

**BUSINESS-TO-
BUSINESS
INFORMATION
SHARING:**

Empirical Evidence from Lagos Trader
Networks

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Abstract

Information barriers can prohibit trade. This paper empirically documents the existence of business-to-business information sharing between small firm traders in Lagos, Nigeria. Sharing information about availability of new products and styles is more common than sharing information about actual suppliers (introduction, pricing, and problems). Traders are more likely to share information with those closer to them geographically and in characteristics (experience, product type). However, traders report concerns about competition (as well as the usefulness of information) as key barriers to sharing. Relationships are almost always bidirectional. However, traders report altruism and societal pressure as key reasons for sharing over any interpersonal reciprocity, with almost no traders mentioning spot payments. Business size is negatively associated with information sharing in this context. Future research that more rigorously explores the determinants of trade information diffusion may be fruitful in cost effective mitigation strategies to improve trade flows for small firm owners.

JEL Classifications: I18, I12, J65, O12, D91 Keywords: Search Costs, Moral Hazard, Trade, Travel, Importers, Nigeria, Networks

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1 Introduction

Information problems contribute to trade costs. This idea is not a new one. Shared language or the quality of legal institutions are often included in gravity model estimates¹. A myriad of empirical studies document incomplete information as a source of such costs in developing countries, introducing better information technology to reduce price variation across regions ([Jensen \(2007\)](#), [Aker \(2010\)](#); [Allen \(2014\)](#), [Steinwender \(2014\)](#)). A smaller piece of the literature shows relationships between communication and aggregate trade flows ([Cristea \(2011\)](#) and [Poole et al. \(2010\)](#), [Portes and Rey \(2005\)](#)). Most recently, [Startz \(2017\)](#) provides micro-empirical evidence, using a structural model to demonstrate very large informational barriers to trade for small firm traders in Lagos, Nigeria.

When does it make sense for a business that has gained private information about a supplier or product to share that information, and with whom? Whether and when informal institutions (such as peer-to-peer network structures) help to resolve these information frictions is an open question within the literature. Previous studies of peer-to-peer information sharing have analyzed spillover effects of managerial practices and business information when network links are exogenously generated ([Fafchamps and Quinn \(2013\)](#), [Cai and Szeidl \(2018\)](#)), and documented evidence that social learning occurs with technologies in agriculture ([Foster and Rosenzweig \(1995\)](#), [Conley and Udry \(2010\)](#), [Munshi \(2004\)](#), [Bandiera and Rasul \(2006\)](#)). However, in non-agricultural sectors, [Hardy et al. \(2015\)](#) and [Cai and Szeidl \(2018\)](#) provide evidence of strategic considerations in information sharing about new technologies and business opportunities. Our paper adds to this literature with the focus on a new type of information sharing, related to trade.

This paper is the first to empirically focus on within-industry peer network interactions that may ease informational barriers to trade. We collect self-reported networks data as part of the third round of the Lagos Traders Survey, a panel of small firm traders in Lagos markets following ([Grossman and Honig \(2017\)](#) and [Startz \(2017\)](#)). In our sample, we track 722 traders, who were part of a census of randomly sampled commercial traders. The data consists of the business characteristics of these small trading firms, qualifiers describing their transactions (on a transaction level), as well as the types of network interactions these traders have, along with frequency and degree of these networks. We also ask respondents to delineate characteristics of the other traders who they interact with and qualify the interactions using our survey module. Finally, we ask them to self-report reasons why they choose to interact when they do and reasons why they choose not to interact with others.

We find that trade-related information sharing exists, but is far from universal. Although

¹For a review of this literature, see [Anderson and Wincoop \(2004\)](#)

the proportion of our sample that engages in business-to-business trade-related information sharing is not too high, these interactions are as common as most other types of business-to-business interactions, and are similar in the frequency and degree (number of traders discussed with) as well. These network relationships are more likely between traders in similar product specialities and with similar levels of experience . They are also more likely between traders in the same market. Trade-related network relationships are almost always reciprocal, suggesting a tit-for-tat enforcement mechanism. However, firm owners that engage in these relationships report altruistic and societal motivations at much higher rates than interpersonal ones. Self-reported barriers to interaction include concerns about competition and the usefulness of information available via peers.

Additionally, business size positively predicts travel ([Startz \(2017\)](#)), while it negatively predicts information sharing. This suggests that the monetary costs of travel that may prohibit this trade-barrier solution for smaller businesses may not hold those same small businesses back for the (non-monetary cost) information sharing behavior, which may act as a substitute for travel in solving similar information constraints to trade. Overall, relative to the propensity to travel as a means to ease these information costs (as studied in [Startz \(2017\)](#)), the sharing of information about newly available products and styles is about as common and frequent. However, network interactions related to information about specific suppliers (introductions, pricing, problems) occurs far less. While the former suggests that information sharing may be a viable way for traders to gather information about new products, the latter suggests that it is unlikely to serve a similar function for relational contract enforcement with suppliers. If traders shared information about suppliers regularly, then public reputations could develop that could motivate good behavior and substitute for formal contract enforcement or other costly enforcement mechanisms. This does not appear to be the case, which suggests there remain barriers to informal institutional solutions to trade frictions in the existing market context. This opens the way for possible interventions that can ease barriers to and usefulness of business-to-business information sharing toward easing trade frictions in this context.

