Some thoughts on Migration and Urban Services for the Poor

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Outline

Listened to the presentations yesterday, Paid attention to the questions from the audience, and
Thought that it would be valuable for me to present research results on two topics:

• Migration
  – Is there demand for workers in the city?
  – Permanent Migration versus Seasonal Migration

• Sanitation
  – Is it possible to solve the urban service delivery challenge?
Data and Treatments in 2008

- Census of 100 villages to identify vulnerable households
- Baseline survey of 1900 eligible households before 2008 Monga (July)

- Randomly assigned incentives to migrate during the 2008 Monga
  - Cash (37 villages): 600 Taka ($8.50)
  - Credit (31 villages): Loan of same amount
  - Information / endorsement (16 villages)
  - Control (16 villages)

- Follow-up Survey in December 2008
- Further long-run follow-ups (latest in 2011)
1. Seasonal out-migration has large positive returns
   - High take-up, large consumption effects, and re-migration
2. Why were people not migrating?
   - We identify a constraint: risk aversion
3. Tests of the model:
   - Heterogeneity analysis and new round of experiments suggest that falling below subsistence is an important risk?
4. Are the results quantitatively sensible?
   - How risk averse do people have to be, given our data?
   - There are probably other constraints, like savings constraints
Program Evaluation Results 1

1. 24% of households induced to send a seasonal migrant

2008 Migration Rate
Program Evaluation Results 2:  
Effects of Migration on Consumption

<table>
<thead>
<tr>
<th></th>
<th>OLS</th>
<th>ITT</th>
<th>IV</th>
<th>Control Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Expenditures</td>
<td>115.073***</td>
<td>44.183*</td>
<td>260.139**</td>
<td>702.9</td>
</tr>
<tr>
<td></td>
<td>(17.170)</td>
<td>(23.926)</td>
<td>(128.053)</td>
<td></td>
</tr>
<tr>
<td>Non Food Expenditures</td>
<td>67.187***</td>
<td>16.726*</td>
<td>99.924*</td>
<td>251.2</td>
</tr>
<tr>
<td></td>
<td>(8.693)</td>
<td>(9.098)</td>
<td>(51.688)</td>
<td></td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>180.894***</td>
<td>60.139**</td>
<td>355.115**</td>
<td>954.1</td>
</tr>
<tr>
<td></td>
<td>(21.432)</td>
<td>(29.683)</td>
<td>(158.835)</td>
<td></td>
</tr>
<tr>
<td>Caloric intake (per person per day)</td>
<td>349.647***</td>
<td>129.901***</td>
<td>757.602***</td>
<td>2060.0</td>
</tr>
<tr>
<td></td>
<td>(42.097)</td>
<td>(48.057)</td>
<td>(250.317)</td>
<td></td>
</tr>
<tr>
<td>Total Calories from Protein</td>
<td>7.520***</td>
<td>2.657**</td>
<td>15.573**</td>
<td>45.3</td>
</tr>
<tr>
<td></td>
<td>(1.017)</td>
<td>(1.273)</td>
<td>(6.830)</td>
<td></td>
</tr>
<tr>
<td>Expenditure on Children's Education</td>
<td>-5.105**</td>
<td>4.299*</td>
<td>21.487</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>(2.423)</td>
<td>(2.405)</td>
<td>(13.536)</td>
<td></td>
</tr>
</tbody>
</table>

- Per capita expenditures, food expenditures and caloric intake increase 30-35% among migrant households.
- Quantitatively, easily dominates the cost of the bus ticket.
3. Treatment households continue to re-migrate a year later and 3 years later...absent any further incentives

87% of migrants go back and work for the same employer
1. Seasonal out-migration has large positive returns
   – High take-up, large consumption effects, and re-migration

2. Why were people not migrating?
   – We identify a constraint: risk aversion

3. Tests of the model:
   – Heterogeneity analysis and new round of experiments suggest that falling below subsistence is an important risk?

4. Are the results quantitatively sensible?
   – How risk averse do people have to be, given our data?
   – There are probably other constraints, like savings constraints
Next steps

General Equilibrium effects
Unintended Consequences
Pressure Testing Practical feasibility
Replication Exercises in Indonesia, Ghana, Malawi,...

Evidence Action’s Beta ‘No Lean Season:’ Testing the Path to Scale
MIGRANTS’ ACCESS TO PUBLIC SERVICES
Agenda

- Poverty is ‘urbanizing’ with migration.
- Lack of safe water, sanitation and other services in urban slums
- Understanding sanitation marketing through project in Bangladesh (Science 2015)
- The construction and management of community toilets in urban slums in Orissa
- Replacing OD habits with toilet habits in Nairobi slums
- Fund innovative solutions and evaluations through JPAL Urban Services Initiative (co-directed with Galiani, Duflo)
## Experimental Design

<table>
<thead>
<tr>
<th>Group</th>
<th>Villages</th>
<th>Neighborhoods</th>
<th>Households</th>
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</thead>
<tbody>
<tr>
<td>Control</td>
<td>22</td>
<td>66</td>
<td>3,186</td>
</tr>
<tr>
<td>LPP Only</td>
<td>12</td>
<td>49</td>
<td>2,500</td>
</tr>
<tr>
<td>LPP + Subsidy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Intensity</td>
<td>115</td>
<td>5,382</td>
<td></td>
</tr>
<tr>
<td>Medium Intensity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Intensity</td>
<td>63</td>
<td>5,535</td>
<td></td>
</tr>
<tr>
<td>LPP + Subsidy + Supply</td>
<td>116</td>
<td>5,535</td>
<td></td>
</tr>
<tr>
<td>Supply Only</td>
<td>10</td>
<td>34</td>
<td>1,651</td>
</tr>
</tbody>
</table>
Sanitation Investment Decisions Appear Strongly Inter-linked Across Households in a Community

