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Using consumer financing to accelerate uptake of latrines in rural Cambodia

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Financing is emerging as a linchpin for accelerating uptake of sanitary latrines at scale amongst the rural poor of Cambodia. This paper presents the results of a randomized controlled trial that demonstrated that willingness to purchase a latrine at market price increases four-fold when financing is offered. Two subsequent pilots with two microfinance institutions validated the consumer interest in financing, but demonstrated the operational and financial challenges of executing such a program at scale. The objective of this presentation is to share these learnings and stimulate creative discussion on how to overcome these challenges.

Introduction

Poor rural sanitation accounts for 17% of all children under 5 deaths in Cambodia (WHO/UNICEF, 2008) and 448 million USD per year in lost productivity (Hutton, 2008). iDE Cambodia's Sanitation Marketing program facilitates the market for rural sanitation by training small-scale concrete producers in the production and sale of sanitary latrines. As iDE seeks to increase penetration latrines in its program, it was faced with several key questions? *What is the uptake of latrines (true willingness to pay) at different price points, i.e., what is the full demand curve for latrines? Does offering financing for latrines increase willingness to pay for latrines?*

In 2012-13, iDE Cambodia partnered with IDinsight to answer these questions and inform iDE Cambodia's sanitation program scale-up. This paper describes the results of a randomized controlled trial testing the impact of offering MFI loans for latrines versus the current model of cash on delivery. The Bill & Melinda Gates Foundation and the Stone Family Foundation funded this project, and the World Bank's Water and Sanitation Program provided technical support.

Methodology

Part 1: Experimental Study - Evaluation Design

Background

iDE's Sanitation Marketing program facilitates the market for rural sanitation by training small-scale concrete producers to make and market sanitary latrines in rural Cambodia. The experimental study answers two questions:

1. What is the true willingness to pay (WTP) for latrines?
2. What is the impact of consumer financing on latrine uptake?

Intervention

A full-time latrine sales team worked with VisionFund microfinance institution to offer loans (group liability, 12-month declining balance loan at 2.8% interest per month) for latrines in treatment villages. The "non-financing" group received the standard village latrine sales pitch, using the Becker-deGroot-Marschak (BDM) mechanism to determine the price they were willing to pay, with full cash payment required on delivery of the latrine. The "financing" group received the same standard village sales pitch, but was also offered loans specifically to finance the purchase of a latrine. The BDM game was used to determine the maximum willingness to pay in terms of *monthly installment*. The schematic below highlights the terms of the loan and how it was integrated into the BDM pricing game:

BDM Structure with financing – mimics standard village sales process closely
1. Client receives standard village group and individual sales pitch
2. Client educated on financing package during group and individual sales pitch
3. Client plays BDM game – states desired maximum monthly installment payment to make over 12 months (as per terms described above)
4. Client randomly draws a monthly payment from envelope. If drawn price is lower than bid price, must buy; if drawn price is higher than bid, cannot buy

Sample
Thirty representative villages were selected from Kampong Thom province. Fifty households that did not own a latrine in each village were selected at random to participate.

Methods
The true WTP for latrines was measured using the Becker-deGroot-Marschak (BDM) mechanism, which is an incentive compatible auction procedure used in experimental economics to accurately measure WTP. Bids were binding, and winning respondents were required to purchase a latrine. A cluster randomized trial was then used to assess the impact of financing on latrine uptake. Villages were randomly assigned into 15 control (Cash on Delivery) and 15 treatment (MFI Loan) villages.

Part 2: Operational pilots
The findings of the experimental study were then used to design two simultaneous 9-month pilots during which, partnerships with MFIs were set up to test the operational and financial viability of the model. The operational model was very similar to that of the RCT, wherein all households experienced a group sales meeting during which they were offered the option to purchase on credit. The loan officer was there at the meeting to answer any questions and to begin the loan process. iDE served the role of facilitating consumer financing between the MFI partners and the concrete businesses. Pricewaterhouse Coopers was engaged at the end of the pilots to conduct an audit to assess the financial viability of the test model.

