The Nollywood Nudge

An Entertaining Approach to Saving

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Abstract

This paper investigates the immediate and medium-term behavioral response to an emotional trigger designed to affect biases in intertemporal financial decisions. The emotional trigger is provided by a narrative portraying the catastrophic consequences of poor financial choices. Even when people are fully aware of the most appropriate action to take, cognitive biases may prevent this knowledge from translating into action. The paper contributes to the literature by directly testing the importance of linking emotional stimulus to financial messages, to influence borrowing and saving decisions, and identifying the interaction between emotional stimulus and the opportunity to act on this stimulus. The study randomly assigned individuals to a featured production—a Nollywood (the Nigerian Hollywood) movie—on the financial consequences of poor borrowing and saving behavior. This treatment is interacted with the option of opening a savings account at the screening of the movie. At the exit of the screening, individuals in the financial education movie treatment are more likely to open a savings account than individuals in the placebo movie treatment. However, the effects dissipate quickly. When savings and borrowing behavior is measured four months later, the study finds no differences between treatments. The paper concludes that emotional triggers delivered in the context of a one-time feature film might not be enough to secure sustained changes in behavior.

The Nollywood Nudge: An Entertaining Approach to Saving

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1. Introduction

Traditional rational-agent economic models rely on the assumption that people make decisions based on a rational and deliberate consideration of all costs and benefits associated with the action, conditional on available knowledge. However, many individuals (especially low-income) regularly make seemingly sub-optimal financial decisions and there are strong correlations between financial knowledge, sound financial decisions and use of financial products (e.g. Hilger *et al.,* 2003). This has led to a growing body of literature exploring the importance of providing financial education and training to individuals and entrepreneurs to effectively improve knowledge, leading to improved financial capabilities and decisions. Despite strong correlations (e.g. Lusardi 2007), rigorous causal impact evaluations of financial literacy training programs have shown mixed results, often with little to no effect on actual behavior (e.g. Cole *et al*., 2011) or showing positive impacts only through resource-intensive interventions (e.g. Bruhn *et al.*, 2013). These limited effects could be explained by (i) only small increases in actual knowledge; or (ii) the fact that people do not fully apply this knowledge when making financial decisions such as when and how much to save. Evidence from psychology and behavioral economics highlights the fact that people act within "bounded rationality", often relying on heuristics to simplify their choices. Kahneman (2003) presents a framework that differentiates between two states that drive human decision making: intuition and reasoning. Decisions based on intuition are "fast, automatic, effortless, and often emotionally charged", whereas reasoning is "slower, effortful, and deliberately controlled". He argues that most decisions are based on intuition, where reasoning acts as a safeguard, rather than motivator, of many behaviors. This insight has important potential implications on how best to influence financial behavior. Even when people are fully aware of the most appropriate action to take, cognitive biases and heuristics may prevent this knowledge from translating into action. Thus, the traditional causal framework linking improved financial knowledge to changes in awareness, perceptions, attitudes and behavior, may underestimate important psychological barriers to financial inclusion that weaken the suggested causal chain. Acknowledgement that we base many decisions on heuristics rather than full information helps to explain why, for instance, "rule-of-thumb" approaches to financial education can be more effective at changing behavior than teaching more detailed accounting principles (Drexler *et al.*, 2012).

Although improvements have been registered in the last 3 years, 46% of the Nigerian population remains financially excluded, with no access to formal or informal financial services.[1] This compares unfavorably

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[1] Results presented here are based on a recent nationally representative survey of 20,000 consumers conducted by EFinA in 2010: http://www.efina.org.ng/our-work/research/access-to-financial-services-in-nigeria-survey/.

to countries such as Kenya and Botswana (33%), while in South Africa only one quarter of the population is financially excluded. Only 25% of people have a formal savings account, excluding 66 million adults.[2] The use of Microfinance bank (MFB) accounts is even less widespread with only 4.6% of the adult population having a savings account with an MFB. This lack of access is not derived from a lack of interest or demand. According to recent survey results, almost 75% of the unbanked population in Nigeria report that they would like to have a bank account and over 80% of the population receives financial advice from family and friends.

Drawing from the studies and findings above, the question arises whether (i) commercial entertainment media could be used to combine information (education) delivery with (ii) behavioral treatment arms, such as nudges, varying choice architecture, and/or emotional stimulation. Could combining the two perhaps help improve literacy levels and at the same time overcome some of the psychological barriers that stimulate bad behavior? While commercial media has for a long time been associated with effective changes in social behavior (both positive and negative) it has rarely been used in the field of finance. In other sectors, such as health and education, these tools have been used with success for a long time. For instance, as Brazil's Rede Globo network grew through the 1970s and 1980s, women also began having fewer children, experiencing the same decrease in fertility as with two extra years of education (La Ferrara, Chong, and Duryea, 2012).

While using mass media to transmit educational messages is not a novel approach, using edutainment to improve financial capabilities is less explored. The telenovela "Nuestro Barrio" is a prominent example from the U.S. aimed at Hispanic immigrants, where research found that it successfully conveyed the importance of formal bank accounts to the largely under-banked community (Spader *et al,* 2007). Most recently, a World Bank supported study evaluated the impact of a South African soap opera with financial messages ("Scandal!"). The study made use of an encouragement design to compare outcomes between a randomly selected group that watched Scandal and another group that watched a "placebo" show without financial education content. Watching Scandal resulted in higher financial knowledge scores, increased borrowing from formal sources, and decreased the likelihood of entering into hire purchase agreements (Berg & Zia, 2017). In Ethiopia, a study showed that simple documentaries of relatively

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[2] http://www.efina.org.ng/assets/Documents/Updated-Documents/Key-Findings-2012.pdf
http://www.efina.org.ng/our-work/research/access-to-financial-services-in-nigeria-survey/efina-access-to-financial-services-in-nigeria-2012-survey/
http://www.cgap.org/blog/data-action-using-finscope-nigeria

successful individuals from the same region affected both viewers' investment in their children's education and other future-oriented behaviors (Bernard *et al., 2015;* see also Bernard *et al., 2014).*

Edutainment, as an alternative to more formal classroom learning has the potential to be distributed more widely at lower marginal costs, and may appeal to a broader base, reaching out to people that may not otherwise be interested in in the topic. By creating emotional connections to the characters and the storyline, the process is believed to help internalize and operationalize the learning. Since this is a relatively new approach in the field of finance, there is a need for rigorous evaluation of these programs to assess the extent to which entertainment media is indeed effective in changing individuals' financial behavior. In particular, one question is about the role of edutainment through a once-off event (as is the case for *The Story of Gold*) as opposed to continued exposure to the message (like in the case of the soap operas mentioned above) that could make the emotional connections much stronger.

This evaluation explores the effectiveness of mass- and social media delivering financial messages to induce behavior change beneficial to recipients. Specifically, building on the evidence that emotions and heuristics are likely to influence decisions, this study explores the effectiveness of using a Nollywood movie, *The Story of Gold*, to relay a simple message of "safe saving and responsible borrowing" through an emotionally-charged story line to a group of 2938 microentrepreneurs in Lagos, Nigeria. By intertwining the main message of responsible financial behavior into an accessible, entertaining and relatable story about twin sisters trying to succeed in business, the movie appeals to emotion, without providing specific information related to common measures of financial literacy such as understanding of interest rates and inflation. The underlying assumption is that a movie loses its entertainment value when people start explaining how to calculate risk adjusted returns to investments.

The Story of Gold is a once-off event aiming to influence transient emotions and lower transaction costs. However, responsible saving is a long-term commitment requiring continued and deliberate effort. The objective of the study was to identify whether this once-off event could spur action (in our case, opening a microsavings accounts) and serve as a catalyst to build financial capabilities through direct and continued exposure to financial institutions and products. The theory of behavioral consistency - where actions based on transient emotions have been identified to influence later decisions derived from people's desire to be consistent with previous actions - justifies the possible effectiveness of this "foot-in-the-door" hypothesis, but there is limited evidence on how this might influence savings behavior in

particular.[3] Hence, shedding some light on whether and how interventions that work through affecting perception and emotions in the short term can produce change in behavior and commitment in the longer term is an important empirical topic.

The study uses a 2x2 randomized factorial design to exogenously vary (i) exposure to *The Story of Gold* and (ii) access to financial products by offering free "on-the-spot" micro-savings accounts through a Microfinance Bank (MFB) at selected screening events. Through this framework we can test the relative effectiveness of (1) using "edutainment"[4] to motivate action, (2) reducing access constraints to financial products, and (3) the interaction of these two.

We find that entrepreneurs in all three treatment arms increase self-reported trust in MFBs, but the treatment arms including *The Story of Gold* had a larger effect on male self-reported trust. The combination of the movie with the presence of an MFB to help facilitate the opening of a savings account (at the time of the screening) was substantially more effective at motivating business owners to open an account than the presence of an MFB combined with a placebo screening, and this was most effective for influencing male decisions, increasing savings account sign up rates from 1% to 11%. Four months after the event we find limited or no sustained impacts on perceptions of MFBs and intention to borrow and save, and no effect on the likelihood of having a savings account (we find that many of the business owners that opened an account at the screening already had a savings account, resulting in this null effect).

This suggests that, even with relatively low-budget productions, it is possible to use entertainment to motivate action in the short term but long-term behavior is less malleable.[5] Furthermore, having a direct opportunity to act in the moment may significantly increase the impact of edutainment activities that influence transient emotions. However, care needs to be taken when developing the choice architecture designed to nudge people towards more "optimal" financial decisions, as this may induce unexpected behavior leading to further sub-optimal outcomes.

The rest of the paper is structured as follows: in Section 2 we explain our rationale to test edu-entertainment – in contrast to more standard financial education programs – as a means to change savings behavior and describe the intervention. Section 3 provides an overview of the identification strategy, and section 4 describes the sampling, baseline balance and attrition. Section 5 presents the

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[3] More generally, this can be related to the "path dependence" principle in economics and sociology (Pierson, 2000).
[4] That is education through entertainment.
[5] This could indicate that a commitment savings account might be necessary to solidify longer term behavior.

econometric framework for analysis. Section 6 presents the results, and the robustness checks are included in section 7. We provide a discussion and conclude in section 8.

2. Context and Description of the Intervention

Movies from the Nigerian film industry penetrate almost all households in Nigeria – and across much of Africa, making them the ideal platform to deliver edutainment content. Although producing relatively low budget films, Nollywood is now the second largest movie industry in the world in terms of productions, only trailing India's Bollywood with an output of about 200 films every month. The industry is also the second largest employer in Nigeria, after the government. Films are largely made for home consumption rather than for the bigger cinema screenings. The stories told put fundamental human emotions and strong narratives front and center: Love, hate, envy, upward mobility, urban culture, and witchcraft. Due to their ubiquity, movies have the potential to reach large audiences with ease, surpassing traditional ways of conveying messages. Even politicians have understood the potential of these movies, posing with their stars at rallies and events. With financial and political backing,[6] together with large demand, Nollywood provides a unique opportunity to disseminate knowledge and build a culture of responsible financial decision-making, reaching out to the otherwise marginalized communities.

