The Impact of Mobile-Based Market Information on Informal Cross-Border Trading in Kenya and Uganda

Researchers:

Elisabeth Sadoulet

Eleanor Wiseman

Sector(s): Agriculture

Fieldwork: Innovations for Poverty Action (IPA)

Location: Busia, Western Kenya, on the border with Uganda

Sample: 1100 small-scale traders

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Limited access to market information among small-scale cross-border traders in low- and middle-income countries can inflict unnecessary costs to traders through an inability to locate buyers and sellers or being subject to corruption or bribery at official and unofficial border crossings when choosing to engage in international trade. At the Kenya-Uganda border, the researcher conducted a randomized evaluation to test whether reducing information disparities by giving access to critical market information through a mobile phone platform would improve traders' profits and decrease incidences of corruption and bribery. Access to and use of the mobile platform led to an increase in cross-border trading, increase in the profits traders earned, and a reduction in the prices faced by consumers of these traded goods. The intervention, however, did not reduce the level of corruption and bribery traders faced.

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A large portion of trading in low- and middle-income countries is undertaken by small-scale informal traders, most of whom are women from rural areas with little formal education. These traders often lack information concerning tariffs at official border crossings, as well as which markets are the cheapest to buy from and the most profitable to sell in, making them more vulnerable to corruption at official border crossings or bribery at unofficial crossings. Policies have been enacted to formalize cross-border agricultural trade to increase tax revenues and reduce corruption and bribery, but they have been largely unsuccessful in many countries. A promising alternative may be to improve traders' access to market information.

Previous research has demonstrated that access to mobile phone networks may enable small-scale traders to collect valuable market information. However, there is little research on whether reducing information disparities reduces costs associated with conducting business and their vulnerability to corruption. Can providing cross-border, informal traders market information digitally encourage them to select more cost-effective and profitable trading routes, as well as reduce their vulnerability to bribery and corruption?

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This study took place in Busia, a Kenyan town that sits on the border with Uganda. Like many other border towns, Busia's economy is highly dependent on trade, where the border itself operates as a center of commerce, hosting around 74 percent of all informal agricultural trade transactions between the two nations. Busia's informal trade market is largely comprised of small-scale traders, most of whom are women who either operate as domestic traders or cross-border (international) traders that source their goods in Uganda. Cross-border traders either travel through official border crossings or unofficial crossings, where traders are typically subject to bribery by policemen. At official border crossings, on the other hand, traders are often required to pay taxes and may also be subject to corruption in the form of higher, unofficial and undocumented payments by border officials.

Sauti East Africa developed a mobile phone platform to address the lack of information traders face that make them vulnerable to extortion at the border. Specifically, it provides users with information on prices of goods across various markets in East Africa, the legal tax payments required at official border crossings, exchange rates, and weather forecasts. Eligible traders for participation in the study operated within 40 kilometers of Busia's border crossing. Most traded in agricultural goods (80 percent), while 20 percent traded clothing. About 45 percent operated as domestic traders, while 55 percent operated as cross-border traders (with 63 percent of these individuals using unofficial border crossings). More than 80 percent of the sampled traders were women. Only 38 percent are aware of the market price of their main goods in other markets, while 18 percent were informed about exchange rates.



A group of women using the information service in Kenya

Photo Credit: Sauti Africa

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In partnership with Sauti East Africa and Innovations for Poverty Action, the researcher conducted a randomized evaluation to test whether delivering market, price, tax, and weather information through a mobile phone platform improved small-scale informal traders' operations, profits, and experience of extortion at border crossings. For the evaluation, the researcher randomly assigned 1,100 traders to one of two groups:

1. *Mobile platform access:* About half of the participating traders were offered access to the mobile phone platform through a distinct code, which the traders dialed on their phones. These traders received access through a workshop, where they received the code as well as a demonstration on how to use the platform.
2. *Comparison:* The other half of participating traders did not receive access to (or training on) the mobile phone platform.

