Domestic and international search frictions in Ugandan firm markets

John Spray

IGC

International Growth Centre

DIRECTED BY

LSE · UNIVERSITY OF OXFORD

FUNDED BY

UKaid
from the British people

Domestic and International search frictions in Ugandan firm markets
John Spray

Introduction

In low-income countries, where firms do not have access to supplier databases, information about firm reliability is hard to come by, supplier quality is variable and search frictions between firms are likely to be large. Discussions with firms in Uganda suggest they expend substantial resources looking for new suppliers both domestically and internationally.

This policy brief first identifies what holds back firms from linking with each other in Uganda, finding strong evidence for a lack of information holding back firms from making more and better linkages with potential customers and suppliers. Simulations of a quantitative model show that reducing search costs through better information would lead to substantial improvements in consumer welfare – a 25% reduction in search costs would increase consumer welfare by 8%.

I propose three policies learning from the experiences of other countries to achieve this 25% reduction:
1. Utilise internet retail platforms
2. Encourage peer-to-peer learning groups
3. Establish a supplier development programme

Why linkages matter

Figure 1: Example of two anchor firms value-chains
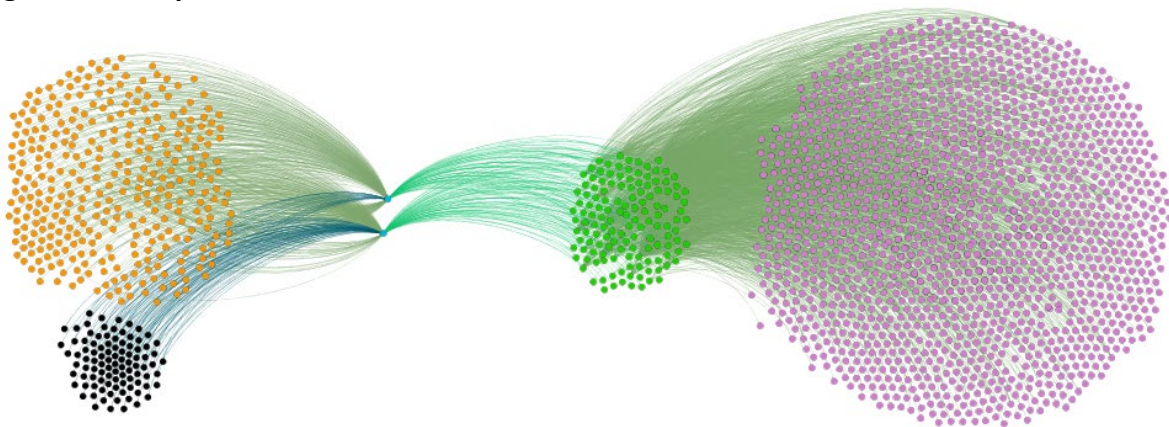
2 factories (blue)
- ⇒ Buy inputs from 340 suppliers (orange)
- ⇒ Sell to 135 firms (green)
- ⇒ Sell to 1548 firms indirectly (purple)
- ⇒ Buy imports from 96 foreign suppliers from 28 different countries (black)

Source: Ugandan Revenue Authority Data, 2014. Dots are firms and connections indicate that a trade took place between these two firms in 2014.

Figure 1 highlights why linkages are important for firms in Uganda. I show two small factories highlighted in blue. Importantly these firms do not operate in isolation, but instead purchase inputs from 340 different supplying firms (orange). They also sell their products to 135 different customer firms (green). These customer firms sell onto over 1500 different customer of customer firms (purple). Moreover, these two factories are not just domestic firms, but also source inputs internationally; purchasing goods from 96 different foreign suppliers from 28 different countries (black).

Ultimately, these two anchor firms are crucial to the entire supply chain of over 2000 firms. When we think about improving linkages, we must think about (1) how to generate more connections within these types of supply-chains, (2) how to make the connections that take place the best possible, and (3) how to encourage more chains to operate like this one.

This policy brief focusses on one component of this – reducing firms information constraints.

What is holding back Ugandan firms' linkages?

The first thing to consider is what is holding back firms from matching in the first place. In discussions with firms in Uganda I identified three main ways in which firms find new customers or new suppliers.

