The Value of Advice:

(1) Evidence from Agriculture
(2) Evidence from Small Business

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On-Demand Mobile Information

• Awaaz Otolo, a mobile-phone based extension service

• Key features:
  • Push calls weekly (5 minutes long)
  • Question and answer service (24 hour response)
  • Forums on various topics

• Content created by specialized team, based on incoming questions as well as surveys of randomly selected participants

• Platform created by Berkeley, Stanford Computer scientists
Agriculture Motivation

- Dramatic variation in productivity around the world

- (1) Cotton yields in India are 1/3 of those in China
- (2) Many “entrepreneurs” running businesses by default, rather than choice
  - (More generally, management practices vary widely around the world)

- Can ICT be used to increase productivity?
  - Low-cost, easily scalable intervention
Gujarat Cotton Study

- 1,200 cotton farmers in Gujarat
- Randomly selected from all cotton farmers
- Averages: Age 46, 4 years education, 6 acres land

- In cooperation with well-known local NGO

- Study design:
  - 400 Control
  - 800 AO service
    - Half supplemented with physical extension
    - Random usage reminders to half of AO sample

- Usage:
  - 63% of treatment population called in with a question
  - 54% of total push-call content heard (mean: 120 minutes)

- Phone and paper-based surveys, low attrition
Sources of information

- Treatment farmers more likely to report cell phone as primary source of information for:
  - Cotton pesticides (16%)
  - Cotton fertilizers (7%)
  - Cotton seeds (10%)
  - Wheat pesticides (0%)
  - Cumin pesticides (4%)
  - Pest identification (37%)
  - Weather (24%)
  - Crop planning (6%)
  - Prices (0%) < Important, as no price info provided
Changes in agricultural practices and knowledge

- Analyze indices of behavior to adjust for multiple outcomes
- Z-score of best practices (control group has mean 0, standard deviation one)

Estimates of Effect Size

<table>
<thead>
<tr>
<th>Agricultural Practices</th>
<th>Effect</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All pest management practices</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Cotton pest-management</td>
<td>.08</td>
<td>**</td>
</tr>
<tr>
<td>All fertilizer practices</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Cotton fertilizer practices</td>
<td>.11</td>
<td>**</td>
</tr>
<tr>
<td>Cotton sowing and input practices</td>
<td>.09</td>
<td>**</td>
</tr>
</tbody>
</table>

- No measured effect on knowledge
# Effect on yield

<table>
<thead>
<tr>
<th></th>
<th>Control Mean</th>
<th>Entire Sample Treatment Effect</th>
<th>Reminder Call Sample Treatment Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Midline</td>
<td>Endline</td>
</tr>
<tr>
<td>Log Agricultural Profit</td>
<td>11.46</td>
<td>0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>Cotton Yield (kg/acre)</td>
<td>694</td>
<td>31.5</td>
<td>19.6</td>
</tr>
<tr>
<td>Wheat Yield (kg/acre)</td>
<td>981</td>
<td>-33.7</td>
<td>-32.6</td>
</tr>
<tr>
<td>Cumin Yield (kg/acre)</td>
<td>172</td>
<td>-1.2</td>
<td>48.3**</td>
</tr>
</tbody>
</table>

- 10 percent increase in yields (p < .1) for cotton yield
- 33 percent increase in yields (p < .05) for cumin yield
Willingness to Pay

- Many instances of prices reducing use/demand
- Estimate willingness to pay by randomly varying price

- 80% would pay $1 for six months
- 20% would pay $5
- Service might break even
Technology-enabled Business Training for MSMEs

Evidence in Financial Inclusion: New Findings and their Applications
Manila
Shawn Cole, Harvard Business School

Principal Investigators:
Dr. Shawn Cole,
Harvard Business School
Dr. Antoinette Schoar,
MIT Sloan School of Management

Partners:
Previous research: Inspiration

• **Keep it Simple: Financial Literacy & Rules of Thumb (Drexler, Fischer and Schoar 2009)**

  ✓ The prior research has shown that SMEs benefit from FLT training. But the design of the training program is crucial in achieving an impact. The authors find no effect using a standard accounting training. However, a simplified, rule-of-thumb training produced significant improvements in business practices and outcomes.

• **The Value of Advice: Evidence from Mobile Phone Based Agricultural Extension (Cole and Fernando 2012)**

  ✓ The research shows that in an agricultural context advice delivered via a phone-based platform significantly improves farm outcomes, such as pesticide usage or shift to higher return cash crops.

=> Need for an innovative solution that could combine scalability and customization of advice: Mobile-based on-demand advice platform
## Drexler, Fischer and Schoar (2013): Traditional Accounting vs. Rules of Thumb

<table>
<thead>
<tr>
<th>Traditional Accounting</th>
<th>Rule of Thumb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produce income statement and profit projection for the business</td>
<td>Keep two “drawers” – one for the business and one for the home</td>
</tr>
<tr>
<td>Manage working capital needs</td>
<td>Assign yourself a wage for the month</td>
</tr>
<tr>
<td>In-depth cash management</td>
<td>Any “borrowing” from the business has to be paid back in 5 days and vice versa</td>
</tr>
<tr>
<td>Accounts receivable management</td>
<td>Only give credit to customers if prior credit purchase has been paid off first</td>
</tr>
<tr>
<td>Increase savings and reduce impulse purchases</td>
<td>Physically hide savings in places that are difficult to get to</td>
</tr>
</tbody>
</table>
Improving the financial heuristics training product

**Phase 1**
- Classroom-based
- Dominican Republic
- MFI: ADOPEM

**Phase 2**
- Mobile Phone
- India
- MFI: Janalakshmi Financial Services, India

**Phase 3**
- Mobile Phone
- India & Philippines
- Janalakshmi
- NWTF

Courtesy: IFMR
Courtesy: USAID
Features of the Mobile Platform

Business Training
- Users receive business advices on the phone in their preferred language on a weekly basis. (Indian languages Hindi, Kannada and Tamil)

Missed call Service
- Users can record their questions, messages and feedback
- Browse through previous messages and answers to their questions.