Table 1. Operational pilots: household loan details

Loan Term	Kandal Province	Prey Veng Province
Basic Structure	Group Loans (2-10 households)	Group Loans (3-6 households), Individual Loans (1 district)
Repayment Location	Village	Group Loans: Village Individual Loans: Branch (initially but later changed to village)
Size of Loan	\$40-\$350	\$40-\$250
Duration	4-12 months	6-12 months
Repayment Method	Declining or Balloon	Group Loans: Balloon Individual Loans: Declining
Interest Rate (per month)	2.6%-2.8%	Group loans: 2.85% Individual Loans: 1.65%-2.85%
Disbursement	Small Loans: To Supplier Large Loans: To Household	Small Loans: To Supplier Large Loans: To Household

Results and conclusions

The experimental study showed that average willingness to pay for a low-cost sanitary latrine is 28 US dollars (USD), as compared to the average market price of 50 USD. In the cluster randomized trial, we test the impact of offering a latrine financing package (in the form of a declining balance 12 month loan with 2.8% monthly interest) on latrine uptake. We find that willingness to pay for latrines increases from 28 USD without financing to 50 USD in principal (excluding interest on the loan) with financing. This means that 12% of all non-latrine owners would buy a latrine at market price without financing, whereas 50% would buy a latrine at market price with financing (cf Figure 1). Furthermore, the operational cost per latrine sold is decreased by 70% in the financing arm, because many more latrines are sold at each village sales meeting. This four-fold increase in sales at market price and 70% decrease in operational cost per latrine sold due to financing provides strong evidence that expanding access to consumer financing for latrines has the potential to dramatically improve sanitation in rural Cambodia.

The results from the experimental studies were then applied to two pilots with VisionFund MFI and Kredit MFI. The pilots produced 1,984 latrine loans over nine months, validating demand for sanitation loans (cf Table 2). However, many operational and financial viability challenges emerged. While the latrine loans were demonstrated to be slightly profitable and showed 100% repayment rates by the end of the pilot—both MFI partners still showed reluctance in integrating SanFin at scale after the pilot programs.

Three reasons are likely for this reluctance. First, MFIs are for-profit enterprises and latrine loans, though demonstrating profitability, are still less profitable than their other products because latrines are not income-generating assets. Thus, latrines loans and other social-impact loans have been restricted to a minority percentage of the MFI's total portfolio and are not considered a core part of the business.

Second, WASH financing is still a nascent field, and MFIs may be waiting for more proof of SanFin's positive business impact. The first successful partnership in Cambodia between an MFI and a WASH organization (Hydrologic) began only three years ago. At present, finding interested MFI partners is easier than three years ago, with MFIs voluntarily seeking to partner with development organizations on social loans. That is, financing products with positive social impact is becoming a more prominent consideration for MFIs, especially as they are looking to attract social investment funds, improve their public image, and compete for rural market share. However, it is too early to see MFIs making large institutional changes to accommodate the scale and speed of SanFin that the WASH sector is looking for.

Third, by the end of the SanFin pilot, both MFI partners expressed interest in scaling up SanFin. However, when presented the ambitious targets of SMSU, they expressed significant reservations. In discussions with the management it seems that capital is not an issue, as they have access to cheap/free capital from organizations like KIVA that have a focus on WASH. Rather, it is in part a function of their lack of capacity—e.g., insufficient human resources and limited MIS capacity—to reach scale as quickly as SMSU would require. Further support by the project would likely be needed to help the MFI achieve scale quickly.

Unclear commitment and limited capacity of the MFIs to do SanFin at scale begs the question of whether the efforts to engage them are indeed worth the cost-savings of SanFin that the WTP research demonstrated. Such challenges also beg the question of what other models are appropriate for providing financing to rural households that may avoid the need for external institutional partnerships. Since the pilots, iDE continues to work with MFI partners to overcome these challenges, and meanwhile is also piloting in-house financing, which to date, in just 6 months, has produced over 1,200 loans for water filters at iDE's sister company, Hydrologic. More research and testing is ongoing to inform the respective benefits of an in-house financing model as compared with an external partnership model.