2 Context and Project Background

We observe traders operating in Lagos, Nigeria. These traders import consumer goods from various source countries from all corners of the earth. Lagos is the commercial capital of Nigeria, one of the most populated and commercialized economies in Africa. These traders import products that are usually not produced domestically - manufactured goods in apparel, homewares, hardware, electronics, and beauty products. In fact, the National Bureau of Statistics in 2013 revealed that the wholesale and retail trade sector is the second

largest component of GDP after agriculture. Therefore, understanding these small local traders in Lagos, Nigeria helps us gain a better understanding of the local markets and understand the trading sectors' effects on consumer welfare.

These traders purchase and sell goods without effective formal contract enforcement institutions, which expose them to the risk of moral hazard concerns in importing arrangements. [Startz \(2017\)](#) documents that these traders travel in order to find new products and conduct spot transactions with foreign suppliers in order to avoid the contract enforcement problem. In the Lagos Trader Survey (details below), we trace traders who purchase both domestically and internationally. We collect information that resembles official customs data with a new set of variables that describe their business transactions, which will be explained further in the following section.

In this context, market associations are one of the primary institutions governing the business environment in which traders operate. However, we find that few infractions are reported to fellow traders or market associations, and market associations do not appear to play a coordinating role in sharing information with traders or helping to enforce agreements with suppliers. [Grossman and Honig \(2017\)](#) estimates that less than half of market associations share information with traders about opportunistic customers – customers who buy on credit and do not repay.

3 Data

The traders in our sample were identified through a census of commercial areas of Lagos conducted between October 2014 and April 2015. Beginning with a list of markets and plazas, we add a number of market areas located on government-owned land. Our sample excludes residential and manufacturing areas, as well as traditional markets, which are predominantly made up of small retail vendors that sell food and household items.

As part of the Lagos Trader Survey, we collect three rounds of data, collected in 2015, 2016, and 2018. In each round, we ask traders about their a) business characteristics, b) business travel, c) typical business trips, d) domestic and international suppliers, and e) other business practices.

As part of a) business characteristics, respondents answered questions regarding the products they sell, the labor composition of the business, business tenure of the owner and business tenure in the market/plaza they currently operate in, whether they import, whether they travel, and number of orders. As part of b) business travel, we document the countries they travel to, and how much they purchase and when. We also collect information on c) typical business trips, including duration of trips, costs, and number of suppliers met; d) questions regarding suppliers include how long the respondent has known the supplier,

percentage of defects, average price, and payment method; and e) other business practices include financing methods, assets, and business liquidity.

In addition, in the third wave of data collection, we ask respondents about their interactions with other traders in the sample. We ask about topics that they discuss with other traders along with other types of interactions. For each of 17 different types of interaction that we identify, we ask them about the frequency of interaction (measured by the number of months interacted in a calendar year), the number of traders they interact with, characteristics of traders they interact with, whether they gave or received in these interactions, and finally self-reported reasons why they engaged in these network interactions and self-reported reasons why they chose not to engage. In this paper, we report the results for these 722 traders who were part of our Wave 3 survey. The summary statistics of the traders in our sample are shown in Table 1: the average trader in the sample is a 39.7 year old male who sells 6.23 different products. More than half of the sample deal in apparel, while the remainder deal in a variety other product types such as electronics, beauty products, hardware, and homewares. The majority of them sell wholesale and have very few, if any, employees. More than half of the sample imports, and of those that do, over half travel as part of their importing business.

Of the 1179 traders in the previous round of survey, we have a response rate of 61% from our baseline sample. In other words, this is a combined attrition rate from two survey rounds after the baseline survey. Table A2 shows differences between respondents and non-respondents. The respondents that we were able to reach and survey were 2 years older, and were less likely to sell apparel. In addition, the sample we were able to reach were comprised of slightly more men, had slightly more paid employees, and captures more importers. In the second round, we follow up on all importers and a random sample of non-importers. This may be the driving cause of the imbalance on gender, age, and wholesales, which are all correlated with importing (Startz (2017)). Other baseline characteristics between those surveyed and not surveyed show no differences, while the F-test of joint significance yields a p-value of 0.0002, which means that we reject the hypothesis that these business characteristics are all jointly insignificant. Table A3 reports the same information for the sample of importers. Within the subset of importers, we see no differences in wholesale as a business characteristic, and we fail to reject the claim that these characteristics are jointly insignificant at the 90% confidence level.