The first way firms find new partners is to ask firms located near them for advice on good partners. To demonstrate this fact, I looked at the location of all Ugandan suppliers and the location of their buyers. Figure 2 shows that 11 percent of international suppliers' new matches and 14 percent of domestic suppliers' new matches are in the same building as an existing customer. If you look at a slightly larger scale to see if there is any existing buyer-supplier relationship within a $10km^2$ radius, then these numbers increase to 36 and 58 percent, respectively. This tight proximity between suppliers' customers is consistent with a story where buyers pass on information about their suppliers to nearby firms. This narrative is made more convincing when we compare the percentage of matches with a supplier in the same building (11% and 14%) to the percentage of matches with next door buildings (1% and 0.5%). We would not expect firms in the same building to be substantially different to their next door neighbours, however, even when moving from one building to the next the diffusion of knowledge appears to reduce substantially.

Figure 2: Percentage of suppliers' new buyer matches which have an existing buyer in location
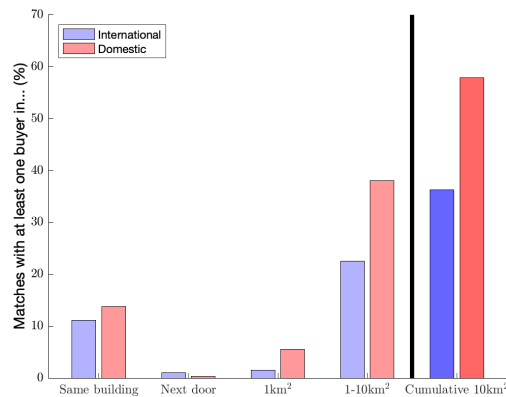

Source: Uganda Revenue Authority Data, 2014

The second way firms make linkages is to ask their business partners for information about potential partners. This is supported by research in China, which found that when firms were grouped into business groups, they discussed good suppliers and made referrals among each other of which firms to partner with (Cai and Szeidl, 2017).

The third way firms find new suppliers is to use information from existing firms who have already tread the path. Figure 3 shows one-year export survival rates for Uganda's export products. These figures show that only 25% of Uganda's export products to a particular country in 2014, were also exported in 2015. This is compared to Cambodia, Vietnam and Thailand which all have export survival rates more than twice as high. One of the reasons for these low rates is Ugandan exporters' limited knowledge about destination markets. Indeed, export survival rates are much higher when the export destination market is already served by Ugandan exporters. They are also much higher when the exporter has first exported regionally, giving the firm a chance to learn exporting in a market they know better, before moving further afield.

Figure 3: One-year export survival rates (2015)
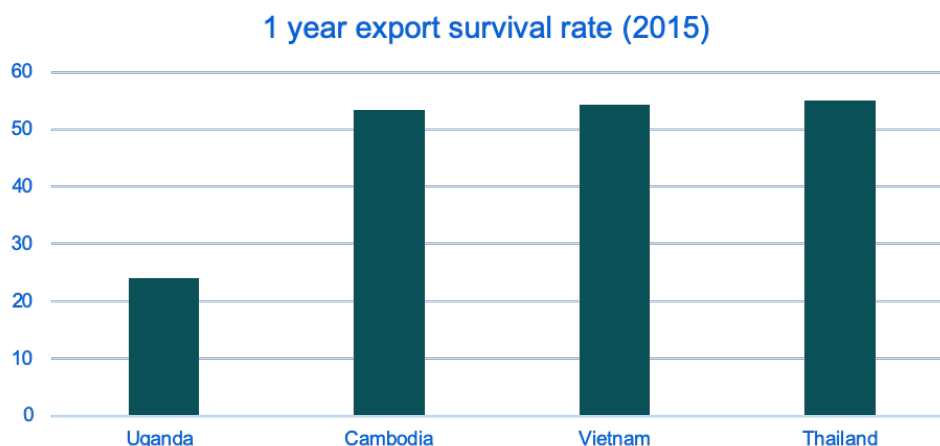
Source: Brenton (2018)

The key takeaway from this evidence is that firms with more information will make more and better linkages with customers and suppliers.

What can be achieved?

I now consider how much of an impact reducing search frictions would have on firms. To do this I build a quantitative model of the Ugandan economy where I simulate the decisions of 20,000 firms. I then match the model to Ugandan data to ensure that results are realistic. The full details of this process are detailed in Spray (2019) which accompanies this policy brief.

Once the model is properly calibrated, I simulate the consequences of reducing search costs between firms by 25% in both domestic and international markets.

Results are presented in table 1 and figure 4.

Reducing search costs has a big impact on international trade as firms add many more import suppliers (increase from 1.24 to 1.49) and many more firms begin to import (increase from 15.9% to 17.8%). This impact is this large because search frictions in international trade are substantial, and so reducing these by 25% has a relatively large impact on firm sourcing.