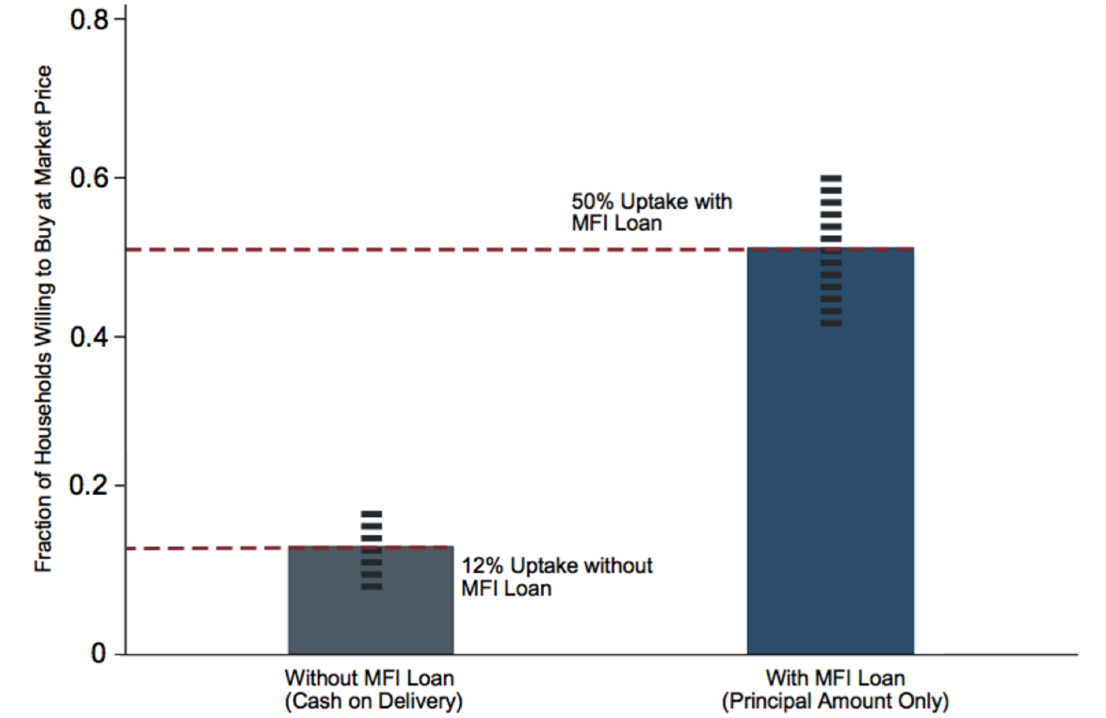

Figure 1. Uptake of latrines at market price with and without an MFI Loan

Source: IDinsight (2013) Understanding Willingness to Pay for Sanitary Latrines in Rural Cambodia

Table 2. Operational pilots: key results

Metric	Data	Implication
Loans disbursed	Kandal: 941 loans disbursed Prey Veng: 1,053 loans disbursed (over 9 months, confirmed by MFIs)	Households want loans designed to help improve family sanitation
Closing rate of cash and credit sales (Percentage of people who purchase after hearing a sales pitch – e.g., if 2 people out of a 10-person sales audience make a purchase, then the close rate is 20%)	Kandal: 65% avg. closing percentage Prey Veng: 45% avg. closing percentage	Households have a strong desire to purchase a latrine as closing percentages are high by commercial standards
Distribution of sales on cash vs. credit	Kandal: 35% of orders on cash Prey Veng: 64% of orders on cash	Credit sales do not eliminate cash sales and "younger" provinces (less previous NGO/government sanitation work, less of an MFI presence, lower sanitation coverage rates) seem to have higher demand for cash sales (could be other reasons)

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