Asset-based Finance for Street Vendors in Dhaka

Building Resilience to Extreme Heat

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October 12, 2026

Motivation: Finance for Climate Resilience for Street Vendors

- Street Vendors are important in urban food ecosystems
  - 48% of young consumers in Dhaka purchase from street vendors daily (Mamun et al. 2020)
  - Most low-income consumers in Dhaka purchase food from wet markets/mobile vendors (Rahman 2021)
- Vendors are vulnerable to the impacts of increasingly prevalent extreme heat events
  - Human health impacts and increased food spoilage
  - Associated with 30-40% profit loss (Streetnet/Oxfam 2025)
- Investments in cooling technologies (mobile chillers, other shade covers) may help
- But access to formal credit is limited for informal vendors



Solution: Asset-based Finance

- Asset-based financing: instead of lending money, loan asset directly
- Vendors repay over time until they finally own asset
- Increasing attractiveness of lending for MFIs
  - Safer Borrower Pool: Attracts borrowers who can make good use of the asset
  - Better Use of Loan:
    - Can’t spend loan on other non-profitable uses that might jeopardize repayment
    - Asset itself acts as collateral; remote lock-out possible for some technologies (battery powered)
- Potential Idea: Loan cooling solutions directly to street vendors

Evidence: Asset-based Finance

- Graduated MFI borrowers in Pakistan offered business asset loans (~$2,000) [Bari et al. 2024; AER]
  - Over 50% take-up
  - Over 95% repayment rate
  - 10% higher profits than standard MFI loan control
- Kenyan Dairy farmers offered loans for rainwater harvesting tanks [Jack et al. 2023; ReStud]
  - Full asset collateralization increases take up from 2% to 44%
  - Repossession rate of less than 0.1%
- Ugandan borrowers are offered school fee loans but with digital lockout from their solar home system used as collateral [Gertler et al. 2024; QJE]
  - Digital lock out reduces default by 19 percentage points; roughly 2/3 of the difference attributable to difference in borrower behavior (as opposed to changes in borrower pool)

Solution: Flexible Repayment

- Heat stress faced by vendors may not fully be resolved by mobile cooling technologies.
- When faced with losses, vendor may struggle to repay their loan.
- One option: add insurance
  - Demand for index insurance products in Bangladesh is very low/price sensitive [Hill et al. 2019, Clarke et al. 2012]
- Repayment flexibility can serve insurance-like role at a lower cost
  - Instead of paying out when trigger event occurs, repayment gets temporarily deferred into a future period.
  - Flexible repayment could attract riskier borrowers.
  - Making flexibility index-based may help mitigate this risk and lower monitoring costs.

Evidence: Flexible Repayment

- Repeat BRAC borrowers in Bangladesh offered a loan with the option to defer 2 monthly payments in a year. [Battaglia et al. 2024; ReStud]
  - 11% increase in loan take up compared to standard product
  - Likelihood of default marginally diminishes
  - 25% higher profits than standard MFI loan control, make riskier investments
- Indian micro-entrepreneurs offered a loan with a 3 month “repayment holiday” [Barboni and Agarwal (forthcoming), Journal of Finance]
  - Profits and risk of investments increase without affecting repayment rates
  - Financially “sophisticated” entrepreneurs more likely to choose flexible loan
- Indian micro-entrepreneurs offered a loan with the 2 month grace period before repayments begin [Field et al. 2013; AER]
  - Business profits increase by >29% compared to standard loan
  - Default rate increases 3x

New Project: Randomized Trial of Financial Innovation

- Partnering with the Shakti Foundation to test an asset-based finance product for mobile cooling solutions
  - Targeted at street food vendors
  - Includes heat-indexed repayment
- Plan to conduct an RCT in which (variations of) the product will be offered to street vendors (especially women)
  - Projected take-up of around 1,500 loans
  - Expected to start at scale in early 2027
- Currently working on product design and qualitative interviews with street vendors
  - Generally low take up of formal credit products
  - Interest in solutions that help to protect and store food from heat as well as limit heat exposure