4 Results

Figure 1 shows the proportion of the sample that engages in various network activities. The search-related (sharing information about newly available products and styles, introductions

to new suppliers, and sharing information about supplier pricing) and moral hazard-related (sharing information about supplier problems) trade interactions do exist in the sample, but the levels are relatively low. About 10% of our sample discusses supplier prices, supplier problems, or introduces suppliers or agents, while slightly over 30% of the sample discusses the availability of new products. For those that do interact with regards to trade, they interact an average of 2 months per year with roughly 5 other traders on average. The exception here is that traders rarely travel with other traders, and when they do, they don't travel with many other traders. From subfigure a), it is clear that most of interactions occur less than traveling. Only the discussions of the availability of new products and styles happens with more of the sample than travel. Appendix Table A1 shows that 27% of the sample travels, which is more common than most of the search-related and moral hazard-related trade interactions. Appendix Figure A1 shows these results for the set of importers. Results are similar and are comparable with the results of Figure 1. Notably, when analyzing the set of importers, we see that search-related and moral hazard-related network interactions happen less than travel, despite the costliness of travel. Degree and frequency of network interactions remain quite similar to those of the full sample

Figure 2 characterizes these network interactions. The subfigures show that interactions are bidirectional and occur between traders who are geographically close to each other. Furthermore, the majority of the interactions occur between homophilic relationships - traders are more likely to interact with those similarly experienced and those that sell similar products.

Finally, Figure 3 reveals why traders choose not to interact with others, and reveals why traders do choose to interact with others. Barriers to network interaction is mainly due to the fact that they see no value in the interaction (or they believe that the other party would find it useless) and potential competition between traders, which may lead to businesses being hurt. The costliness of the interaction isn't reported to be major concerns for these traders. As for reasons why these traders choose to engage in network activities, traders choose to interact with others for mainly altruistic and societal reasons. These societal reasons include doing it for kindness, to fulfill religious or social obligations, or the fear of being viewed unfavorably by peers, while altruistic reasons are simply to be nice and helpful. Cash considerations and relational considerations are extremely rare. These findings are reiterated with the subset of the sample that import from abroad in the appendix. We find similar patterns, and no differences between importers and non-importers.

Tables 2 shows regressions that look at whether baseline characteristics predict network outcomes in levels. It seems that traders with more workers are less likely to discuss prices paid to suppliers and availability of new products. Furthermore, it seems that female traders

discuss supplier prices more often. They also discuss this issue more often, but not with any more individuals.

Finally, in the appendix figure A6, we describe the distribution of the respondents' level of worry when it comes to competing with other traders. We also describe the same distributions for the level of worry with regards to sharing private information with other traders. Overall, we see that traders are quite concerned about competition and sharing information. The further the traders are, the less worried respondents are; meanwhile, traders are more concerned about information sharing than they are with losing their customers to other traders. This might be driven by the fact that they seem demand as stochastic windfalls, where as information sharing may be perceived as a potential way to gain a strategic edge over their competition.

5 Conclusion

Business-to-business information sharing is a potential mitigation technique to overcome informational barriers to trade. Particularly for small firm traders such as those in the Lagos Trader Survey, this type of interpersonal or socially coordinated approach to easing search and moral hazard constraints may unlock trade access for those who cannot afford the more costly option of travelling to source countries. This paper provides the first evidence for the existence of trade-related information sharing between business owners in low-income countries. Further research is needed to unpack the potential of these business-to-business information sharing relationships to ease information frictions in trade.