Figure 2: Effect of Proportion of Community Treated on Latrine Ownership
Estimates with 95% confidence intervals

Displays estimated latrine ownership rates. Includes union fixed effects and controls for cluster average ownership of latrine at baseline. Standard errors are clustered at the neighborhood level. Controlling for average ownership of hygienic latrines at baseline (rather than any latrine) produces nearly identical results.
Effect of Proportion of Community Treated on OD & Hanging Latrine Use

Estimates with 95% confidence intervals

Difference from Control

Displays estimated rates of open defecation and hanging latrine use. Includes union fixed effects and controls for cluster average access to latrines at baseline. Standard errors are clustered at the neighborhood level.
Migrants Carry the Good (Learnt) Behavior with them to cities

Figure 2 – Sanitation Marketing Decreases Open Defecation (OD) Among Migrants
(Point Estimates and 90% Confidence Intervals)
Community Toilets in two Indian Cities

- High open defecation rates in urban slums
- Create replicable model of improved sanitation for urban slums
- Combines research with Designers, Architects, Community organizers, and two city corporations

**Hardware**
- Toilets designed to optimize user experience
  - Comparison of Base vs. Enhanced toilets
  - How do different quality improvements in physical infrastructure of community toilet facilities impact open defecation rates in urban slums

**Software**
- Management of Toilets
  - How do different types of facility management models (Private vs. Community) impact sustainability of these facilities in urban slums?
  - What type of behavioral interventions reduce open defecation rates?

**Research**
- Rigorously evaluated through an RCT
  - Data Collection
  - Impact Evaluation
  - Qualitative and Quantitative Analysis

- High open defecation rates in urban slums
Creating a Toilet Habit

• Triandis (1977, 1980), Theory of Interpersonal Behavior

Habits = “situation-specific sequences that are or have become automatic”
Just run your tongue across your teeth

You'll feel a film—that's what makes your teeth look "off color" and invites decay and gum troubles

Old methods fail to remove it successfully. Beneath it are the dazzling white teeth you envy. Make this remarkable dental test—you may have beautiful teeth and not realize it.

The test that's offered here has been made by thousands with remarkable results. Authorities pronounce it the most unique of all dental methods.

You want clear, beautiful teeth. You can have them quickly. For this new way goes to the basis of "off color" teeth, the source of most tooth and gum troubles.

In a few years, largely on dental advice, it has changed the tooth cleansing habit of the world. In justice to yourself, use the coupon below.

It removes that stubborn film, the great enemy of teeth and gums

Tooth troubles and gum troubles now are largely traced to that film. Old-time methods fail in successfully combating it. That's why, regardless of the care you take now, your teeth remain dull and unattractive.

New methods remove it

And Firm the Gums

Now, in a new type dentifrice called Pepsodent, dental science has discovered effective combatants. Their action is to curdle the film and remove it, then to firm the gums.

Now what you see when that film is removed—the whiteness of your teeth—will amaze you.

FREE 10-Day Test
Send the Coupon

Maybe your teeth are gloriously clear, simply clouded with a film coat. Make this remarkable test and find out.

FREE Mail Coupon
for 10-Day Tube

THE PEPSODENT COMPANY,
Sec. 716, 1194 S. Wabash Ave.,
Chicago, Ill., U. S. A.

I send to:_____________________
Name_______________________
Address_____________________

Send coupon to the above address, postmarked before April 1, 1925.

Pepsodent
The New-Day Quality Dentifrice
Favored by World's Dental Authority

Only one tube to a family.

1718
Creating a Toilet Habit
(Nairobi slums with Sanergy)

• Premise: Habits, while ingrained, might be changeable.

• Habits work in a simple loop:
  CUE → ROUTINE → REWARD
  o Eg: Feel stress → Eat junk food → Feel happy
  o Film on teeth → Brush with Pepsodent → Feel tingle

• Our habit loop:
  CUE: Wake Up
  REWARD: Soap available only at Fresh Life Toilet (feel fresh & clean)
  ROUTINE: Use Fresh Life Toilet
Economics Experiments

• Offer discounts (bribes) for people to use FLTs
• Study behavior after the discount period ends
• Randomly vary nature of the discount to study habits
  – Time of day
  – Intensity of discount
  – Time restriction
CREATIVE ANALYSIS
FRESHTIMONIALS SHORT FORM

PATRICIA HUISHI
Fresh Life
MATHEE WA CHAPO FRESH!

PATRICIA LIVES THE FRESH LIFE, THE MOTHER OF CHIPATI AND FRESH!
Patricia is a mother of three children, bus driver and proud that her
family uses Fresh Life toilet.

EDITH HUISHI
Fresh Life
ONEKANA SMARTER, JIHISI SMARTER!

EDITH LIVES THE FRESH LIFE. LOOK SMARTER. FEEL SMARTER.
Edith is a salonist who knows how to look smart. That's why she is proud
to get smart in front of the mirror when she uses Fresh Life toilet.
Concluding Remarks

• Solving the city amenity issue is complicated and difficult.
  – Free rider issues with shared sanitation facilities
• Changing the behaviors of slum dwellers is also difficult
• Innovations from both policy-makers and researchers are required
• But it’s worth trying to tackle the problem, because the stakes are high
  – Potentially large welfare gains from allowing (and even encouraging) seasonal and permanent moves into cities