Reducing search costs also has an impact on the number of domestic suppliers (increase from 2.71 to 2.76). While this is a smaller increase, it still represents a significant number of new connections. It also shows that the new imports are complementary and not substituting for domestic suppliers. We also observe the average quality of goods sold in Uganda increase by 17%.

All of these effects combine to make consumers welfare increase by 8%; a significant amount given it is just a 25% reduction in search costs.

Figure 4: Summary of impact of 25% reduction in search costs
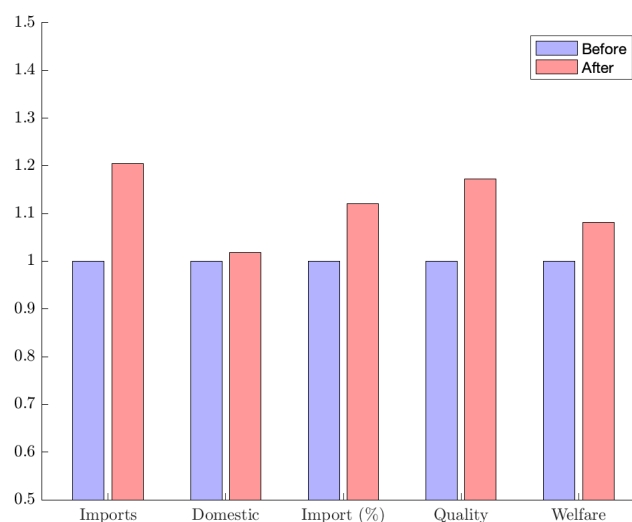
Source: Spray (2019)

Table 1: Impact of a 25% reduction in trade costs			
Variable	High Search Costs	Low Search Costs	Change (%)
Import Suppliers	1.24	1.488	20%
Domestic Suppliers	2.71	2.76	12%
Importing Firms	15.9%	17.8%	12%
Quality	1.51	1.88	17%
Consumer Welfare	1.00	1.08	8%

The variable missing from this analysis is exports which remains unmodelled. However, we can infer from these numbers that targeting export search costs would have at least as big an impact on Ugandan exports as on Ugandan imports given as discussed previously Ugandan exporters suffer substantially from a lack of information.

Policy

Given I have shown that targeting a 25% reduction in search costs could have a large impact on Ugandan firms and consumers, I now turn to how Uganda might achieve this reduction by looking at how other countries have addressed this problem. To do this I propose three policy actions: utilising internet platforms, peer-to-peer learning, and supplier development programmes.

1. **Utilising internet platforms**

Chinese firms have addressed the information problem by utilising internet platforms. Arguably the largest of such platforms is Ali Baba which is currently the largest retailer in the world. The platform works by providing quick, reliable and verifiable information on firms and products. Figure 5 shows an example screenshot from Ali Baba of a Chinese motorcycle spare parts company. The key point is that information on products, information of the firms transaction history, and the suppliers' details are immediately provided. This gives connecting firms valuable information about the firms reliability to deliver a satisfactory product. In addition to Ali Baba, many other platforms operate in East Africa such as Jumia, Amazon, etc.