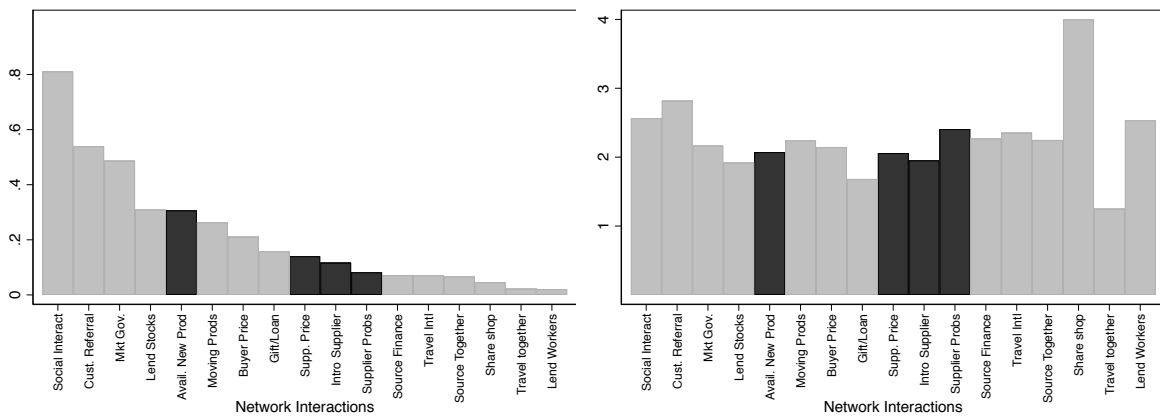
References

- Aker, Jenny C. (July 2010). "Information from Markets Near and Far: Mobile Phones and Agricultural Markets in Niger". In: *American Economic Journal: Applied Economics* 2.3, pp. 46–59. DOI: [10.1257/app.2.3.46](https://doi.org/10.1257/app.2.3.46). URL: <https://www.aeaweb.org/articles?id=10.1257/app.2.3.46>.
- Allen, Treb (2014). "INFORMATION FRICTIONS IN TRADE". In: *Econometrica* 82.6, pp. 2041–2083. ISSN: 00129682, 14680262. URL: <http://www.jstor.org/stable/43616907>.
- Anderson, James E. and Eric van Wincoop (September 2004). "Trade Costs". In: *Journal of Economic Literature* 42.3, pp. 691–751. DOI: [10.1257/0022051042177649](https://doi.org/10.1257/0022051042177649). URL: <https://www.aeaweb.org/articles?id=10.1257/0022051042177649>.
- Bandiera, Oriana and Imran Rasul (2006). "Social Networks and Technology Adoption in Northern Mozambique". In: *Economic Journal* 116.514, pp. 869–902. URL: <https://EconPapers.repec.org/RePEc:ecj:econjl:v:116:y:2006:i:514:p:869-902>.
- Cai, Jing and Adam Szeidl (August 2018). "Interfirm Relationships and Business Performance*". In: *The Quarterly Journal of Economics* 133.3, pp. 1229–1282. ISSN: 0033-5533. DOI: [10.1093/qje/qjx049](https://doi.org/10.1093/qje/qjx049). URL: <https://academic.oup.com/qje/article/133/3/1229/4768295>.
- Conley, Timothy and Christopher Udry (2010). "Learning about a New Technology: Pineapple in Ghana". In: *American Economic Review* 100.1, pp. 35–69. URL: <https://EconPapers.repec.org/RePEc:aea:aecrev:v:100:y:2010:i:1:p:35-69>.
- Cristea, Anca D. (2011). "Buyer-seller relationships in international trade: Evidence from U.S. States' exports and business-class travel". In: *Journal of International Economics* 84.2, pp. 207–220. ISSN: 0022-1996. DOI: <https://doi.org/10.1016/j.jinteco.2011.02.003>. URL: <https://www.sciencedirect.com/science/article/pii/S0022199611000250>.
- Fafchamps, Marcel and Simon Quinn (2013). "Social Networks and Business Practices: Evidence from a Randomized Experiment with Microentrepreneurs *". In:
- Foster, Andrew and Mark Rosenzweig (1995). "Learning by Doing and Learning from Others: Human Capital and Technical Change in Agriculture". In: *Journal of Political Economy* 103.6, pp. 1176–1209. URL: <https://EconPapers.repec.org/RePEc:ucp:jpolec:v:103:y:1995:i:6:p:1176-1209>.
- Grossman, Shelby and Dan Honig (2017a). "Evidence from Lagos on Discrimination across Ethnic and Class Identities in Informal Trade". In: *World Development* 96.C, pp. 520–528. URL: <https://EconPapers.repec.org/RePEc:eee:wdevel:v:96:y:2017:i:c:p:520-528>.

- Grossman, Shelby and Dan Honig (2017b). "Evidence from Lagos on Discrimination across Ethnic and Class Identities in Informal Trade". In: *World Development* 96.C, pp. 520–528. URL: <https://EconPapers.repec.org/RePEc:eee:wdevel:v:96:y:2017:i:c:p:520-528>.
- Hardy, Morgan et al. (2015). "Are Small Firms Labor Constrained? Experimental Evidence from Ghana We are grateful to". In:
- Jensen, Robert (February 2007). "The Digital Divide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector". In: *The Quarterly Journal of Economics* 122, pp. 879–924. DOI: [10.1162/qjec.122.3.879](https://doi.org/10.1162/qjec.122.3.879).
- Munshi, Kaivan (February 2004). "Social Learning in a Heterogeneous Population: Technology Diffusion in the Indian Green Revolution". In: *Journal of Development Economics* 73, pp. 185–213. DOI: [10.1016/j.jdeveco.2003.03.003](https://doi.org/10.1016/j.jdeveco.2003.03.003).
- Poole, Jennifer et al. (February 2010). "Business travel as an input to international trade". In:
- Portes, Richard and Hélène Rey (2005). "The determinants of cross-border equity flows". In: *Journal of International Economics* 65.2, pp. 269–296. ISSN: 0022-1996. DOI: <https://doi.org/10.1016/j.jinteco.2004.05.002>. URL: <https://www.sciencedirect.com/science/article/pii/S0022199604000716>.
- Startz, Meredith (2017). *The value of face-to-face: Search and contracting problems in Nigerian trade* *. Tech. rep.
- Steinwender, Claudia (May 2014). *Information Frictions and the Law of One Price: "When the States and the Kingdom became United"*. Working Papers 190. Oesterreichische Nationalbank (Austrian Central Bank). URL: <https://ideas.repec.org/p/onb/oenbwp/190.html>.