The Story of Gold is a feature-length Nollywood movie produced and distributed by Credit Awareness,[7] a local NGO promoting "safe savings and responsible borrowing". It tells the story of identical twin sisters in Nigeria. Although identical in appearance, the decisions they make when faced with different financial choices affect their lives as well as those around them and ultimately lead them down different paths, one making sound financial decisions and succeeding in business and the other falling into a debt trap. The movie aims to impress upon low income individuals with limited formal education the importance of saving with a formal financial institution and borrowing responsibly. Focusing on this simple message and highlighting the repercussions of poor financial decisions, *The Story of Gold* focuses on the heuristic and emotional elements of human decisions to promote a stronger savings culture, facilitated by Credit Awareness. A partner microfinance bank (in this case *Accion*[8]) participated in selected screening events and briefly presented their main savings and borrowing products after the show. They then provided all the necessary paperwork for participants to open a "Brighta Purse" business savings account on the spot

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[6] A N3 billion facility to support the Nigerian movie industry was introduced in 2013, http://www.vanguardngr.com/2013/03/beyond-project-nollywood/.
[7] http://www.creditawarenessnigeria.com/home.php
[8] http://www.*Accion*.org/our-impact/nigeria

if they were interested in doing so. The micro-savings account is geared towards micro-entrepreneurs as an entry savings and transaction account, requiring no initiation fees (although a minimum balance of 500 naira is needed - one-third of average daily profits from our sample of entrepreneurs). Interest on this savings account is then a function of the amount of savings held. If entrepreneurs expressed interest in opening an account but did not have the opening balance on hand, they could sign up their names and contact details and follow up with *Accion* at a later date to confirm the account opening. In this case, the combined intervention aimed at simultaneously encouraging people to save through the movie's message while reducing access barriers almost to zero with the presence of the MFB at the screening events. The hypothesis was that the movie would serve to inform, but also motivate business owners to act, and open a new savings account. The motivational effect of the movie was expected to wear off soon after the screening, and giving business owners the opportunity to act in the moment may increase the potential for this short-term motivation to translate into action. By overcoming these barriers to formal financial participation, the study could then explore whether this engagement resulted in longer-term interactions, leading to improved use of financial products over time.

While Credit Awareness planned to roll out the screening events across the country, the evaluation focused on a series of early pilot screenings to test the modality and learn before scaling up. The pilot screenings were conducted at local community halls in the Ikotun region of Lagos – home to a sprawling street market. The typical screening event would be held in a hall, with local traders invited to attend. The event lasted approximately 3 hours, starting with a brief introduction, the screening of the movie and an open discussion after the event to reflect on the story's core messages. This would be followed by the engagement with the MFB. For the purpose of the evaluation, two extra elements were included to the standard Credit Awareness model: (i) to ensure compliance with the assignment strategy each participant received a personalized invitation with a photograph to confirm their identity; and (ii) to improve participation rates, a lottery was held at the end of the event where participants could win spot prizes.

3. Sampling and Identification Strategy

Two community halls large enough to hold 200 people were identified in the Ikotun area of Lagos. A radius of 2km was used to set the boundaries to ensure that all participants could easily access the halls without needing to use public transport. A census of the area was then taken in July 2012, together with a short baseline listing questionnaire used to stratify the sample on whether they had a savings account, whether they kept financial records and if their store was in the main (official) market area, or in the surrounding

Lagos streets. In total 2,938 micro-entrepreneurs were recorded with geo-positioning and photographs to confirm identity in follow-up interactions and verify intervention compliance (see Annex for an example of the invitation created from this information to verify identity at the event). The criterion used for selection into the sample was being the owner/operator of a business operating within the study area. These businesses were then randomized into one of 5 groups: (i) pure control [**PC**]; (ii) placebo screening [**C**]; (iii) Story of Gold Screening [**MOVIE**]; (iv) placebo screening plus presence of MFB [**MFB**]; and (v) Story of Gold plus presence of MFB [**MOVIE/MFB**].

The **PC** group was not invited to attend any screening. The other four groups were invited to attend one of 8 screenings (2 per group). Invitations were delivered one week before the screening and two screenings took place every Thursday during September 2012 for 4 weeks. Invitations to each screening were identical and events were held at the same time each week (8am – 11am), chosen because the cleaning of the market took place at this time, ensuring low opportunity costs to participation since businesses were not allowed to trade during this time. This uniformity of invitations and event dates was used to minimize the possibility of differential take up across screening events.

In **C** screenings, people were shown a Nollywood movie that had no financial messages associated with it, but were given a brief talk after the event about the importance of hygiene in markets to provide quality products and services. This was done explicitly to control for the "event effect" of having received a personalized invitation and participation in a big screening event possibly confounding results, and also to create a comparable group of compliers in both treatment and control groups to simplify the analysis. The standard Credit Awareness program (screening *The Story of Gold* and interacting with an MFB) was split in order to differentiate the impact of the movie from the increased access of financial products coming from the MFB's presence. As such, a 2x2 factorial design was implemented for the treatment arms in order to detect the differential impact of each component and the interaction effect relative to **C**.

In total, 1,261 people (60% of those invited) attended the movie screenings, where a short questionnaire was administered at the end of the event to measure perceptions and attitudes about savings, borrowing and MFBs. Administrative records were kept at the **MFB** and **MOVIE/MFB** events to record the people who (i) engaged with *Accion* to open an account at a later stage and (ii) actually opened an account at the event.

Four months later, in February 2013, a follow-up survey was conducted on all baseline respondents to collect longer-term data on attitudes, intentions and behaviors with respect to saving and borrowing activities to assess the longevity of any impacts identified at the screenings.

4. Outcome Measures, Baseline Balance and Attrition

Outcome Measures

The main outcome measures are aligned with the essential messages of the Nollywood movie. They can be divided into four categories that capture (i) perceptions of MFBs, (ii) perceptions of women, (iii) intentions to save or borrow, and (iv) savings and borrowing behavior.

Regarding the perceptions of MFBs, the survey asked the micro-entrepreneurs if they agree or disagree with statements such as, "I would trust an MFB to keep my money safe", "MFBs treat people with respect", "If I apply to an MFB for a loan, my application will be accepted". Since the movie focused on female entrepreneurs as the main protagonists, we also explore self-reported perceptions of female business competence and access to financial opportunities. Questions designed to explore perceptions of women as business owners or financial decision makers ask respondents if they agree or disagree with statements like "Women can run businesses just as well as men", "Women make better financial decisions than men", "It is easier for men to receive loans than for women". The intention to save or borrow questions capture whether respondents agree with statements such as "I plan to apply for a loan in the next 6 months" or "I will save some money next month". Self-reported savings and borrowing behavior is captured through responses to questions such as "I saved money last month", the amount of total savings relative to the monthly income earned, savings kept at MFBs, savings at commercial banks, outstanding loans from commercial banks, MFBs, suppliers, money lenders, or family/friends. Actual savings behavior is measured through administrative records of those who engaged with representatives of *Accion* to open an account, and those who actually opened an account at the screening event.

Neither financial knowledge, nor basic numeracy skills were specifically addressed in the movie's storyline. Nevertheless, the survey also included 6 quiz-like questions with true and false choices to assess respondents' understanding of basic financial concepts as well as their numeracy skills. The underlying motivation for including these questions is that economic models of savings and investment choice consider both as indispensable for good financial decision taking (Lusardi and Mitchell, 2013). In particular, respondents were required to do simple divisions, to perform basic calculations related to

interest rates, to identify the better bargain among two different savings and loan products, and to demonstrate their understanding of how inflation affects their savings. Lastly, one question aimed to evaluate the respondent's know-how needed to successfully interact with financial institutions (awareness of required documentation for being able to open an account).

Since single questions provide a rather incomplete picture of respondents' levels of financial knowledge, an arithmetic financial knowledge score ranging from 0-6 was calculated by summing up the correct answers to these 6 questions.

To reflect the level of difficulty associated with each question, an alternative financial knowledge score has been developed, which weights every question with the inverse of the proportion of respondents who were able to provide a correct answer. Therewith, larger weights are given to questions that fewer people answered correctly.

Baseline Balance

Table 1 reports summary statistics for the entire sample, as well as for each of the 5 assignment groups for all exogenous variables including information from the baseline listing, and time-invariant variables measured at follow-up. Results are thus reported on balance for business owners who were included in both the baseline and follow-up survey (n=2,358). The micro-entrepreneurs comprising the total sample are on average 38 years old, predominantly female (71%), married (84%), Christians (64%), are able to speak English (70%), completed high school as their highest level of education (50%), and live in households with an average size of 4.5 individuals. They are experienced in running a business (on average around 11 years of experience and 8 years in the current operation), and more than half of the sample (57%) already holds a savings account.

Given that treatment was randomly assigned, the 5 assignment groups are expected to have similar characteristics. Columns (4), (6), (8) and (10) in Table 1 show the mean baseline characteristics of all micro-entrepreneurs surveyed at the baseline by treatment group (including the pure control). Columns (5), (7), (9) and (11) report the p-values of the t-test for equality of each of these mean baseline characteristics against those in the (placebo) control group. No characteristics are significantly different from the control (placebo) group at the 5% level for the three treatments, except for the proportion of Igbo business owners in the MOVIE/MFB group. The expectation of balance on observable baseline characteristics also holds between treatment groups, which supports our claim that the randomization worked well. We see for the Pure Control group, however, that 3 of the 26 characteristics are significantly different at a 5%

level (we would expect significant difference in one of every 20 measures by chance). Particularly concerning is that there is imbalance on having a savings account (56% in placebo control group; 63% in the pure control group). This is likely to have been driven by differential non-response at follow-up, where we find higher non-response rates in the pure control. We also explore balance across treatment groups for male and female business owners separately (Table 15, Table 16, Table 17 and Table 18) and find similar results.

Table 2 reports the mean characteristics of those who were assigned to a screening event (Column 1) which excludes individuals in the pure control group, and details observable differences of those who attended (Column 2) with those who did not (Column 3). As indicated in Column 4, the selection into screenings is strongly correlated with more educated micro-entrepreneurs, who are more likely to speak English, enjoy higher access to financial products, and are more likely to keep financial records for their business. This selection process may be explained by the way the screening events were framed: business owners were told that they were invited to a "business development" event and the invitation was in English (see Annex 1 for an example of the invitation). Since a major aim of edutainment is to reach out to the "bottom of the pyramid", future edutainment activities may want to consider framing the event less as business development and more as entertainment, as well as promoting and designing it in a way that language is not perceived as a barrier to attendance. Overall participation rates are reasonably high (60%) when compared to other financial literacy programs, but it is clear that non-participants present a target group that potentially has the most marginal added value to participation but are at the same time the most difficult group to entice into these types of events.

Although there is strong evidence of self-selection into screening events, Table 3 shows that the drivers of this selection across screening events appear to be the same. For those who participated, we see balance across observable characteristics, which is in line with the fact that all screening events were marketed in the same way with the same characteristics. This balance of selection across events supports the possibility of comparing attendees against each other, rather than needing to rely on the intention to treat estimates.

