of making the episode. At this point, we do not have any information on the returns and benefits (in terms of accounts opened, to start with). For that we need to wait for the actual broadcast.

5. Conclusion

The question that lies at the heart of our work is: How best can we educate the most disadvantaged of a developing economy so that they may enjoy the fruits of economic growth? To answer this question, we seek to deliver financial education in a cost-effective way across an entire country (and particularly to those people living in rural areas). Initially, the financial education needs to provide basic financial information in order for people understand what financial services are available to them and how they may benefit from them. Ideally, in order to be effective, the education should be simple and accessible.

What better way to fulfill these requirements than broadcast television? Television may be able to deliver rudimentary financial literacy to those most disadvantaged in a cost-effective manner. The promise of broadcast TV is that the financial education it delivers may prove effective, as it will be accessible, memorable, and entertaining to a large audience of those normally excluded from financial services, particularly those who live outside major cities. We have shown that broadcast television has the potential to deliver on this promise.

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