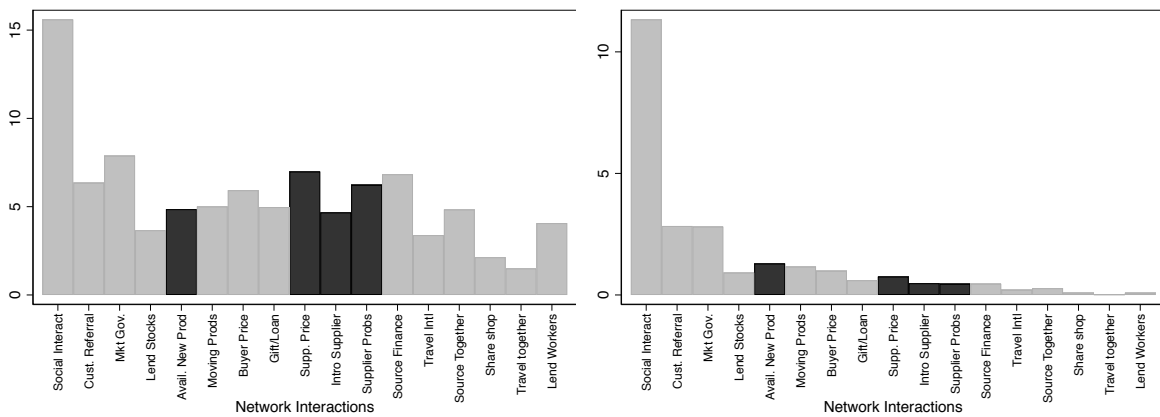
Figure 1: Owner-reported Network Activity

This figure visualizes self-reported network membership, interaction frequency, and size (degree). Subfigure A reports the proportion of the sample reporting each type of network interaction. Subfigure B reports the reported frequency of each interaction for the subset of the sample that reported it. Subfigure C reports the number of network contacts of each interaction type for the subset of the sample that reported it. Subfigure D reports the number of network contacts of each type for the full sample, including those with none.



(a) Binary

(b) Conditional Frequency

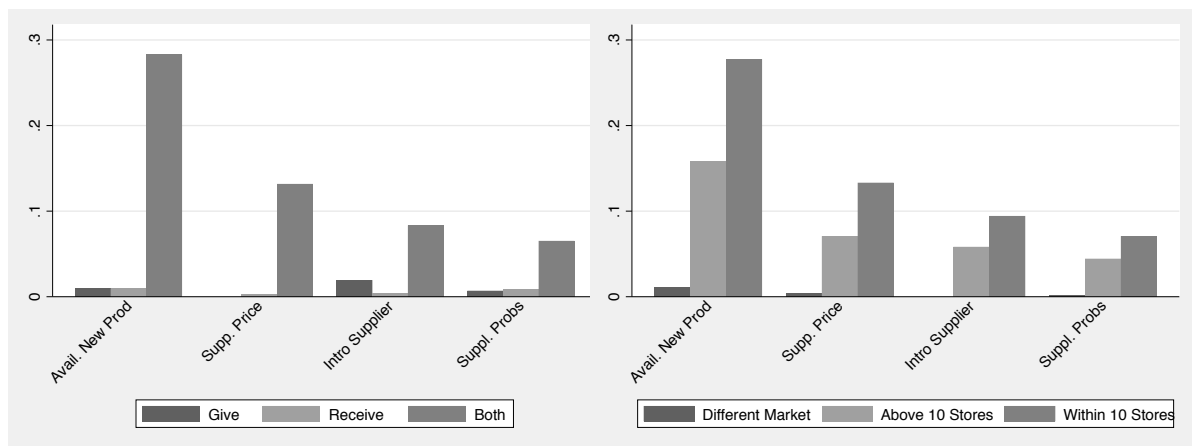


(c) Conditional Degree

(d) Unconditional Degree

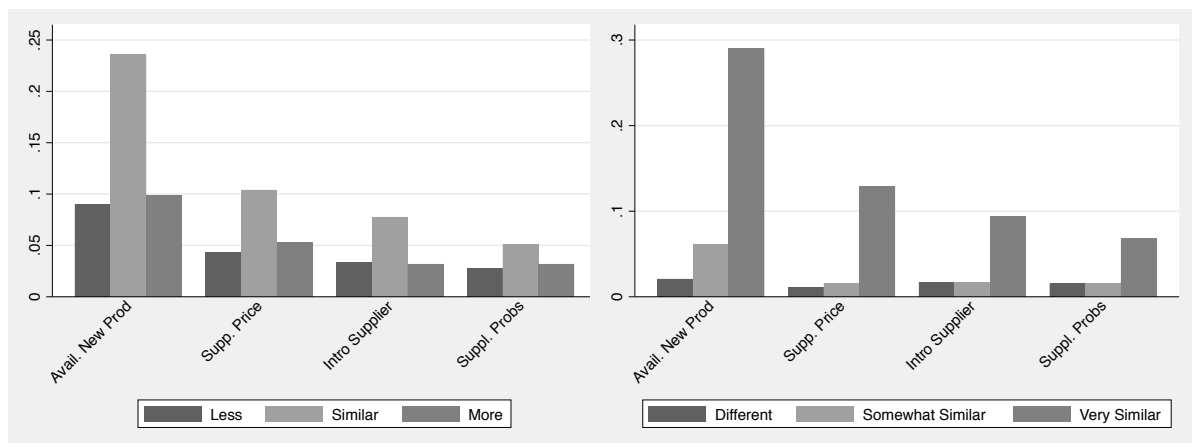
Figure 2: Trade-related Information Sharing by Direction, Distance, Homophily

This figure visualizes self-reported network membership by various qualifiers of interactions. Subfigure A reports the proportion of the sample reporting each type of network interaction by whether they give, receive, or give and receive in transactions. Subfigure B reports the proportion of the sample reporting each type of network interaction by trading shop geographic proximity. Subfigure C reports the proportion of the sample reporting network interactions by the experience levels of those who they interact with. Subfigure D reports the proportion of the sample reporting network interactions by homophily in product types.



