STUDY SUMMARY

Risk and Relationships in Ice Retail in the Sierra Leone Fishing Industry

The emerging markets of low-income countries are often characterized by uncertainty and instability, weak enforcement of formal contracts, and concentrated market power, making informal contractual relationships especially important. When market structures change, how do those relationships change? Researchers who studied the ice retail business in Sierra Leone's fishing industry found that a sudden increase in competition among manufacturers improved the contractual terms retailers offered to fishermen buyers.

Policy Issue

Markets in low-income countries are often characterized by uncertainty and instability, weak enforcement of formal contracts, and concentrated market power. In such challenging settings, business relationships are essential for addressing contractual hazards. In the Sierra Leone fishing market, for example, small fishing enterprises invest in relationships with ice retailers to minimize lateness and rationing, and retailers reward loyal customers with prioritized deliveries. Retailers also provide trade credit—where customers purchase goods on account and promise to pay at a later date—to those they know and trust, using the prospect of future business to mitigate the risk of the buyer defaulting. But while existing relationships help facilitate the flow of trade, they can also reduce responsiveness to changes in prices and restrict competition for buyers.

Previous research in low-income countries has addressed the importance of business relationships for explaining contractual and market outcomes, but little empirical evidence exists on how changes in market structure affect the economics of these relationships. This research explores how thin markets, which are characterized by few buyers and sellers, may contribute to the broader challenges of economic development in low-income countries.

[Note: This is not a randomized controlled trial.]

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COUNTRY
Sierra Leone

PARTNER

PROGRAM AREA
Small and Medium Enterprises

TOPICS
Livelihoods, Microenterprise

TIMELINE
2013-2014

Evaluation Context

Fishing is a vital sector in Sierra Leone, accounting for approximately 10 percent of GDP and composing approximately 30,000 artisanal fishermen distributed along the country's coastline using over 8,000 boats. Fishing is divided into two sectors: industrial operations and small-scale, artisanal fishing operations that serve the domestic market.

Over the past decade, some artisanal fishermen on the Freetown Peninsula have begun using large boats equipped with wooden iceboxes, enabling them to keep their catch fresh and conduct multi-day journeys. Fishermen without ice specialize in lower value fish that can be sold dried, or conduct short overnight fishing trips to avoid the potential for spoilage. Given the fixed costs of organizing each fishing trip, ice is a simple technology offering fishermen the opportunity to catch and sell more, higher value fish.

At the start of this study in January 2013, Sierra Leone's largest ice manufacturing company, Ice Ice Baby, served as the monopolistic manufacturer and supplied ice to fishermen at the three Freetown fishing wharves studied here. Ice deliveries were typically late and unpredictable. During the study period, four new ice manufacturers entered the market, introducing competition to a monopolistic market structure.

Details of the Intervention

Researchers designed a large-scale data collection exercise, with IPA collecting transaction-level data over an 18 month period from actors at all levels of the supply chain: fishermen buyers, independent ice retailers, and the large ice manufacturers. Surveyors collected retailer-level transaction data including the identities of the retailer and fishermen buyer; contractual terms, such as price, quantity demanded, and credit terms; and contractual outcomes, such as quantity delivered and timeliness of delivery.

Surveyors also conducted detailed in-person baseline surveys and biweekly follow-up phone surveys with fishermen to record their assets and expenditures, ice usage, and fishing trip outcomes, such as volumes and gross profits. At the end of the 18 month period, surveyors collected updated assets and expenditure information from the fishermen, as well as recall data for fishing practices and outcomes over the previous two and a half years. Additionally, the researchers and the IPA research team conducted interviews with all of the major manufacturers and retailers, providing a qualitative history to complement the quantitative analysis.

Results and Policy Lessons

Overall, market entry by ice manufacturers improved the contractual terms received by small fishing firms, including lower prices, reduced lateness, and—in the case where retailers also compete—increased trade credit. Whereas monopoly power by either manufacturers or retailers worsened contractual terms, in this setting limiting the timeliness of manufacturer deliveries and the provision of retailer trade credit.

Under the monopolistic manufacturer: Late deliveries were common under the monopolistic ice manufacturer—on average delayed by a half day—and buyers remained loyal to retailers despite systematic poor performance. Approximately 26 percent of deliveries were late during the first six months of 2013, and survey data confirmed that fishermen experienced worse fishing outcomes when exposed to lateness.

Retailers in one wharf, Goderich, which supported multiple retailers under the monopolistic manufacturer, responded to delays in ice deliveries by strategically prioritizing their most loyal buyers. Those designated as loyal customers moved up between 2-3 places in the prioritization queue. However, retailers also colluded to maintain low trade credit levels and restrict competition for customers, thus limiting buyers' outside options.

After entry by new ice manufacturers: When manufacturers competed, prices fell, quantities increased and services improved with fewer late deliveries. The entry of new manufacturers also disrupted collusion among retailers by increasing the value of competing for buyer relationships. Competing retailers expanded trade credit provision as a new basis for loyalty, and stable buyer relationships reemerged after a period of intense switching.

Specifically, each additional manufacturer was associated with a 5-6 percent fall in price, and the overall frequency of late deliveries fell to 1 percent (from 26 percent) during the first six months of 2014. The number of fishermen who switched retailers at least once after manufacturer entry rose by 75 percentage points in Goderich, and over 200 switches of retailer-buyer pairings occurred after new manufacturer entry. Meanwhile, the share of weekly orders provided on trade credit increased up to 29 percentage points in Goderich from a base level of 8%, while no significant changes were observed in the other wharves that had monopolistic retailers.

Policy Lessons: These results emphasize the importance of studying how market development affects the existing structure of inter-firm relationships that are commonly observed in low-income countries. The findings suggest that thin supplier and retail markets are important for supporting collusion and restricting competition for buyers and that upstream entry by new manufacturers can improve downstream contractual outcomes for small enterprises. Future analysis will explore the implications for fishing firm productivity and growth as well as consumer welfare from the lower prices, improved timeliness and increased trade credit associated with manufacturer competition.

These results suggest that market structure shapes informal contractual institutions and that more competition among those higher up on the supply chain redistributes trade surplus further down.