Attrition

The attrition rate in this study is 21.1%, which is relatively high compared to other household surveys (e.g. EFInA 2010 had an attrition rate of 6%), but within reason when compared to enterprise surveys. Intensive efforts were made to reach all respondents who were listed at the baseline, but around 12% could not be contacted again, some refused to be re-interviewed (2.9%), and very few (0.3%) were unable to

participate (e.g. for health related reasons). This attrition rate also includes former micro entrepreneurs (5.7%), who may not be considered as being eligible anymore, because they shut down their business between the baseline listing and the end-line survey. If former micro business owners are not taken into account, the attrition rate reduces to 16.3%. There is some evidence for selective attrition for the pure control group, but good balance between the placebo and three treatment arms.[9]

5. Model Specifications

In this study we effectively have three treatment arms: **Movie**, **MFB**, and **Movie/MFB**. Given that the intervention assignment was randomly allocated, we can measure the causal impact of these interventions through a simple linear regression that identifies the average treatment effect (ATE) using the intention-to-treat estimator (ITT):

$$Y_i = \alpha + \sum_{j=1}^{3} \gamma_j \, T_{ij} + X_i + \varepsilon_i \qquad \text{[1]}$$

Where Y_i is the outcome of interest for participant i, , and T_{ij} is the treatment status for person i with regard to treatment j. Treatment $j= \{1,2,3\}$, for each of the three treatment groups. X_j is a vector of exogenous control variables collected at baseline or time-invariant variables collected in the endline survey.[10] We run the same regression without controls and find point estimates to be unchanged in the analysis, consistent with the balanced nature of the selected control variables, and as such we report the adjusted results in the paper.

Since we are particularly interested in gender differentials, our second specification explores the impact heterogeneity by gender.

$$Y_i = \alpha + \beta G_i + \sum_{j=1}^{3} (\gamma_j + G\delta_j) T_{ij} + X_i + \varepsilon_i \qquad \text{[2]}$$

Here G_i = 1 if male, 0 if female. The regression results presented in the tables generated from the analysis include the effect of treatment j on females (γ_j), the additional impact for males (δ_j) and the overall gender

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[9] See a detailed analysis of attrition in Annex 2.

[10] The control variables included in the analysis are: business owner age, marital status, ethnicity, ability to speak English, education level, household size, religion, business experience, number of employees at baseline, whether they had a savings account or kept financial records at baselines, and whether they operated in the main market area or in the outskirts (geographically defined through GPS).

differential G_j. Each table of results presents results from Equation 1 first, followed by gender-disaggregted results from Equation 2.

In Section 3 we see that overall selection into the movie screening is such that those who attended the events were slightly different from those who did not attend the events. However, we find that this selection pattern is the same across all screening events (based on balance of observable characteristics) and, importantly, there are no differential selection patterns between the 3 treatment arms and placebo screening **C**. In this case we run a restricted analysis on those business owners who actually attended the event. Relying on the balance across an extensive set of baseline variables and the manner in which the events were implemented (randomized invitations at the individual level), we reasonably expect this comparison to provide an unbiased estimate of the Average Treatment Effect on the Treated (ATET) – the impact for those who actually attended the event, using Equations 1 and 2 with the restricted sample of 1,261 participants.

We acknowledge that, if there are large positive spillovers, this may result in a downward bias of the estimate of impact. As such, the survey included control "clusters" that were created through geographic discontinuities, where a self-contained cluster meant that all businesses within the cluster were at least 20 meters away from the next closest business outside the cluster.[11] This sampling method creates a "pure" control group less exposed to treatment neighbors, thus exogenously varying the level of intensity of treatment in any particular area of the market, theoretically allowing us to explore spillovers. We see, however, in the pure control group that we experience differential attrition resulting in an imbalance based on baseline observable variables. As such, we exclude this group from analysis in this paper. In the following section we present results using Equation 1 with the restricted sample of business owners who actually attended a screening, using the placebo group as our control comparison.

6. Results

Exposure

Administrative records were kept on who participated in the screenings, using the personalized invitations to verify details and treatment status, which was a requirement for entry into the movie screening. The screenings were secured and private with complete control over the entrance and exit of the events.

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[11] We use the rule of 20m for businesses outside the main market area. Density is too high for businesses inside the main market area, in which case we use a 5m rule.

Although participation rates averaged around 60%, contamination was very low as a result of this process. Table 6 highlights this fact, where less than 1% of invited guests went to a different screening to the one they had been assigned to, strengthening the justification to use Equations 1 and 2 with our restricted sample to measure the ATET.

In the follow-up survey we asked for self-reported exposure, partly to confirm attendance, but also to understand whether people could remember the main activities and messages from the events – presented as a summary in Table 7. While people have no problem recalling the screening, they express some confusion about the details of the event. We find that 95% of people recall receiving an invitation and 96% of the people who were recorded through administrative records as attending the event confirmed that they had attended. When asked specifically about whether they saw the *Story of Gold*, 90% in **Movie** and 93% in **Movie/MFB** acknowledged that they had done so, while 77% and 82% respectively could recall the main message of the movie without prompting. However, **C** and **MFB** groups also reported having seen the movie, although at significantly lower levels (59% and 58% respectively). Since the movie was tightly controlled, and not released to the public, this suggests a potential confusion between *The Story of Gold* and the placebo movie screening – possibly confounded by the fact that neighboring business owners may have seen and mentioned something about the movie.

Recall of *Accion* presence was much lower. We find significant increases in recall for **MFB** and **MFB/Movie** compared to **Movie** and **Control** as to be expected, but the proportions are still low. Only 16% of **MFB** attendees and 17% of **Movie/MFB** attendees recalled *Accion*'s presence at the event. We also asked a falsification question to assess the level to which respondents may have been adjusting their answers to respond positively to the interview. We find that only 1% of people responded positively to a question asking whether a certain MFB (Jaiz Bank), that is only based in Abuja, had visited them (an impossibility), and this is similar across treatment arms, suggesting that positive response bias does not seem to be a problem in our case. Since the interventions were monitored carefully and *Accion* was indeed present at these events, this contrast between *Accion* and *Story of Gold* recall highlights the differential salience of each of the interventions.

Financial Literacy

The quiz questions test basic numeracy and financial concepts. Since the movie screening aimed to influence emotions and perceptions rather than formal financial literacy, we expected these indicators to show balance across groups, which they do. In particular, the survey included 6 quiz-like questions with

true and false choices to assess respondents' understanding of basic financial concepts as well as their numeracy skills: respondents were required to do simple divisions, to perform basic calculations related to interest rates, to identify the better bargain among two different savings and loan products, and to demonstrate their understanding of how inflation affects their savings. Lastly, one question aimed to evaluate respondents' know-how needed to successfully interact with financial institutions (awareness of required documentation for being able to open an account). Aggregating the questions into a single index, we find two things (see Table 8): (i) scores are very similar across all groups and (ii) the aggregate scores are relatively high, with the weighted and arithmetic scores yielding similar results, perhaps reflecting a lack of variation and cognitive separating ability of the set of questions. However, when exploring the covariates associated with these financial literacy scores, we find strong relationships between the overall score and (i) whether business owners had a savings account at baseline and (ii) whether they had any schooling, supporting the assertion that the indices are informative in distinguishing between financial literacy levels, and the similarities in scores across groups reflects balance induced by the randomization.

Perceptions

We find increases in self-reported trust and perceptions of MFBs directly after the screening events; however, when asked the same questions in the follow-up survey, many of the initial differences reduce or disappear.[12] While males are influenced most strongly by the movie stimulus in the short run, differentials in self-reported trust only sustain for females in the longer run. Table 9 presents the results from the screening and endline surveys. While the movie on its own has some impact on whether people report that they would trust an MFB to keep their money when people were asked this question at the screening, the presence of *Accion* seems to have a much larger effect than the movie, and there is no additivity of the interventions (although both are significant and positive). In the second follow-up survey, we see that the differential between control and treatment group trust declines; however it is the movie treatment arms that sustain results, where the impact on **MFB** reduces to insignificance. This sustained impact is almost entirely driven by females, even though males were most affected by the movie in the short run. A supporting question identifying positive perceptions of MFBs ("MFBs treat people with respect") shows similar results, with larger impacts for males in the short run, followed by some limited,

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[12] Direct comparison between the two follow-up surveys should be handled carefully. Although the questions asked were identical, the response method varied across data collection activities. In the immediate follow-up, the question responses were yes/no, and the questionnaire was self-administered. In the 4-month follow-up survey, the questionnaire was administered by an interviewer and the response options were: strongly agree; agree; disagree; strongly disagree.

but sustained differences for females in the longer run, even when male differentials disappear. This significant impact is only found in the combined **Movie/MFB** arm.

We also explore perceptions of ease in obtaining a loan and riskiness of doing so. Both the movie and MFB treatments have a significant positive effect on business owners' perception of how likely it is that they may receive a loan if they applied for one in the short run (this falls away completely in the longer run), but none of the interventions have any impact on beliefs of the risk in taking out a loan.[13]

Intentions

We tested business owners' intentions about their saving and borrowing plans, once again through the screening questionnaire and in the follow-up, with results presented in Table 11. Here there is mixed evidence, with some impact on borrowing intentions, but no changes on what are already very high intentions to save. Intention to save is almost universal – 90% at the screening and 95% in the follow up respondents indicated that they planned to save some money in the following month. When we compare this to actual saving in the past month (65% in the endline survey – Table 13), it is clear that there is a disconnect between intentions and behavior, with many more business owners planning to save, but not necessarily following through with these plans, reinforcing the possibility that various frictions may be reducing people's ability to translate intention into action. The reason for this disconnect could be manifold: (i) hyperbolic discounting; (ii) lack of disposable funds; (iii) overconfidence or (iv) limited access to financial products, and we cannot necessarily disentangle all of these factors; however, we do see that the interventions provided have little influence on what are already very strong self-reported intentions to save, suggesting that this is not likely the channel through which any behavior change occurs.

Savings Behavior

At screening events with MFBs present, business owners were able to discuss savings opportunities with the MFB and sign up for a savings account on the spot if they were interested. Participants had two options when expressing interest in opening up an account with the MFB: (i) business owners would meet with the MFB and sign up for a follow up visit to open an account; or (ii) business owners would sign up for an account on the spot. Table 12 reports on the data collected at the two types of screening events (**MFB; MOVIE/MFB**) showing that people were more likely to express interest in opening an account by visiting the MFB stand directly after the event in the **MFB** group (13% vs. 8%). However, differentiating this visit

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[13] We also explore perceptions of female business owners, see Table 10.

into each of the two options available (signing up on the spot, or agreeing to a follow up visit to sign up for an account) we find substantial differences. The majority of people in the **MFB** group that visited the MFB stand opted for a follow up visit rather than signing up on the spot. However, the **Movie/MFB** combination event was substantially more effective at incentivizing on-the-spot savings account sign ups at the event, and this effect was strongest for male participants. The **MOVIE/MFB** combination event motivated 7% of participants to open an account on the spot (compared to 2% in the **MFB** group), but this effect was substantially different between male and female participants (5% of females and 11% of males). The overall difference is statistically significant, but the gender-disaggregated differences are only significant for males.

