

Firm-to-firm Referrals

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Referring suppliers to clients led to a rewiring of the supplier-client network and to improved business performance.

Introduction

Firm-to-firm trade represents a large part of economic activity, but we know little about how effective firms are in finding good trading partners. Do firm-to-firm search frictions lead to inefficient matches between suppliers and clients? Can partnering interventions improve business outcomes? These questions may be particularly important in low-income countries in which weak infrastructure and poor contract enforcement can generate large search frictions. To make progress in answering them, we conducted a field experiment with about 800 firms in Jiangxi province, China, in which we evaluated the impact of referring business partners. Despite the firms having been in operation for many years, we find that the intervention had a large effect on firm networks and improved business performance. Our results suggest that firm-to-firm search frictions are an important growth barrier and that matchmaking interventions can generate substantial gains.

Methodology

We work with firms in the industry producing the Chinese writing brush. We study a famous location of production in Jiangxi province, which accounts for the majority of writing brush sales in China. The supply chain of the writing brush has two layers: (1) firms producing intermediate inputs, especially the brush and handle (suppliers); (2) firms assembling and selling the final good (clients). In our baseline data collection, we surveyed essentially all firms in our location – about 800 firms, and we collected data on both firm performance and the supplier-client network.

In 2021 we introduced an intervention in which we referred business partners to some firms. To find good referrals, we exploited the information in the baseline network data, based on the logic that firm A should be a good supplier to firm B if A is already supplying a close competitor of B, or if B is already buying from a close competitor of A. We call such referrals ‘screened’. We then introduced four treatment arms. In the screened subsidy arm we made a screened referral and offered a subsidy for the first transaction. In the unscreened subsidy arm we made a random referral chosen from the set of potential partners and offered a subsidy for the first transaction. In the screened information arm we made a screened referral but did not offer a subsidy. And in the control arm we did not make a referral.

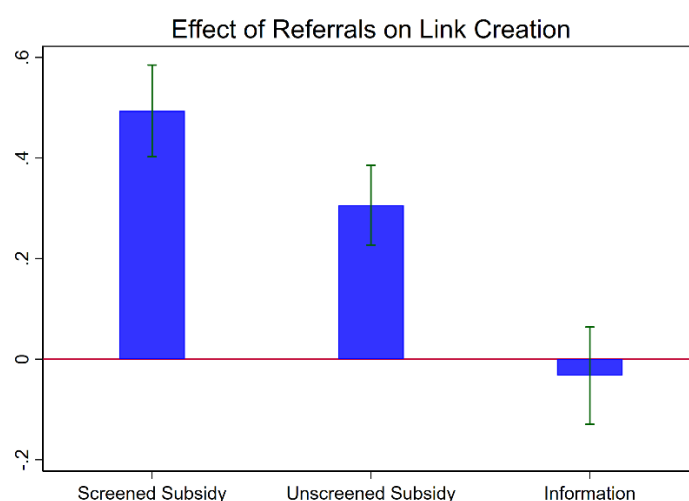
Before we made these referrals, we randomised both suppliers and clients into a treatment group and a control group, and we made subsidised referrals only between treated suppliers and treated clients. This

structure allows us to compare treated and untreated firms and thus measure the firm level impact of referrals.

Main findings

We begin with results about the effect of the intervention on the supply chain network. Figure 1 shows the impact of the referral treatment on link creation. In this figure we ask whether treated pairs of firms, which were referred to each other, conducted more subsequent transactions after the subsidy period ended than did similar untreated pairs of firms that we did not refer to each other. We find that the screened subsidy significantly increased the probability of a subsequent transaction by about 50 percentage points. The unscreened subsidy had a smaller but still substantial and significant effect of 31 percentage points. The pure information referral had no detectable impact. These results imply both that there is a firm-to-firm search friction which has prevented firms from finding partners, and that the friction is not driven purely by lack of information about potential partners.

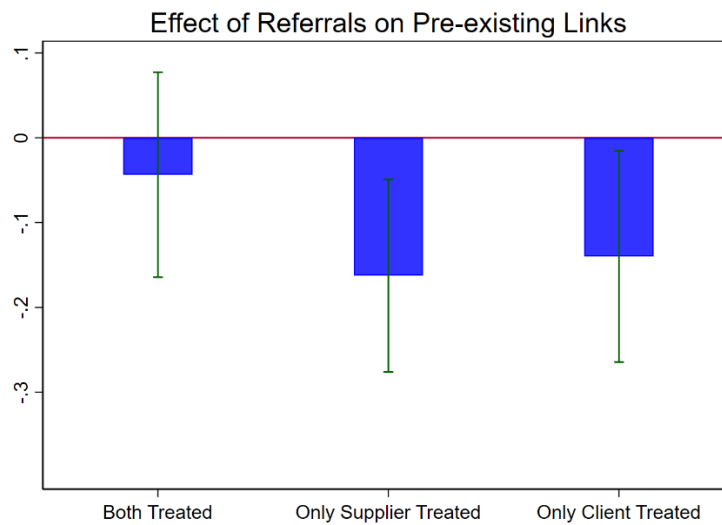
Figure 1:



Note: Subsidised referrals created new links.