(a) Give or Receive

(b) Geographic Proximity

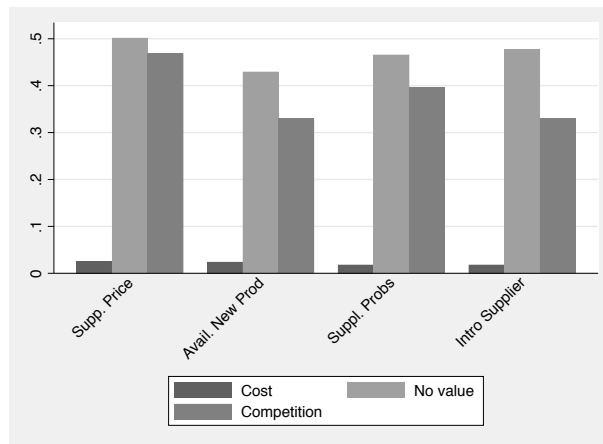


(c) Homophily in Experience Levels

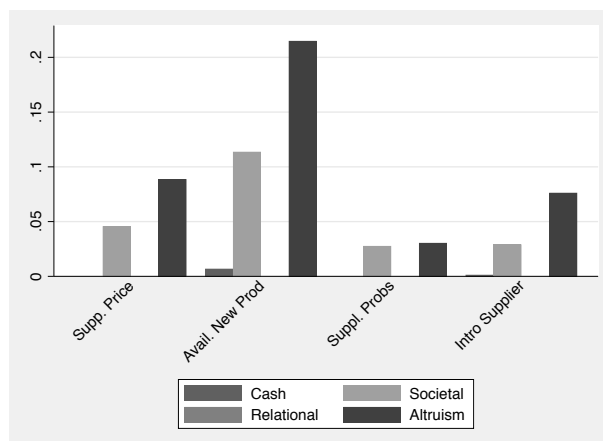
(d) Homophily in Product Types

Figure 3: Reasons For and Against Information Sharing

This figure shows self-reported reasons why traders chose to interact or chose not to interact with other traders. Subfigure A shows self-reported reasons why they may not engage in certain network activities. Each bar represents the proportion of the sample that revealed one of these categories to be a potential barrier. 'Cost' indicates either because interacting is costly and difficult or because they don't pay for certain information. 'No value' refers to the possibilities where respondents believe that the interaction is not helpful, or they believe that other traders are not interested. 'Competition' refers to the scenarios where respondents believe that interacting with other traders would hurt their business and refuse to interact with 'competitors'. Subfigure B shows reasons why respondents choose to engage in network activities. 'Cash' refers to respondents engaging in certain activities for cash money or commission. 'Societal' reasons are for kindness, solidarity, religious or social obligation, or the fear of being viewed unfavorably. 'Relational' reasons include repaying a favor, interacting for future favors, professional obligation to former masters, or to gain political favors. 'Altruism' refers to respondents trying to be kind to others.



(a) Barriers to Network Interaction



(b) Reasons to Interact

Table 1: Sample Summary Statistics

Table 1 shows baseline summary statistics of traders in the sample. Missing counts for age of respondent reflect respondents who refused to answer the question. Igbo is the predominant ethnicity amongst the traders in our sample. Proportion of traders that travel are conditional on them importing from outside Nigeria. Selling a particular product type, or being a wholesale trader is a dummy that takes the value of 1 if true.

	count	mean	sd	min	max
Age of Respondent	681	39.66	8.88	19	80
Male	722	0.74	0.44	0	1
Sells Apparel	722	0.55	0.50	0	1
Sells Electronics	722	0.12	0.33	0	1
Sells Beauty Products	722	0.12	0.33	0	1
Sells hardware	722	0.13	0.34	0	1
Sells homeware	722	0.11	0.31	0	1
Wholesale Traders	722	0.76	0.43	0	1
Paid Employees	722	0.54	0.86	0	8
Unpaid Employees	722	0.32	0.73	0	8
Number of Products	722	6.14	10.19	1	150
Trader Imports	722	0.55	0.50	0	1
Trader Travels (when Importing)	722	0.27	0.44	0	1

Table 2: Predictors of Information Sharing and Travel

Table 2 shows regressions of basic trader characteristics on binary network outcomes of interest. These outcome variables are 1 if these traders engage in the network interaction, 0 if otherwise. 40.7% of the sample engages in 1 of the 4 network outcomes of interest, while 19.4% of the sample engages in travel to conduct trading business.