Figure 5: Example screenshot from Ali Baba
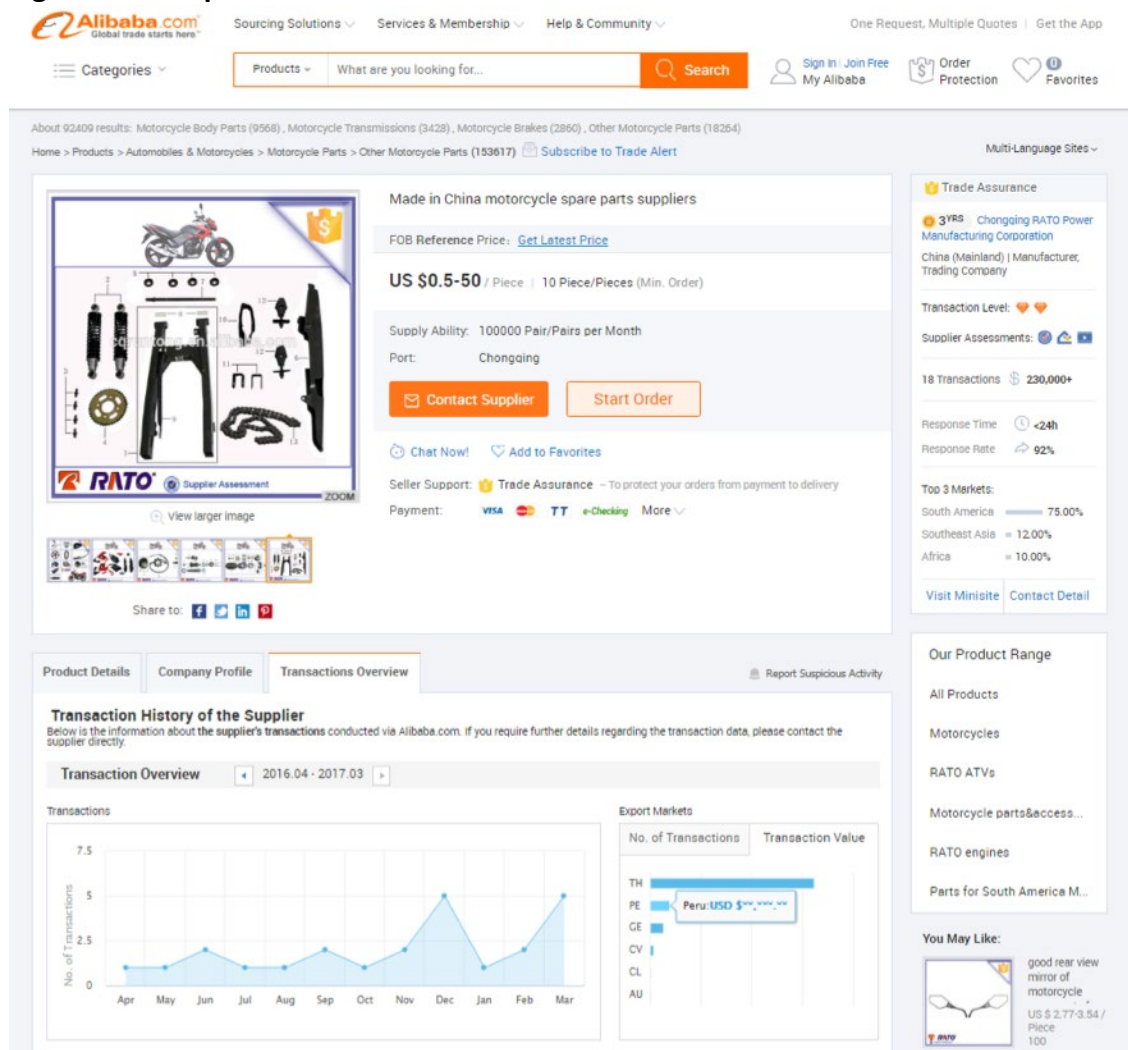
Source: Spray (2019)

Ugandan firms would be well placed to utilise these platforms for both buying and selling goods given in most instances access is freely available and can substantially increase Ugandan firms international visibility.

Policy conclusion: Ugandan Manufacturers Association and Uganda Export Promotion Board to host quarterly training sessions on the usage of modern online retail platforms.

2. Peer-to-peer learning

The second policy conclusion also comes from China, where the Commission of Industry and Information Technology (CIIT) organised 1,500 firms into groups of 10 managers to meet monthly for one year. What they discovered is that just by having regular discussions with other business owners, firms revenue increased by 8.1 percent alongside increases in profits, inputs, reductions in utility costs, and better management practices. Most interestingly, managers made referrals to each other on clients and suppliers (Cai and Szeidl, 2017).

Policy conclusion: Organize quarterly peer groups with Uganda business groups.

6

3. Supplier development programmes

The third policy suggestion comes from Chile, where a government entity, CORFO, established a supplier development programme with the goal of generating more linkages between large firms in Chile and local suppliers. The programme aimed to strengthen management practices among SMEs through sponsored training, technical advice and technology transfer and was developed in partnership with large firms. Indeed, in many cases the cost of the training was split with the large firm. The intervention led to increased sales, employment, higher salaries, and improved survival rates (Arraiz, Henriquez, and Stucchi, 2012). Indeed, similar successful programmes have been adopted in many other countries including Ethiopia, Rwanda and Costa Rica.

Policy conclusion: Establish an anchor firm support unit and organize annual public-supplier meetings.

The International Growth Centre
(IGC) aims to promote sustainable
growth in developing countries
by providing demand-led policy
advice based on frontier research.

Find out more about
our work on our website
www.theigc.org

For media or communications
enquiries, please contact
mail@theigc.org

Subscribe to our newsletter
and topic updates
www.theigc.org/newsletter

Follow us on Twitter
@the_igc

Contact us
International Growth Centre,
London School of Economic
and Political Science,
Houghton Street,
London WC2A 2AE

IGC

**International
Growth Centre**