Although the **MFB** event was moderately successful in encouraging people to visit their stand and agree to a follow up visit (11%), on further inspection we find that none of the people in this category actually followed up after the event (**Table 13**). In fact, the only people who followed up with an MFB after the screening came from **Movie,** where the MFB had not been present. Although a small fraction (2% for both males and females), this is the only group with a statistically significant increase. The results provide the following insights: (i) reducing access barriers to virtually zero (**MFB** condition) increases engagement with the MFB and reported interest in opening an account, but has only a modest effect on actual sign-up rates; (ii) even without having an immediate call to action (the ability to open an account on the spot) *The Story of Gold* has some (although very limited) impact on short-term behavior, inducing 2% of participants to follow up with an MFB afterwards (**Movie** condition); but (iii) combining the reduced access constraint with the movie designed to promote savings (**Movie/MFB**) provides the strongest incentive to open a savings account, mostly driven by male participant choices. The evaluation design helps to deconstruct some of the potential barriers to demand for a savings account and identifies that an educational event attached to an emotional stimulus can be an effective tool to increase take-up, but only when combined with an intervention that allows for immediate action. However, this tells us little about savings behavior after the event.

Despite the strong impacts observed, important concerns arise from the follow-up findings. Firstly, we find that 67% of all participants who opened a savings account at the event reported having a savings account at baseline (significantly higher than the average for our sample). While there may be rational reasons to hold multiple accounts (or to change accounts), the finding reinforces the fact that the intervention may be inducing action only in a sub-population that has lower marginal gains in doing so when compared to the unbanked target population. The second related concern is that in the follow-up

we find no distinguishable difference in whether respondents have a savings account, which is not surprising given that the majority of those induced to open an account already had one prior to the screenings. More concerning, however, we find that males in the **Movie/MFB** group report having been *less* likely to save some money in the month prior to the follow up survey and show no differences in saving amounts relative to their income. While it is not clear what may be driving this result, it is possible that the event, while successfully motivating business owners to act in the moment and put money in a new savings account, only served to displace future savings, with no net gain.

Borrowing Behavior

For borrowing behavior, we rely only on self-reported responses in the follow up survey. The movie message centered on "responsible borrowing", highlighting the problems with relying on moneylenders, and we reflect on this through two particular indicators: (i) borrowing rate in last 4 months and (ii) the source of borrowing. In particular, we were interested in identifying whether business owners used formal or informal sources for financing. We find firstly that borrowing rates are substantial – about half of all business owners reported taking out a loan in the past four months, and half of those that took a loan did so from an informal source. The interventions have no effect on borrowing rates (although there is a reduction in all treatment groups, this is not significant). Similarly, we find (see results in Table 14) little to no evidence on changes in the form of lending, although females in the **Movie/MFB** group reduce informal lending by 14 percentage points, which is borderline significant. Interestingly there seems to be more congruency between intentions to borrow and actual borrowing than for savings intentions and behavior. While 54% of people mentioned that they were planning to take out a loan in the next 6 months immediately after the screening, we find 4 months later that 51% of people did so. This contrasts sharply with the intended savings (90%) and actual savings rates (60%) which seems to confirm that, in terms of saving behavior, there are several additional barriers at play in addition to those that the interventions address directly.

7. Robustness Checks

Our results show a significant effect of **Movie/MFB** on motivating business owners to open a savings account, but with little to no evidence of longer term impact on a broad range of savings and borrowing perceptions and behavior. A null effect could be a result of (i) limited power, driven by sample sizes too small to detect true impacts; (ii) spillovers improving outcomes for the control group; or (iii) selection bias

resulting from the control group participants having different participation decisions to our treatment groups.

Power is of concern when we measure heterogeneous impacts by gender, given that only 28% of our sample is male. We run each of the regressions reported in this paper for the entire sample (without differentiating by gender) and continue to find mostly null to low effects on our outcomes of interest in the 4-month follow up.[14] Here our sample is substantial, and power is less of a concern. However, in most cases the point estimate of the effects is so small that the interpretation of the results would not change even in cases we were to have enough sample power to estimate these small changes.

The study was originally designed to account directly for potential spillovers, given that all participants came from the same market area and interaction between participants was expected. The pure control group was generated using cluster-randomization to address this; however, as mentioned previously, we are unable to use this group due to selective attrition and cannot rule out potential spillovers. However, given that we see the strongest effects of the intervention being in the immediate term, and given the nature of the program (increasing short-term motivation rather than focusing on financial content), it seems somewhat unlikely that secondhand information passed from treatment to control business owners is likely to be a serious concern.

Our restricted regression analysis, used throughout the paper, effectively reports on the average treatment effect on the treated, without reference to the intention-to-treat (ITT) results which limits the scope of interpretation to effects on those that were actually convinced to attend the event. We run ITT regressions, including all business owners invited to the screening events on outcomes that were recorded at the endline, but do not report these results here. Unsurprisingly (see discussion above on why we can rely on the treatment effect on the treated in this context), the null effects remain, and our outcomes where impacts were found mostly remain significant, albeit with lower point estimates for impact.[15]

Finally, reflection on the savings account take up rates on which we find significant impacts is required. Why is it that males react most strongly to the screening event in the short run? This could reflect the fact that male emotions are affected more than females, inducing action, but may equally reflect the possibility that females have added constraints beyond motivation that affect take up, such as low

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[14] As expected, we do find cases where significant results in the gender-disaggregated analysis become non-significant in the pooled specifications, particularly when male and female effect coefficients have opposite signs.
[15] Informal lending is no longer significant.

liquidity or limited autonomy in financial decision making. The literature has found that females often make decisions jointly with their spouse or other counterpart, when compared to male business owners. However, we find that business autonomy is balanced across gender in our sample with 92% of males and females reporting that they make business decisions on their own. We do find, however, that business revenues and profits across gender differ significantly, with males having nearly twice the yearly profits of females. However, selection equations regressing profits and revenue with the likelihood of opening an account show no relationship. Furthermore, we find that intermediate outcomes such as increased self-reported trust in MFBs are substantially stronger for males than females. This suggests that, rather than females facing added constraints that the screening event does not overcome, the events have a differential effect on perceptions by gender that seems to be driving the differential take-up of savings accounts at the event.

8. Discussion and Conclusion

The primary role of the evaluation was to explore the use of a new medium to transmit financial messages, focusing on the use of heuristics and emotions to spur action in the short run with the intention of getting business owners a foot in the door to use financial products more regularly, learning and building experience thereafter. The second objective was to identify how access to financial products and motivation interact to induce action, and whether choice architecture can be effectively utilized to promote welfare-enhancing financial decisions.

The results from the evaluation are mixed, and warrant further discussion on three issues of importance for policy dialogue: (i) the ability of edutainment to reach out to the targeted population; (ii) the role of choice architecture on influencing short-term decisions; and (iii) ensuring sustained behavior change.

Recent evidence has highlighted the challenges to encouraging people to attend voluntary financial literacy workshops and other training programs (Bruhn & McKenzie, 2013). Low take-up rates are common, and this is especially true for interventions targeting business owners. Business owners may be making a rational decision to avoid the training because of low perceived benefits. Using edutainment to transmit financial messages is a new approach that has the potential benefit of being more inclusive, lowering barriers to participation. Response rates in this study of approximately 60% reflect that, even though these events are able to reach out to the majority of potential participants, this is far from universal and more effort is needed to find ways to market these events to have more mass appeal. In

particular, the least educated people with lowest access to financial products were the ones that selected out of the screening events, highlighting the difficulty of reaching out to this sub-population.

The study identifies a strong interaction between offering a stimulus (the movie) together with a direct outlet (the presence of the MFBs) for acting on this motivation. This result is not surprising, and replicates what is well known among marketers in a development setting. However, applying choice architecture to a development setting requires careful attention to the potential unexpected outcomes that may result. In our case, the once-off screening was effective at encouraging people to open new accounts, but on closer inspection, nearly two-thirds of these people already had savings accounts, possibly limiting the potential marginal impact of the work. This highlights the importance of testing potential interventions at a pilot level, measuring and understanding the determinants of take-up before scaling up.

While the intervention was able to influence decisions in the short run, people make financial decisions on a daily basis, and more sustained behavior change is critical in the context of saving. Our limited longer-term impacts emphasize this point. The ability to spur people into action through the use of edutainment may have more development impact for activities that are beneficial as once-off actions, particularly given the intervention's relatively low cost and simple logistics. Examples of where these types of interventions could work in other development areas could include, for instance, encouraging people to test themselves at mobile clinics for HIV/AIDS or taking vaccinations, where one-time actions of groups of people at once can have important private and public benefits. This approach could also be tailored to more sustained financial behavior change if coupled with commitment savings accounts – where decisions taken in the moment have a more binding effect in the longer-run (Ashraf *et al*., 2006). However, take-up of financial instruments tells us little about how this increased exposure may strengthen financial capabilities – responsible use of these instruments and financial decision making more generally. The literature has traditionally explored the direction for strengthening financial capabilities as going from education to better financial decision making and increased use of financial products. There is less understanding of how a "learning-by-doing" approach – focusing on providing access to financial instruments and exploring how this translates into experiential learning and ultimately improved decision making. While we have seen that nudges can be developed to help overcome the access constraint, it is still unclear as to whether this can be effectively translated into strengthened financial capabilities in the longer run.

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Table 1: Baseline Balance

Variable	Total sample N (1)	Total sample Mean (2)	Control Mean (3)	Movie Mean (4)	Movie P-value (5)	MFB Mean (6)	MFB P-value (7)	Movie + MFB Mean (8)	Movie + MFB P-value (9)	Pure control Mean (10)	Pure control P-value (11)
Personal characteristics											
Age of respondent	2314	37.76	37.90	37.52	0.553	37.89	0.996	37.31	0.339	38.44	0.427
Gender (male)	2358	0.29	0.26	0.30	0.173	0.30	0.220	0.29	0.371	0.31	0.138
Married	2357	0.84	0.85	0.82	0.211	0.86	0.557	0.82	0.206	0.86	0.845
Widowed	2357	0.02	0.02	0.03	**0.094***	0.01	0.284	0.02	0.984	0.03	0.264
Single	2357	0.14	0.13	0.15	0.551	0.13	0.795	0.16	0.190	0.12	0.494
Muslim	2356	0.36	0.35	0.40	0.136	0.35	0.793	0.36	0.717	0.33	0.421
Christian	2356	0.64	0.64	0.60	0.154	0.65	0.958	0.63	0.621	0.67	0.387
Can speak English	2346	0.70	0.70	0.67	0.321	0.72	0.450	0.71	0.636	0.73	0.382
Igbo	2356	0.20	0.17	0.17	0.925	0.21	0.141	0.22	0.104	0.24	**0.012**
Yoruba	2356	0.75	0.78	0.78	0.873	0.75	0.219	0.72	**0.035**	0.71	**0.025***
Other ethnicitiy	2356	0.05	0.05	0.05	0.635	0.04	0.777	0.06	0.242	0.04	0.839
Education											
No completed school education	2356	0.07	0.06	0.07	0.421	0.08	0.180	0.08	0.297	0.08	0.347
Primary school education	2356	0.22	0.24	0.24	0.968	0.21	0.164	0.21	0.209	0.19	**0.067***
High school diploma	2356	0.50	0.49	0.48	0.749	0.50	0.754	0.51	0.527	0.53	0.329
Diploma	2356	0.10	0.11	0.10	0.512	0.11	0.825	0.09	0.276	0.11	0.945
Graduate school	2356	0.10	0.09	0.10	0.866	0.10	0.626	0.11	0.425	0.09	0.916
Household characteristics											
Household (HH) size	2343	4.53	4.58	4.57	0.902	4.43	0.168	4.48	0.395	4.61	0.825
Number of children below 12 in HH	2311	1.33	1.38	1.29	0.230	1.30	0.311	1.25	**0.080***	1.44	0.524
Number of dependents in HH	2322	2.44	2.45	2.39	0.671	2.41	0.769	2.41	0.747	2.57	0.385
Number of dependents outside the	2213	1.55	1.50	1.53	0.843	1.53	0.827	1.54	0.784	1.66	0.330
Business characteristics											
Months in operation	2310	97.40	98.69	97.58	0.847	96.98	0.771	101.02	0.698	91.03	0.218
Has a savings account	2350	0.57	0.56	0.57	0.732	0.54	0.624	0.57	0.753	0.63	**0.035**
Keeps written financial records	2340	0.37	0.36	0.35	0.684	0.37	0.708	0.38	0.619	0.40	0.315
Operating inside main market	2324	0.25	0.24	0.26	0.500	0.24	0.985	0.26	0.535	0.27	0.287
Number of employees	2352	1.44	1.57	1.46	0.345	1.40	0.169	1.39	0.161	1.36	0.168
Business experience in years	2350	10.75	10.84	10.77	0.892	10.78	0.907	10.48	0.497	10.97	0.834