Figure 2 shows the effect of the subsidy treatments on pre-existing links. Since firms take up the referred links, we expect some crowd-out of pre-existing links. The evidence confirms this. Pre-existing links where only the supplier or only the client received the treatment were about 15 percentage points less likely to be maintained relative to pre-existing links where neither partner received the treatment (the effect is insignificant for links where both received the treatment). These results indicate that the treatment generated business stealing as treated firms were reallocating their link towards the referrals and away from some pre-existing partners. In summary, the referrals led to a rewiring of the business network.

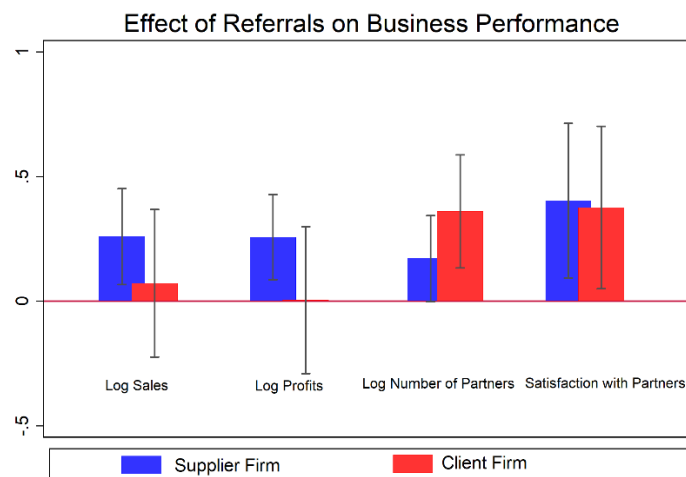
Figure 2:



Note: Subsidised referrals eliminated some old links.

We now turn to study impacts at the firm level. Figure 3 shows the impact of the referral treatment on firm performance. This is a comparison between treated and untreated firms. Because, as we have seen above, the treatment induces business stealing, the firm level comparison reflects a combination of the direct and the business stealing effect. But if business stealing affects treated and untreated firms equally—which is consistent with the link-level evidence from Figure 2—then it should cancel from the comparison.

Figure 3:

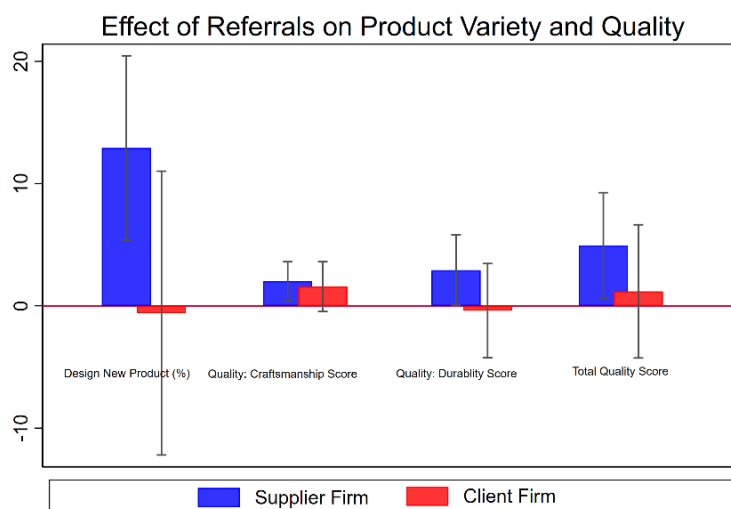


Note: Referrals improved business performance.

For suppliers, Figure 3 shows significant gains in revenue, profit, the number of partners (clients) and firms' overall satisfaction with partners. For clients, the sample is not big enough to document impacts for revenue or profit, but we estimate significant gains in the number of partners (suppliers) and overall satisfaction with partners. We conclude that referrals improved business performance.

Finally, we look at whether referrals changed the nature of the production process. Figure 4 shows impacts on supplier and client product variety and quality. We are not observing impacts on clients, but for suppliers we see significant impacts on the introduction of new products as well as on product quality as measured by independent experts. We conclude that the referrals not just increased demand for suppliers, but also shifted demand towards higher-quality goods.

Figure 4:



Note: Referrals shifted demand towards higher-quality goods.

Taken together, our results suggest that search frictions in firm-to-firm trade were a growth barrier in this setting, and that a relatively straightforward referral intervention was able to reduce this friction.

Policy impact

Our results suggest that matchmaking interventions such as trade fairs or B2B transaction platforms can generate meaningful gains in business performance.

Moving forward

We see several next steps, and intend to conduct a follow-up survey in summer 2023 which we hope will help us make progress: first, we would like to understand better why firms do not themselves search for these beneficial business opportunities; second, we would like to measure more precisely how client firms gain from the treatment; finally, we would like to account for business stealing effects more explicitly when we evaluate firm level impacts.

This note is based on research conducted as a part of PEDL [ERG 8030](#).