	(1)	(2)	(3)	(4)
	Any Network	Any Network	Travel	Travel
size	-0.0166* (0.01)	-0.0158* (0.01)	0.0500*** (0.01)	0.0518*** (0.01)
businessage	-0.000958 (0.00)	-0.000485 (0.00)	-0.00234 (0.00)	-0.00182 (0.00)
male	-0.0319 (0.04)	-0.0235 (0.05)	-0.0382 (0.04)	-0.0160 (0.03)
igbo	0.00499 (0.04)	0.0225 (0.05)	-0.0457 (0.04)	-0.00509 (0.04)
Product Controls	No	Yes	No	Yes
N	722	722	722	722

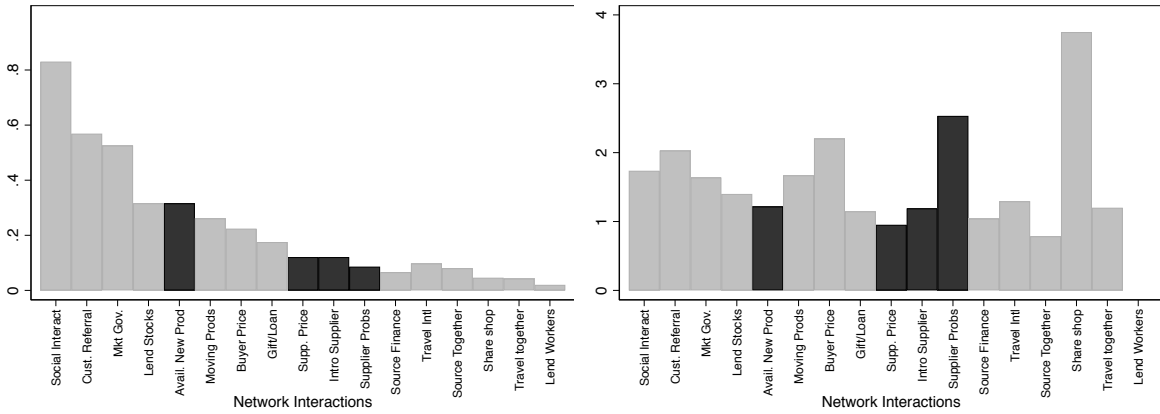
Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

A Appendix

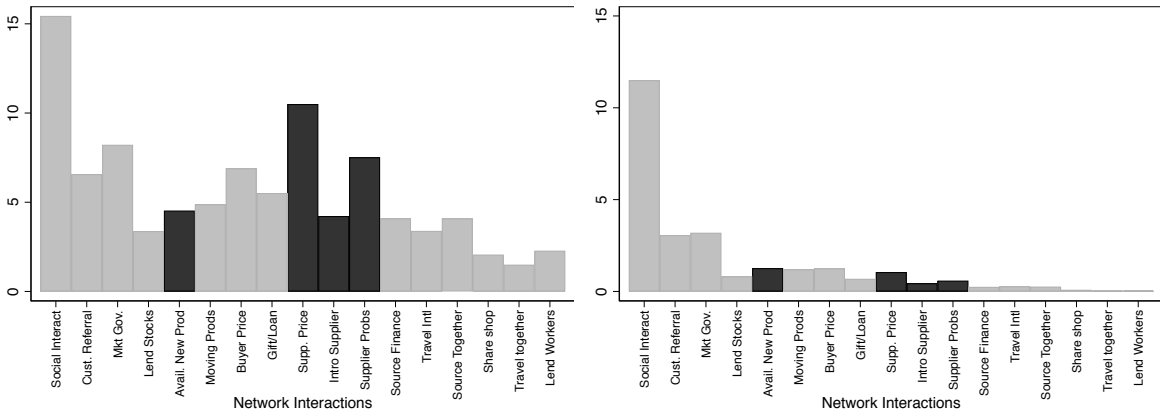
Figure A1: Owner-reported Network Activity - Importers

This figure visualizes self-reported network membership, interaction frequency, and size (degree). Subfigure A reports the proportion of importers reporting each type of network interaction. Subfigure B reports the reported frequency of each interaction for the subset of importers that reported it. Subfigure C reports the number of network contacts of each interaction type for the subset of importers that reported it. Subfigure D reports the number of network contacts of each type for importer, including those with none.