*** p<0.01, ** p<0.05, * p<0.1

Table 2: Selection into screenings

Variable	Total		Participated in screening		Did not participate		
	N	Mean	N	Mean	N	Mean	P-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Personal characteristics							
Age of respondent	1946	37.63	1242	38.26	704	36.52	**0.000***
Gender (male)	1984	0.29	1260	0.28	724	0.30	0.368
Married	1983	0.84	1259	0.85	724	0.82	**0.054***
Widowed	1983	0.02	1259	0.02	724	0.01	**0.031****
Single	1983	0.14	1259	0.13	724	0.17	**0.004***
Muslim	1983	0.36	1260	0.35	723	0.39	0.112
Christian	1983	0.63	1260	0.64	723	0.61	0.111
Can speak English	1974	0.70	1255	0.72	719	0.66	**0.005***
Igbo	1982	0.19	1260	0.20	722	0.18	0.149
Yoruba	1982	0.75	1260	0.75	722	0.75	0.965
Other ethnicitiy	1982	0.05	1260	0.04	722	0.07	**0.012****
Education							
No completed school education	1983	0.07	1260	0.06	723	0.10	**0.006***
Primary school education	1983	0.22	1260	0.22	723	0.24	0.386
High school diploma	1983	0.50	1260	0.50	723	0.49	0.843
Diploma	1983	0.10	1260	0.11	723	0.09	0.137
Graduate school	1983	0.10	1260	0.11	723	0.09	0.101
Household characteristics							
Household (HH) size	1972	4.51	1251	4.52	721	4.51	0.873
Number of children below 12 in HH	1948	1.30	1234	1.31	714	1.29	0.761
Number of dependents in HH	1954	2.41	1241	2.47	713	2.31	**0.090***
Number of dependents outside the HH	1862	1.53	1179	1.52	683	1.54	0.882
Business characteristics							
Months in operation	1947	98.59	1235	98.76	712	98.30	0.917
Has a savings account	1977	0.56	1260	0.59	717	0.52	**0.002***
Keeps written financial records	1968	0.37	1254	0.39	714	0.32	**0.002***
Operating inside main market	1979	0.25	1260	0.28	719	0.20	**0.000***
Number of employees	1980	1.45	1259	1.45	721	1.45	0.987
Business experience in years	1977	10.70	1256	10.88	721	10.40	0.218

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Balance across screening participants

Variable	Total		Control		Movie			MFB			Movie + MFB		
	N	Mean	N	Mean	N	Mean	P-value	N	Mean	P-value	N	Mean	P-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Personal characteristics													
Age of respondent	1243	38.27	309	38.13	327	38.46	0.79	287	37.92	0.81	307	38.52	0.60
Gender (male)	1261	0.28	313	0.25	333	0.26	0.78	292	0.30	0.21	310	0.30	0.19
Married	1260	0.85	312	0.84	333	0.84	0.87	292	0.87	0.41	310	0.85	0.67
Widowed	1260	0.02	312	0.02	333	0.04	0.15	292	0.01	0.24	310	0.02	0.56
Single	1260	0.13	312	0.13	333	0.12	0.55	292	0.12	0.68	310	0.13	0.83
Muslim	1261	0.35	313	0.34	333	0.40	**0.080***	292	0.35	0.79	310	0.32	0.71
Christian	1261	0.64	313	0.66	333	0.60	**0.096***	292	0.65	0.72	310	0.67	0.78
Can speak English	1256	0.72	311	0.71	331	0.70	0.76	292	0.71	0.97	309	0.77	0.13
Igbo	1261	0.20	313	0.19	333	0.19	0.94	292	0.23	0.30	310	0.22	0.40
Yoruba	1261	0.75	313	0.78	333	0.77	0.88	292	0.74	0.34	310	0.73	0.15
Other ethnicitiy	1261	0.04	313	0.04	333	0.04	0.62	292	0.03	0.95	310	0.06	0.18
Education													
No completed school education	1261	0.06	313	0.05	333	0.08	0.26	292	0.05	0.98	310	0.06	0.85
Primary school education	1261	0.22	313	0.24	333	0.23	0.96	292	0.22	0.61	310	0.19	0.15
High school diploma	1261	0.50	313	0.50	333	0.47	0.57	292	0.51	0.77	310	0.52	0.57
Diploma	1261	0.11	313	0.11	333	0.11	0.94	292	0.12	0.76	310	0.11	0.92
Graduate school	1261	0.11	313	0.11	333	0.10	0.74	292	0.10	0.91	310	0.13	0.44
Household characteristics													
Household (HH) size	1252	4.52	311	4.49	332	4.63	0.40	289	4.37	0.36	307	4.54	0.72
Number of children below 12 in HH	1235	1.31	307	1.39	331	1.31	0.34	285	1.27	0.19	299	1.26	0.20
Number of dependents in HH	1242	2.47	306	2.44	331	2.51	0.69	287	2.40	0.85	305	2.51	0.67
Number of dependents outside the	1180	1.52	297	1.50	308	1.47	0.94	274	1.65	0.43	288	1.51	0.93
Business characteristics													
Months in operation	1420	97.23	350	96.94	369	101.37	0.47	334	96.54	0.95	352	95.03	0.76
Has a savings account	1448	0.59	356	0.58	378	0.61	0.30	343	0.58	0.80	356	0.60	0.48
Keeps written financial records	1442	0.39	355	0.40	377	0.36	0.36	341	0.40	0.89	354	0.42	0.48
Operating inside main market	1448	0.27	356	0.27	378	0.26	0.80	343	0.26	0.86	356	0.28	0.73
Number of employees	1448	1.52	356	1.58	378	1.56	0.89	343	1.47	0.54	355	1.48	0.53
Business experience in years	1257	10.89	312	10.95	330	11.02	0.96	292	10.45	0.45	310	11.03	0.92

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Attrition in End-line Survey

Dependent Variable: Interviewed in Endline Survey	
	(1)
Movie	-0.014
	(0.02)
MFB	-0.032
	(0.02)
Movie + MFB	-0.021
	(0.02)
Pure Control	-0.069**
	(0.02)
N. of Obs.	2437
R-squared	0
P-value of F model	0.6

* p<0.05, ** p<0.01, *** p<0.001

Table 5: Item Non-response across screening participants

Variable	Total sample Have Item (in %)	INR (in %)	Control Have Item (in %)	INR (in %)	Movie Have Item (in %)	INR (in %)	MFB Have Item (in %)	INR (in %)	Movie + MFB Have Item (in %)	INR (in %)
Knowledge										
Simple Division	100	7.21	100	5.75	100	8.62	100	7.11	100	6.63
Inflation	100	2.37	100	2.18	100	2.40	100	1.46	100	2.21
Necessary documentation	100	3.77	100	3.57	100	3.21	100	3.97	100	3.61
Better savings product	100	1.74	100	2.18	100	1.60	100	1.67	100	2.01
Interest rate	100	4.07	100	4.37	100	5.21	100	3.56	100	3.61
Better loan product	100	2.67	100	3.37	100	2.40	100	2.30	100	3.61
Perceptions										
MFB will accept loan application (screening)	52	0.00	62	0.00	65	0.00	59	0.00	59	0.00
MFB will accept loan application (endline)	100	19.34	100	19.05	100	19.24	100	20.50	100	18.27
Taking a loan is too risky (screening)	52	0.00	61	0.00	66	0.00	60	0.00	60	0.00
Taking a loan is too risky (endline)	100	4.03	100	2.98	100	3.41	100	3.41	100	4.62
Trust in MFBs (screening)	52	0.00	61	0.00	66	0.00	59	0.00	61	0.00
Trust in MFBs (endline)	100	9.88	100	8.53	100	10.62	100	12.13	100	8.63
MFBs treat people with respect (screening)	50	0.68	59	0.00	63	0.00	56	2.60	60	0.33
MFBs treat people with respect (endline)	100	20.23	100	19.44	100	19.44	100	21.34	100	19.88
Perceptions about women										
Women can run businesses as well as men	100	0.81	100	0.60	100	0.20	100	0.63	100	1.41
Easier for men to receive loans than for women	100	9.88	100	9.52	100	9.62	100	9.62	100	9.04
Women make better financial decisions than men	100	2.50	100	2.38	100	2.00	100	2.72	100	2.61
Intentions										
Plan to apply for loan in next 6 months (screening)	52	0.16	62	0.00	67	0.00	59	0.71	61	0.00
Plan to apply for loan in next 6 months (endline)	100	4.66	100	3.17	100	5.21	100	4.18	100	4.62
Will save money next month (screening)	52	0.00	62	0.00	66	0.00	59	0.00	61	0.00
Will save money next month (endline)	100	4.24	100	3.77	100	4.21	100	4.81	100	3.82
Savings behavior										
Opened account on day of screening	1	0.00	0	0.00	0	0.00	1	0.00	5	0.00
Follow-up with Accion	1	0.00	0	0.00	0	0.00	7	0.00	0	0.00
Plan to follow up with Accion	5	0.00	5	0.00	6	0.00	6	0.00	7	0.00
Saved money last month	100	0.47	100	0.79	100	0.40	100	0.00	100	0.60
Savings relative to income	100	8.57	100	9.13	100	8.22	100	8.79	100	8.84
Savings at MFB	25	0.00	23	0.00	29	0.00	26	0.00	20	0.00
Savings at commercial bank	25	0.00	23	0.00	29	0.00	26	0.00	20	0.00
Borrowing behavior										
Outstanding mortgage loan	100	0.38	100	0.79	100	0.20	100	0.00	100	0.60
Outstanding loan at commercial bank	100	0.30	100	0.20	100	0.20	100	0.00	100	0.80
Outstanding loan at MFB	100	0.25	100	0.20	100	0.40	100	0.00	100	0.60
Loan from money lenders	100	0.30	100	0.00	100	0.20	100	0.21	100	0.60
Supplier credit	100	0.25	100	0.00	100	0.20	100	0.21	100	0.40
Loan from family/friends	100	0.25	100	0.00	100	0.00	100	0.00	100	0.60