Expert advice
- The questions posted by users were answered by team of business experts
Characteristics of the sample

- 2,400 Janalakshmi Loan Clients (half treatment, half control)

Distribution of participants by Industry types:
- Trade: 58%
- Service: 26%
- Manufacturing: 16%

Loan size ranges from Rs. 50,000 to Rs.2,00,000 (750$ to 3000$)
Modules covered in Phase 2

- Cash Separation
- Trade Credit
- Inventory Management
- Supplier Management
- Marketing
- Estimating profits
Face to Face on Boarding

**Step 1:** Enumerators introduce users to the three steps of cash separation

**Step 2:** Handover - Cash Separation visual aid

**Step 3:** Demo of the mobile platform
“Keep your Business cash and Household cash in two different locations. For example keep two drawers one for the business cash and other one for the household cash.“

“Now that you have two places for the cash, the second step is the following: You need to know how much money gets into the household drawer? For this, at the beginning of each week take a fixed amount of money for the weekly household expenses from your business drawer and put it into the household drawer. This is like paying you a salary from the business every week.”
Some findings from the study

Call Pickup vs Listenership

Call pickup attempts vs Listenership
Some findings from the study

Listening pattern by different training modules

Listening pattern across industry types and training modules
## Effect of Training on Business Practices

### Table: Summary Statistics on Business Practices at Baseline

<table>
<thead>
<tr>
<th>Variable</th>
<th>Baseline Level</th>
<th></th>
<th>p-value of t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Treatment</td>
<td></td>
</tr>
<tr>
<td>Withdraw cash from business for personal use</td>
<td>0.85</td>
<td>0.87</td>
<td>0.167</td>
</tr>
<tr>
<td>Withdraw cash in an irregular manner (whenever respondent needs)</td>
<td>0.531</td>
<td>0.535</td>
<td>0.858</td>
</tr>
<tr>
<td>Don’t have a specific place to store revenue</td>
<td>0.029</td>
<td>0.031</td>
<td>0.79</td>
</tr>
<tr>
<td>Maintain business records</td>
<td>0.449</td>
<td>0.478</td>
<td>0.16</td>
</tr>
<tr>
<td>Sell goods on credit</td>
<td>0.55</td>
<td>0.559</td>
<td>0.671</td>
</tr>
</tbody>
</table>
### Table: Summary Statistics on Business Practices at Endline

<table>
<thead>
<tr>
<th>Variable</th>
<th>Endline Level</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Treatment</td>
<td>p-value of t-test</td>
<td>Engaged</td>
</tr>
<tr>
<td>Withdraw cash from business for personal use</td>
<td>0.81</td>
<td>0.79</td>
<td>0.2878</td>
<td>0.77</td>
</tr>
<tr>
<td>Withdraw cash in an irregular manner (whenever she needs)</td>
<td>0.60</td>
<td>0.58</td>
<td>0.3246</td>
<td>0.62</td>
</tr>
<tr>
<td>Don’t have a specific place to store revenue</td>
<td>0.04</td>
<td>0.05</td>
<td>0.4462</td>
<td>0.05</td>
</tr>
<tr>
<td>Maintain business records</td>
<td>0.50</td>
<td>0.50</td>
<td>0.7271</td>
<td>0.53</td>
</tr>
<tr>
<td>Sell goods on credit</td>
<td>0.48</td>
<td>0.44</td>
<td>0.0975*</td>
<td>0.44</td>
</tr>
<tr>
<td>Number of new customers attracted during the last two months</td>
<td>2.06</td>
<td>2.157</td>
<td>0.0222**</td>
<td>2.159</td>
</tr>
<tr>
<td>Got a better agreement from supplier upon renegotiating</td>
<td>0.35</td>
<td>0.38</td>
<td>0.1677</td>
<td>0.36</td>
</tr>
</tbody>
</table>
Impact Evaluation

• No effect on profits, sales
# Key takeaways to partners

| Scalability | • Easy to operate  
| • Less human resources required  
| • Voice messages delivered to multiple customers at the same time (preferred time) |
| Personalization | • Content can be fine tuned based on the target group  
| • Timely feedback and suggestions |
| Cost effectiveness | • Cost of sending voice call vs visiting clients or conducting classroom based trainings  
| • Effective monitoring and tracking |
| Other Benefits | • Client engagement  
| • Provide timely information  
| • Other follow-ups / reminders |
Version 2.0

- Enhanced technology platform
- Larger sample size
- Entirely revamped curriculum
- Tighter industry focus: retail only
- Professional voice actors
- Implementation in India and Philippines
Thank you