The researcher also varied the intensity of platform access depending on the market and industry (e.g., either agriculture or clothing) to assess information spillovers between traders operating in the same market as well as any broader effects to the entire market. Approximately sixty markets by industry had a varying number of traders with access to the platform, ranging from 0 to 75 percent of traders in a market receiving access.

The intervention was launched in May 2021, and three rounds of follow-up data were collected between June and September through phone surveys. The final surveys were conducted in October and November 2021. The researcher collected information on traders' use of the mobile phone platform, business outcomes, including the health of their business, the type of goods they traded, and their supply chain. The researcher also collected data on what trade routes they chose, as well as reports of corruption and bribery.

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Access to the mobile phone platform resulted in an increase in the likelihood of trading and trading being the primary source of income, profits, variety of goods sold, the number of viable buying and selling markets, official cross-border trade flows, as well as a reduction in consumer prices in selling markets. However, the researcher did not find changes in the level of corruption and bribery traders faced at border crossings.

Take-up: Of those selected to receive access to the mobile phone platform, 85 percent attended the workshops, with take-up of the platform among workshop attendees averaging 70 percent. Irrespective of whether they attended the workshops, 59 percent of traders offered access to the platform used the platform at least once.

Trade flows: Access to information about market prices and taxes increased the likelihood of trading and that trading was a traders' primary source of income by 3.5 percentage points relative to the comparison group (87 percent and 94 percent respectively). The mobile phone platform provided traders with key information on how to reduce their costs (such as introducing them to cheaper buying markets), as well as how to increase their revenue (such as helping them to identify selling markets with higher prices). The researcher suggests that access to the platform may have made trading a more profitable venture, and in turn, may have prompted the traders to trade more (in terms of frequency and quantity of goods traded).

Access to the mobile phone platform also pushed traders to trade across borders, resulting in a 20 percent increase in the number of cross-border traders relative to the comparison group (24 percent). Further, access to information increased formal border crossing by 25 percent relative to the comparison group (15 percent). The researcher suggests that an increased availability of information on accurate border taxes may have allowed traders to correctly weigh the tradeoffs between formal or informal border crossing.

Profits: Access to information improved traders' sales and profits by 17–18 percent relative to the comparison group. The researcher suggests that the increase in trader profits likely stemmed from traders increasing quantity of goods sold.

Number of buying and selling markets: Enhanced access to market information led to an increase in the number of buying markets traders used by 7 percent relative to the comparison (1.17 markets) and an 11 percent increase in the number of markets in which traders sold their goods relative to the comparison group (1.59 markets). Greater access to market information enabled traders to identify additional markets where goods were cheaper to buy and where they could earn higher amounts when selling their goods, subsequently pushing traders to engage in a greater variety of markets.

Consumer prices in selling markets: Markets with more traders that had access to the platform experienced a greater reduction in consumer prices. Reducing information frictions reduces aggregate consumer market prices by 6.6 percent, which would translate to a consumer surplus of at least US$604 relative to average sales of US$9,148.30 at baseline. Increased access to market information allowed traders to source goods at cheaper prices and subsequently pass the cost reduction through to consumers, improving welfare for both consumers and traders.

Variety of goods sold: Greater access to market information also increased the types of goods traded by each trader by 8 percent relative to the comparison group mean of 2.78 goods. Greater access to market information encouraged traders to explore, and buy different goods. As such, this likely led to a greater variety of goods accumulated and sold to customers.

In sum, these results suggest that lack of information plays a substantial role in informal trading and that reducing these frictions (through a mobile phone platform) can lead to large welfare gains for both traders and consumers and the government (through increased tax revenues from trade formalization). The researcher calls for more research to understand how traders' increased bargaining power and reduced uncertainty can affect their outcomes in the long-run as well as how unequal access to information can affect market structures.

Wiseman, Eleanor. "Border Trade and Information Frictions: Evidence from Informal Traders in Kenya." Working paper, January 2023.

Wiseman, Eleanor. "Economists and traders have more to learn about trade: the role of information frictions in informal trade. Guest post by Eleanor Wiseman." *World Bank Blogs* (2022).