Table 6: Compliance Table

Treatment Assignment	Did not attend	Attended the following screening			
		Placebo	Movie	MFB	Movie +MFB
Pure Control	99.0%	0.0%	0.2%	0.4%	0.4%
Control/Placebo	41.0%	57.9%	1.0%	0.2%	0.0%
Movie	38.0%	0.2%	61.5%	0.3%	0.0%
MFB	42.6%	0.3%	0.5%	56.6%	0.0%
MFB + Movie	41.1%	0.0%	0.2%	0.5%	58.3%

Table 7: Self-reported exposure to interventions

Exposure variables	Remembered receiving an invitation		Attended the event		Remembered seeing a movie called The Story of Gold		Remembered attending an event in one of the community halls where Accion presented		Correctly identified the message of the movie	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Movie only	0.01	-0.00	0.04	-0.01	0.23***	0.30***	0.02	0.02	0.26***	0.36***
	(0.014)	(0.011)	(0.029)	(0.016)	(0.031)	(0.031)	(0.019)	(0.027)	(0.030)	(0.035)
MFB	-0.00	-0.01	0.01	-0.00	-0.01	-0.01	0.04**	0.06**	-0.02	-0.04
	(0.014)	(0.011)	(0.030)	(0.016)	(0.031)	(0.033)	(0.019)	(0.028)	(0.030)	(0.036)
MFB + Movie	-0.00	-0.00	0.00	0.01	0.21***	0.33***	0.04**	0.07**	0.26***	0.41***
	(0.014)	(0.011)	(0.029)	(0.016)	(0.031)	(0.032)	(0.019)	(0.028)	(0.030)	(0.036)
Observations	1,976	1,259	1,975	1,259	1,974	1,258	1,974	1,259	1,979	1,261
R-squared	0.00	0.00	0.00	0.00	0.05	0.14	0.00	0.01	0.08	0.18
Controls	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Restricted Sample	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Control Mean:	0.948	0.984	0.673	0.958	0.404	0.593	0.0734	0.102	0.286	0.419

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8: Financial Literacy Indices

Financial literacy scores		Arithmetic FL Score (1)	Weighted FL Score (2)
Treatments			
Movie		-0.11	-0.14
		(0.075)	(0.112)
MFB		0.04	0.10
		(0.078)	(0.115)
Movie + MFB		-0.05	-0.04
		(0.077)	(0.114)
Gender disaggregated interaction effects (female base)			
Movie		-0.11	-0.12
		(0.088)	(0.130)
MFB		0.10	0.14
		(0.092)	(0.136)
Movie + MFB		-0.09	-0.10
		(0.091)	(0.134)
Gender disaggregated interaction effects (male interaction)			
Male		0.11	0.18
		(0.131)	(0.193)
Male*Movie		-0.03	-0.07
		(0.172)	(0.254)
Male*MFB		-0.18	-0.14
		(0.176)	(0.261)
Male*(Movie + MFB)		0.12	0.19
		(0.173)	(0.257)
p-values	$\delta_1 + \gamma_1 \neq 0$	0.36	0.38
for F-tests	$\delta_2 + \gamma_2 \neq 0$	0.57	0.98
	$\delta_3 + \gamma_3 \neq 0$	0.82	0.65
Observations		1,261	1,254
R-squared		0.14	0.12
Controls		YES	YES
Restricted Model		YES	YES
Control Mean:		5.262	7.556

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 9: Perceptions of Microfinance Banks

Trust in MFBs	If I apply to an MFB for a loan my application will be accepted		Taking a loan is too risky for me		I would trust an MFB to keep my money			MFBs treat people with respect		
	Screening	Endline	Screening	Endline	Screening	Endline (agree strongly)	Endline (agree & agree strongly)	Screening	Endline (agree strongly)	Endline (agree & agree strongly)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatments										
Movie	0.06**	0.04	-0.01	0.01	0.15***	0.08**	0.01	-0.05	0.03	0.01
	(0.026)	(0.033)	(0.038)	(0.039)	(0.034)	(0.038)	(0.033)	(0.031)	(0.038)	(0.034)
MFB	0.10***	-0.01	-0.02	0.01	0.26***	0.05	0.01	0.01	0.06	0.02
	(0.027)	(0.034)	(0.039)	(0.041)	(0.035)	(0.039)	(0.034)	(0.032)	(0.040)	(0.035)
Movie + MFB	0.08***	0.05	-0.02	0.01	0.27***	0.08**	0.06*	0.10***	0.10**	0.06*
	(0.027)	(0.034)	(0.039)	(0.040)	(0.034)	(0.039)	(0.033)	(0.031)	(0.039)	(0.035)
Gender disaggregated interaction effects (female base)										
Movie	0.04	0.00	-0.01	-0.01	0.08**	0.06	0.01	-0.08**	-0.00	-0.01
	(0.031)	(0.038)	(0.044)	(0.046)	(0.039)	(0.044)	(0.038)	(0.036)	(0.044)	(0.040)
MFB	0.10***	-0.03	-0.03	-0.01	0.25***	0.07	0.03	-0.01	0.07	0.01
	(0.032)	(0.040)	(0.046)	(0.048)	(0.041)	(0.046)	(0.040)	(0.038)	(0.047)	(0.042)
Movie + MFB	0.08**	0.05	-0.02	-0.02	0.22***	0.12***	0.05	0.07*	0.13***	0.05
	(0.032)	(0.040)	(0.045)	(0.047)	(0.040)	(0.046)	(0.039)	(0.037)	(0.046)	(0.041)
Gender disaggregated interaction effects (male interaction)										
Male	-0.03	-0.02	-0.08	-0.10	-0.17***	0.01	-0.00	-0.09	0.03	-0.02
	(0.046)	(0.057)	(0.066)	(0.068)	(0.058)	(0.066)	(0.057)	(0.054)	(0.066)	(0.059)
Male*Movie	0.06	0.13*	-0.01	0.10	0.28***	0.04	0.03	0.14*	0.11	0.08
	(0.061)	(0.075)	(0.087)	(0.090)	(0.077)	(0.087)	(0.075)	(0.071)	(0.087)	(0.078)
Male*MFB	-0.02	0.07	0.03	0.08	0.04	-0.06	-0.06	0.08	-0.01	0.03
	(0.062)	(0.077)	(0.089)	(0.092)	(0.078)	(0.089)	(0.076)	(0.074)	(0.089)	(0.080)
Male*(Movie + MFB)	0.01	0.00	-0.02	0.11	0.19**	-0.14*	0.02	0.11	-0.09	0.03
	(0.061)	(0.076)	(0.087)	(0.090)	(0.077)	(0.087)	(0.075)	(0.071)	(0.088)	(0.079)
p-values $\delta_1 + \gamma_1 \neq 0$	0.05	0.04	0.81	0.21	0	0.18	0.55	0.36	0.17	0.28
for F-tests $\delta_2 + \gamma_2 \neq 0$	0.11	0.56	0.98	0.14	0	0.93	0.63	0.27	0.48	0.61
$\delta_3 + \gamma_3 \neq 0$	0.1	0.42	0.58	0.25	0	0.77	0.23	0	0.66	0.21
Observations	1,215	1,261	1,223	1,261	1,226	1,261	1,261	1,174	1,261	1,261
R-squared	0.04	0.05	0.05	0.04	0.11	0.05	0.05	0.06	0.05	0.05
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Restricted Model	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Control Mean:	0.820	0.754	0.356	0.495	0.586	0.581	0.757	0.808	0.559	0.722

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10: Perception of Female Financial Performance

Perceptions of women at endline	Women can run businesses just as well as men	It is easier for men to receive loans than women	Women make better financial decisions than men
	(1)	(2)	(3)
Treatments			
Movie	-0.00	0.07*	0.05
	(0.020)	(0.038)	(0.030)
MFB	0.00	0.07*	0.04
	(0.020)	(0.039)	(0.031)
Movie + MFB	0.00	0.07*	0.06*
	(0.020)	(0.039)	(0.031)
Gender disaggregated interaction effects (female base)			
Movie	-0.01	0.04	-0.02
	(0.023)	(0.044)	(0.035)
MFB	0.01	0.05	0.01
	(0.024)	(0.046)	(0.037)
Movie + MFB	0.00	0.03	0.01
	(0.024)	(0.046)	(0.036)
Gender disaggregated interaction effects (male interaction)			
Male	-0.13***	0.09	-0.48***
	(0.034)	(0.066)	(0.052)
Male*Movie	0.04	0.13	0.25***
	(0.045)	(0.087)	(0.069)
Male*MFB	-0.04	0.06	0.15**
	(0.046)	(0.088)	(0.071)
Male*(Movie + MFB)	-0.01	0.16*	0.19***
	(0.045)	(0.087)	(0.070)

p-values for F-tests		Women can run businesses just as well as men	It is easier for men to receive loans than women	Women make better financial decisions than men
p-values	$\delta_1 + \gamma_1 \neq 0$	0.55	0.03	0
for F-tests	$\delta_2 + \gamma_2 \neq 0$	0.54	0.13	0.01
	$\delta_3 + \gamma_3 \neq 0$	0.88	0.01	0

	(1)	(2)	(3)
Observations	*1,261*	*1,261*	*1,261*
R-squared	*0.09*	*0.08*	*0.19*
Controls	*YES*	*YES*	*YES*
Restricted Model	*YES*	*YES*	*YES*
Control Mean:	*0.936*	*0.342*	*0.751*

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Intentions

Intentions	I plan to apply for a loan in the next 6 months		I will save some money next month	
	Screening	Endline	Screening	Endline
	(1)	(2)	(3)	(4)
Treatments				
Movie	0.05	-0.02	0.03	0.02
	(0.039)	(0.039)	(0.023)	(0.017)
MFB	0.08*	-0.06	-0.04*	-0.01
	(0.041)	(0.040)	(0.024)	(0.018)
Movie + MFB	0.10**	0.00	0.02	-0.03
	(0.040)	(0.040)	(0.024)	(0.018)
Gender disaggregated interaction effects (female base)				
Movie	0.05	-0.03	0.04	0.02
	(0.045)	(0.046)	(0.027)	(0.020)
MFB	0.06	-0.06	-0.04	-0.01
	(0.048)	(0.048)	(0.029)	(0.021)
Movie + MFB	0.09*	0.01	0.01	-0.03
	(0.047)	(0.047)	(0.028)	(0.021)
Gender disaggregated interaction effects (male interaction)				
Male	-0.01	0.15**	-0.00	0.03
	(0.068)	(0.068)	(0.041)	(0.030)
Male*Movie	0.03	0.03	-0.03	-0.01
	(0.089)	(0.090)	(0.053)	(0.040)
Male*MFB	0.06	-0.02	-0.03	0.02
	(0.092)	(0.091)	(0.055)	(0.040)
Male*(Movie + MFB)	0.04	-0.02	0.03	0.02
	(0.090)	(0.090)	(0.054)	(0.040)
p-values $\delta_1 + \gamma_1 \neq 0$	0.34	0.92	0.76	0.73
for F-tests $\delta_2 + \gamma_2 \neq 0$	0.12	0.31	0.16	0.84
$\delta_3 + \gamma_3 \neq 0$	0.09	0.87	0.36	0.81
Observations	1,233	1,259	1,232	1,259
R-squared	*0.04*	*0.05*	*0.04*	*0.07*
Controls	*YES*	*YES*	*YES*	*YES*
Restricted Model	*YES*	*YES*	*YES*	*YES*
Control Mean:	*0.547*	*0.530*	*0.902*	*0.949*

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Saving account sign up rates

Signing up for a savings account	Expressed interest in signing up for a savings account	Did not open an account at the screening but plans to follow up	Opened an account on the day of the screening
	(1)	(2)	(3)
Treatments			
Movie + MFB	-0.05*	-0.09***	0.05***
	(0.024)	(0.019)	(0.017)
Gender disaggregated interaction effects (female base)			
Movie + MFB	-0.07**	-0.10***	0.03
	(0.029)	(0.022)	(0.020)
Gender disaggregated interaction effects (male interaction)			
Male	-0.04	-0.02	-0.02
	(0.040)	(0.030)	(0.027)
Male*(Movie + MFB)	0.09*	0.02	0.07**
	(0.054)	(0.041)	(0.037)
p-values for F-tests: $\delta_1 + \gamma_1 \neq 0$	0.73	0.02	0
Observations	607	607	607
R-squared	0.08	0.09	0.10
Controls	YES	YES	YES
Restricted Model	YES	YES	YES
Control Mean:	0.128	0.108	0.0203

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

*Note that in this table the treatment being considered is Movie/MFB and the relevant comparison (control) is the MFB only group.

Table 13: Saving Behavior

Savings Behavior		Followed up with an MFB after the event	Currently has any form of formal savings account	I saved some money last month	Do you currently have savings of less than or equal to 1 month of income?
		(1)	(2)	(3)	(4)
Treatments					
Movie		0.02***	-0.01	0.02	0.01
		(0.006)	(0.029)	(0.037)	(0.039)
MFB		0.00	-0.04	0.01	0.07*
		(0.006)	(0.030)	(0.038)	(0.040)
Movie + MFB		0.00	-0.04	-0.04	0.02
		(0.006)	(0.030)	(0.038)	(0.040)
Gender disaggregated interaction effects (female interaction)					
Movie		0.02***	0.02	0.05	0.03
		(0.007)	(0.034)	(0.043)	(0.045)
MFB		0.00	-0.05	0.02	0.05
		(0.008)	(0.035)	(0.045)	-0.047
Movie + MFB		0.00	-0.04	0.01	0.03
		(0.008)	(0.035)	(0.044)	(0.047)
Gender disaggregated interaction effects (male interaction)					
Male		0.00	0.07	0.03	0.05
		(0.011)	(0.050)	(0.064)	(0.067)
Male*Movie		-0.02*	-0.09	-0.10	-0.05
		(0.014)	(0.066)	(0.084)	(0.089)
Male*MFB		-0.01	0.02	-0.05	0.05
		(0.015)	(0.068)	(0.086)	(0.091)
Male*(Movie + MFB)		-0.01	-0.01	-0.17**	-0.02
		(0.014)	(0.067)	(0.085)	(0.089)
p-values	$\delta_1 + \gamma_1 \neq 0$	0.92	0.18	0.43	0.73
for F-tests	$\delta_2 + \gamma_2 \neq 0$	0.82	0.64	0.76	0.17
	$\delta_3 + \gamma_3 \neq 0$	0.78	0.38	0.03	0.93
Observations		*1,261*	*1,261*	1,256	*1,261*
R-squared		0.03	*0.34*	0.08	*0.05*
Controls		YES	*YES*	YES	*YES*
Restricted Model		YES	*YES*	YES	*YES*
Control Mean:		0	*0.738*	0.650	*0.415*

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 14: Borrowing Behavior

Borrowing behavior	Taken out a loan in the last 4 months (1)	The loan was from an informal source (2)
Treatments		
Movie	-0.06	-0.02
	(0.039)	(0.070)
MFB	-0.07*	0.07
	(0.040)	(0.070)
Movie + MFB	-0.06	-0.08
	(0.040)	(0.069)
Gender disaggregated interaction effects (female interaction)		
Movie	-0.06	-0.07
	(0.045)	(0.081)
MFB	-0.06	0.05
	(0.047)	(0.081)
Movie + MFB	-0.05	-0.14*
	(0.047)	(0.081)
Gender disaggregated interaction effects (male interaction)		
Male	0.01	-0.11
	(0.067)	(0.121)
Male*Movie	0.01	0.19
	(0.089)	(0.166)
Male*MFB	-0.03	0.11
	(0.091)	(0.161)
Male*(Movie + MFB)	-0.01	0.21
	(0.089)	(0.159)
p-values for F-tests $\delta_1 + \gamma_1 \neq 0$	0.5	0.47
$\delta_2 + \gamma_2 \neq 0$	0.25	0.27
$\delta_3 + \gamma_3 \neq 0$	0.36	0.61
Observations	*1,261*	*410*
R-squared	*0.06*	*0.11*
Controls	*YES*	*YES*
Restricted Model	*YES*	*YES*
Control Mean:	*0.508*	*0.470*

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 15: Descriptive statistics (female)

Variable	Total sample N	Total sample Mean	Control Mean	Movie Mean	Movie P-value	MFB Mean	MFB P-value	Movie + MFB Mean	Movie + MFB P-value	Pure control Mean	Pure control P-value	Means by gender Male	Means by gender Female
Personal characteristics													
Age of respondent	1642	38.16	38.59	38.38	0.783	38.13	0.547	37.34	0.081*	38.48	0.900	36.79	38.16
Married	1674	0.89	0.89	0.88	0.682	0.90	0.676	0.87	0.428	0.90	0.647	0.72	0.89
Widowed	1674	0.03	0.02	0.04	0.103	0.01	0.321	0.02	0.929	0.03	0.465	0.00	0.03
Single	1674	0.08	0.09	0.07	0.563	0.09	0.998	0.10	0.410	0.07	0.343	0.27	0.08
Muslim	1674	0.34	0.34	0.38	0.341	0.32	0.470	0.37	0.484	0.29	0.192	0.40	0.34
Christian	1674	0.66	0.66	0.62	0.341	0.68	0.524	0.63	0.436	0.71	0.192	0.59	0.66
Can speak English	1667	0.68	0.66	0.64	0.448	0.68	0.561	0.69	0.468	0.72	0.169	0.77	0.68
Igbo	1674	0.17	0.15	0.15	0.971	0.19	0.130	0.18	0.271	0.20	**0.050***	0.28	0.17
Yoruba	1674	0.78	0.81	0.80	0.746	0.76	**0.086***	0.77	0.178	0.75	**0.058***	0.67	0.78
Other ethnicitiy	1674	0.05	0.04	0.05	0.588	0.05	0.512	0.05	0.503	0.05	0.842	0.05	0.05
Education													
No completed school education	1673	0.08	0.08	0.08	0.689	0.09	0.415	0.08	0.856	0.07	0.939	0.06	0.08
Primary school education	1673	0.23	0.25	0.25	0.995	0.20	**0.091***	0.22	0.341	0.20	0.107	0.20	0.23
High school diploma	1673	0.48	0.46	0.45	0.936	0.50	0.253	0.48	0.607	0.51	0.178	0.56	0.48
Diploma	1673	0.11	0.12	0.09	0.366	0.11	0.819	0.10	0.625	0.13	0.543	0.09	0.11
Graduate school	1673	0.10	0.10	0.11	0.762	0.10	0.956	0.12	0.486	0.08	0.441	0.09	0.10
Household characteristics													
Household (HH) size	1665	4.63	4.73	4.71	0.861	4.51	**0.060***	4.53	0.103	4.68	0.703	4.29	4.63
Number of children below 12 in HH	1644	1.35	1.38	1.38	0.970	1.33	0.591	1.26	0.193	1.41	0.743	1.27	1.35
Number of dependents in HH	1647	2.28	2.32	2.24	0.560	2.25	0.616	2.27	0.716	2.32	0.993	2.82	2.28
Number of dependents outside the HH	1572	1.41	1.23	1.38	0.291	1.58	0.024	1.33	0.477	1.58	**0.030****	1.88	1.41
Business characteristics													
Months in operation	1632	96.50	95.77	94.33	0.828	99.27	0.616	101.12	0.447	90.33	0.452	99.58	96.50
Has a savings account	1668	0.54	0.51	0.55	0.307	0.51	0.913	0.54	0.438	0.64	**0.001*****	0.64	0.54
Keeps written financial records	1662	0.37	0.36	0.36	0.902	0.35	0.968	0.38	0.458	0.39	0.363	0.38	0.37
Operating inside main market	1648	0.30	0.27	0.32	0.147	0.28	0.679	0.29	0.470	0.33	**0.082***	0.14	0.30
Number of employees	1672	1.27	1.38	1.31	0.551	1.29	0.482	1.28	0.435	1.02	**0.004*****	1.86	1.27
Business experience in years	1667	10.49	10.89	10.86	0.956	10.51	0.553	10.08	0.190	10.04	0.219	11.37	10.49

*** p<0.01, ** p<0.05, * p<0.1

Table 16: Descriptive statistics (male)

Variable	Total sample N	Mean	Control Mean	Movie Mean	P-value	MFB Mean	P-value	Movie + MFB P-value	P-value	Pure control Mean	P-value	Means by gender Male	Female
Personal characteristics													
Age of respondent	672	36.79	35.97	35.53	0.715	37.34	0.231	37.23	0.296	38.35	**0.054***	36.79	38.16
Married	683	0.72	0.73	0.68	0.315	0.77	0.446	0.69	0.438	0.75	0.817	0.72	0.89
Widowed	683	0.00	0.00	0.01	0.349	0.00		0.00		0.02	0.129	0.00	0.03
Single	683	0.27	0.27	0.31	0.376	0.23	0.446	0.31	0.438	0.23	0.585	0.27	0.08
Muslim	682	0.40	0.38	0.45	0.250	0.41	0.617	0.35	0.648	0.40	0.734	0.40	0.34
Christian	682	0.59	0.61	0.55	0.307	0.57	0.469	0.63	0.732	0.60	0.828	0.59	0.66
Can speak English	679	0.77	0.80	0.74	0.318	0.81	0.810	0.77	0.600	0.75	0.375	0.77	0.68
Igbo	682	0.28	0.26	0.23	0.638	0.27	0.824	0.31	0.297	0.33	0.210	0.28	0.17
Yoruba	682	0.67	0.69	0.71	0.662	0.72	0.628	0.60	0.129	0.63	0.367	0.67	0.78
Other ethnicitiy	682	0.05	0.05	0.05	0.991	0.01	**0.072***	0.08	0.315	0.03	0.490	0.05	0.05
Education													
No completed school education	683	0.06	0.02	0.05	0.187	0.06	0.101	0.08	**0.041****	0.09	**0.024****	0.06	0.08
Primary school education	683	0.20	0.21	0.21	0.980	0.22	0.901	0.17	0.435	0.17	0.451	0.20	0.23
High school diploma	683	0.56	0.59	0.55	0.456	0.51	0.165	0.60	0.860	0.56	0.587	0.56	0.48
Diploma	683	0.09	0.10	0.11	0.822	0.10	0.998	0.06	0.186	0.07	0.418	0.09	0.11
Graduate school	683	0.09	0.08	0.07	0.939	0.11	0.299	0.09	0.652	0.11	0.316	0.09	0.10
Household characteristics													
Household (HH) size	678	4.29	4.15	4.23	0.713	4.26	0.620	4.38	0.369	4.45	0.242	4.29	4.63
Number of children below 12 in HH	667	1.27	1.39	1.09	**0.040****	1.24	0.331	1.20	0.238	1.50	0.557	1.27	1.35
Number of dependents in HH	675	2.82	2.79	2.75	0.870	2.78	0.961	2.74	0.849	3.12	0.249	2.82	2.28
Number of dependents outside the HH	641	1.88	2.25	1.86	0.259	1.41	**0.015****	2.06	0.598	1.82	0.258	1.88	1.41
Business characteristics													
Months in operation	678	99.58	106.76	105.08	0.885	91.69	0.175	100.78	0.607	92.53	0.245	99.58	96.50
Has a savings account	682	0.64	0.70	0.62	0.176	0.61	0.144	0.64	0.347	0.62	0.189	0.64	0.54
Keeps written financial records	678	0.38	0.38	0.32	0.342	0.42	0.506	0.36	0.796	0.40	0.693	0.38	0.37
Operating inside main market	676	0.14	0.16	0.12	0.344	0.14	0.674	0.17	0.845	0.14	0.643	0.14	0.30
Number of employees	680	1.86	2.10	1.80	0.309	1.65	0.135	1.67	0.162	2.15	0.901	1.86	1.27
Business experience in years	683	11.37	10.70	10.57	0.883	11.42	0.481	11.48	0.448	13.04	**0.033****	11.37	10.49

*** p<0.01, ** p<0.05, * p<0.1

Table 17: Balance across screening participants (female)

	Total		Control		Movie			MFB			Movie + MFB		
Variable	N	Mean	N	Mean	N	Mean	P-value	N	Mean	P-value	N	Mean	P-value
Personal characteristics													
Age of respondent	894	38.73	231	39.11	240	39.10	0.892	201	38.11	0.313	214	38.44	0.466
Married	908	0.89	233	0.89	245	0.89	0.887	205	0.89	0.887	217	0.89	0.961
Widowed	908	0.03	233	0.03	245	0.05	0.200	205	0.01	0.282	217	0.02	0.641
Single	908	0.08	233	0.08	245	0.06	0.410	205	0.09	0.680	217	0.09	0.830
Muslim	909	0.34	234	0.34	245	0.37	0.438	205	0.31	0.572	217	0.33	0.871
Christian	909	0.66	234	0.66	245	0.63	0.438	205	0.68	0.648	217	0.66	0.953
Can speak English	904	0.69	232	0.69	243	0.65	0.416	205	0.66	0.496	216	0.75	0.178
Igbo	909	0.17	234	0.15	245	0.16	0.826	205	0.21	0.128	217	0.16	0.844
Yoruba	909	0.78	234	0.81	245	0.80	0.696	205	0.74	**0.096***	217	0.78	0.539
Other ethnicitiy	909	0.05	234	0.04	245	0.04	0.704	205	0.05	0.597	217	0.06	0.403
Education													
No completed school education	909	0.07	234	0.06	245	0.09	0.275	205	0.05	0.645	217	0.06	0.995
Primary school education	909	0.22	234	0.25	245	0.24	0.920	205	0.21	0.473	217	0.19	0.192
High school diploma	909	0.47	234	0.45	245	0.45	0.954	205	0.51	0.252	217	0.48	0.606
Diploma	909	0.12	234	0.13	245	0.10	0.398	205	0.13	0.966	217	0.12	0.775
Graduate school	909	0.11	234	0.11	245	0.10	0.785	205	0.09	0.623	217	0.14	0.318
Household characteristics													
Household (HH) size	904	4.57	233	4.63	244	4.70	0.822	203	4.38	0.088	216	4.47	0.299
Number of children below 12 in HH	893	1.32	230	1.39	244	1.35	0.622	200	1.28	0.282	211	1.22	0.122
Number of dependents in HH	896	2.28	229	2.30	243	2.31	0.969	201	2.23	0.761	215	2.29	0.996
Number of dependents outside the HH	851	1.36	222	1.15	225	1.32	0.264	194	1.66	**0.010****	202	1.40	0.151
Business characteristics													
Months in operation	885	96.58	228	94.36	238	100.43	0.444	197	97.27	0.758	215	94.48	0.973
Has a savings account	908	0.55	234	0.53	245	0.58	0.215	205	0.52	0.939	217	0.58	0.262
Keeps written financial records	902	0.38	233	0.37	244	0.36	0.854	203	0.38	0.746	215	0.42	0.257
Operating inside main market	908	0.32	234	0.30	245	0.33	0.354	205	0.31	0.694	217	0.33	0.416
Number of employees	908	1.31	234	1.35	245	1.27	0.545	205	1.28	0.704	216	1.37	0.892
Business experience in years	905	10.85	233	10.87	242	11.40	0.616	205	9.98	0.258	217	10.94	0.952

*** p<0.01, ** p<0.05, * p<0.1

Table 18: Balance across screening participants (male)

Variable	Total		Control		Movie			MFB			Movie + MFB		
	N	Mean	N	Mean	N	Mean	P-value	N	Mean	P-value	N	Mean	P-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Personal characteristics													
Age of respondent	349	37.08	78	35.23	87	36.68	0.376	86	37.47	**0.095***	93	38.71	**0.013****
Married	352	0.75	79	0.71	88	0.72	0.998	87	0.80	0.152	93	0.77	0.331
Widowed	352	0.00	79	0.00	88	0.01	0.339	87	0.00		93	0.00	
Single	352	0.24	79	0.29	88	0.27	0.872	87	0.20	0.152	93	0.23	0.331
Muslim	352	0.38	79	0.33	88	0.48	**0.038****	87	0.43	0.205	93	0.30	0.695
Christian	352	0.61	79	0.66	88	0.52	**0.057***	87	0.56	0.213	93	0.69	0.678
English	352	0.81	79	0.77	88	0.83	0.399	87	0.83	0.374	93	0.81	0.584
Igbo	352	0.29	79	0.29	88	0.26	0.615	87	0.25	0.582	93	0.34	0.461
Yoruba	352	0.68	79	0.68	88	0.70	0.721	87	0.75	0.367	93	0.59	0.214
Other ethnicitiy	352	0.03	79	0.03	88	0.03	0.721	87	0.00	0.137	93	0.06	0.226
Education													
No completed school education	352	0.04	79	0.03	88	0.03	0.721	87	0.06	0.306	93	0.04	0.531
Primary school education	352	0.20	79	0.20	88	0.22	0.770	87	0.22	0.804	93	0.17	0.611
High school diploma	352	0.57	79	0.62	88	0.53	0.277	87	0.51	0.139	93	0.61	0.922
Diploma	352	0.09	79	0.05	88	0.13	0.162	87	0.09	0.307	93	0.08	0.513
Graduate school	352	0.10	79	0.10	88	0.09	0.863	87	0.13	0.613	93	0.10	0.922
Household characteristics													
Household (HH) size	348	4.39	78	4.06	88	4.43	0.207	86	4.34	0.356	91	4.70	**0.038****
Number of children below 12 in HH	342	1.30	77	1.38	87	1.20	0.301	85	1.24	0.467	88	1.36	0.949
Number of dependents in HH	346	2.95	77	2.87	88	3.07	0.555	86	2.80	0.839	90	3.02	0.646
Number of dependents outside the HH	329	1.92	75	2.52	83	1.87	0.200	80	1.63	**0.065***	86	1.78	0.114
Business characteristics													
Months in operation	350	104.27	79	109.81	87	107.10	0.943	87	91.21	0.208	92	109.64	0.991
Has a savings account	352	0.67	79	0.70	88	0.68	0.895	87	0.62	0.309	93	0.71	0.848
Keeps written financial records	352	0.41	79	0.42	88	0.33	0.297	87	0.47	0.491	93	0.43	0.871
Operating inside main market	352	0.17	79	0.18	88	0.11	0.193	87	0.16	0.781	93	0.22	0.537
Number of employees	352	1.81	79	2.05	88	1.90	0.700	87	1.68	0.399	93	1.66	0.352
Business experience in years	352	10.98	79	11.18	88	9.99	0.241	87	11.55	0.761	93	11.24	0.963

*** p<0.01, ** p<0.05, * p<0.1

Annex 1: Invitation

Annex 2 - Attrition

Attrition is largest in the pure control group (25.5%) when compared to the control and treatment groups (20.2%). Table 4 suggests a random pattern of attrition for the 3 treatment arms when compared to the placebo control group, but a large and significant differential attrition in the pure control group. This differential attrition is reinforced by the balance results from Table 1, and may be resulting from the fact that pure control business owners were only contacted at baseline and follow-up, whereas all other groups had another intermediate contact to receive the screening invitation making them (i) more aware of the activities and (ii) easier to track. Given the significantly lower response rate in the pure control group, we subsequently analyze treatment effects by comparing the placebo screening group with the different treatment arms.

When data are analyzed by simply excluding respondents with missing values for any relevant outcome measures (item non-response, or INR), this could again cause biased results if missingness is systematically related to a respondent's potential outcomes. Table 5 presents INR rates for main outcomes measures across different treatment and control groups. For instance, for the question of basic understanding of inflation, it can be seen that 100 percent of the surveyed micro-entrepreneurs are asked this question (column 1) and that 2.37 percent of those who are asked do not give a response (column 2). Overall, the data in Table 5 indicate that INR for main outcome measures is not a critical issue (most of the times INR rates are <5%) and non-differential across treatment and control groups. Interestingly, INR is the lowest for measures of intentions, savings and borrowing behavior, whereas the highest INR rates (between 10 and 20 %) can be observed for questions related to perceptions about MFBs, possibly reflecting cases where business owners have not interacted with MFBs and therefore have not been able to form an opinion. Table 5 also reveals a striking increase in INR for the questions of perceptions about MFBs at the end-line survey relative to the data that were collected shortly after the screening. This increase does not interact with a particular treatment status and may owe to different modes of interviews and the design of the questionnaires: While the short survey right after the screenings was self-administered by attendees, the end-line survey was conducted face-to-face. To avoid unit nonresponse and potential measurement errors, the self-administered questionnaire was designed to be as simple as possible and only asked dichotomous - Yes or No - type of questions with no explicit "Don't know" or "Refusal" choices. This means that direct comparison over time (e.g., through a difference-in-difference approach) would present challenges; however, similar response patterns across treatment groups support the idea that responses are at least internally consistent.

Given the rather low INR rates for most outcome measures and the fact that they are indistinguishable across control and treatment groups, we take no specific measures to address this type of missingness. Nevertheless, we do account for missing data on covariates: In the regression analysis, coefficients of predictors of interest are adjusted by using a procedure advocated by Cohen and Cohen (1985), whereby measures with missing values are replaced by zero and a dummy variable indicating such missing values is included. The logic behind this approach is that the dummy variables adjust the parameters for theoretically relevant predictors by removing variance which can be attributed to missing data that are lurking in the dependent variable (McKnight et al 2007). This also avoids losses in sample size during regression analysis in cases where observations would otherwise be dropped due to missing covariate responses.