(a) Binary

(b) Conditional Frequency

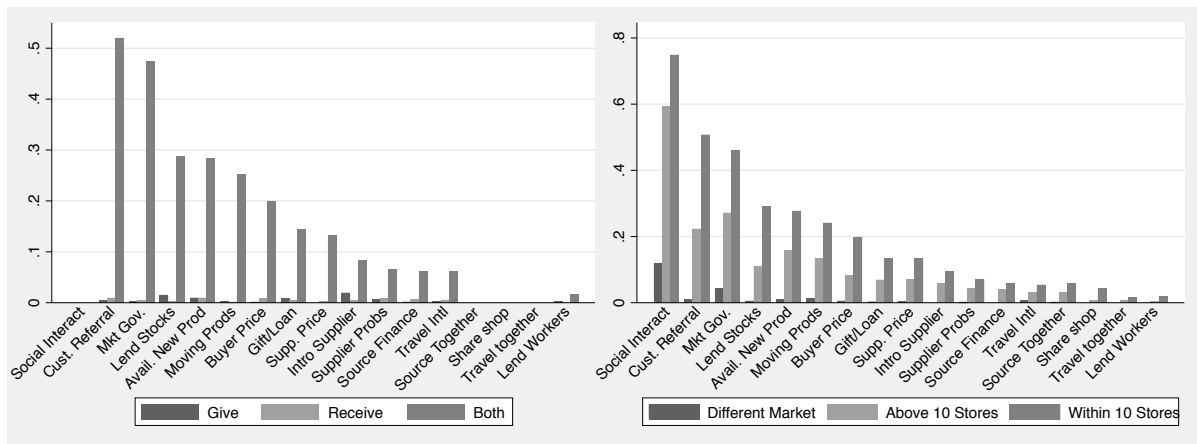


(c) Conditional Degree

(d) Unconditional Degree

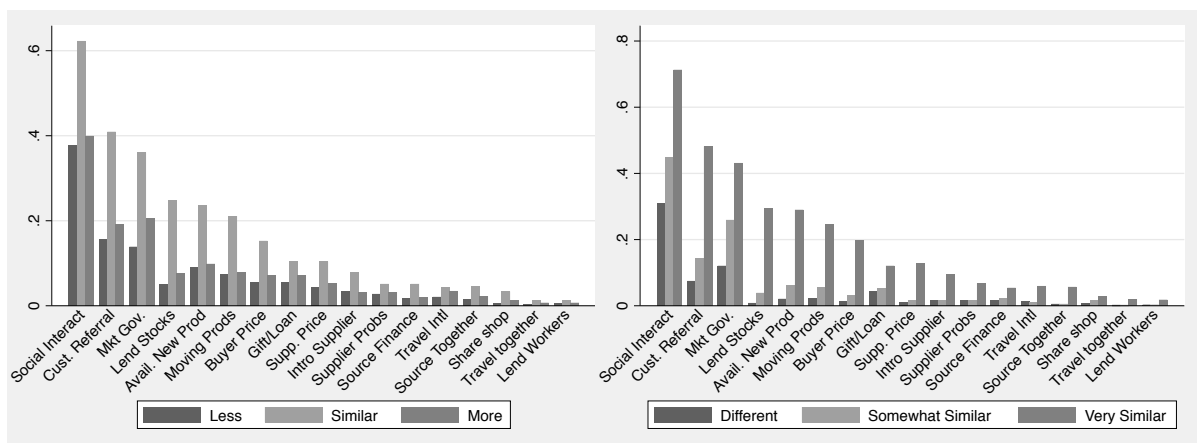
Figure A2: Network Activity by Direction, Distance, Homophily

This figure visualizes self-reported network membership by various qualifiers of interactions. Subfigure A reports the proportion of the sample reporting each type of network interaction by whether they give, receive, or give and receive in transactions. Subfigure B reports the proportion of the sample reporting each type of network interaction by trading shop geographic proximity. Subfigure C reports the proportion of the sample reporting network interactions by the experience levels of those who they interact with. Subfigure D reports the proportion of the sample reporting network interactions by homophily in product types.



(a) Give or Receive

(b) Geographic Proximity

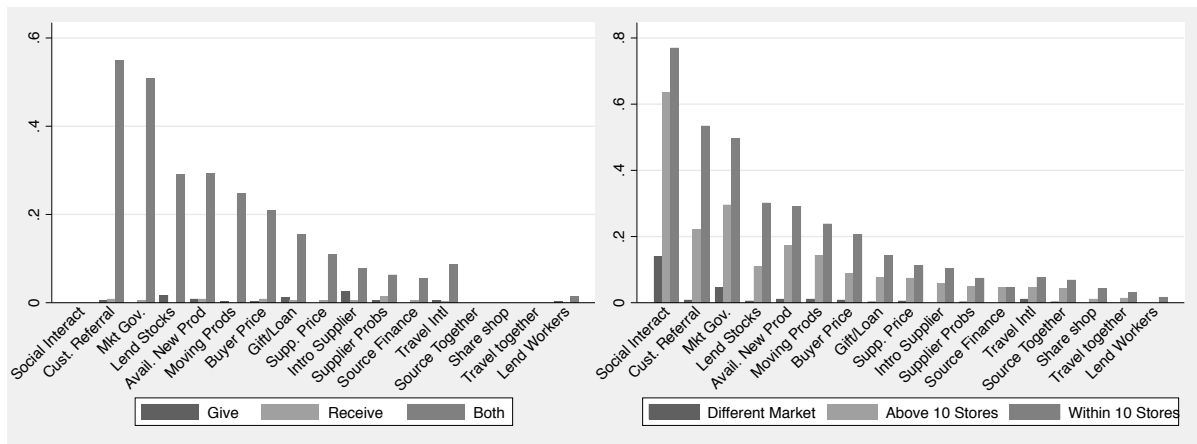


(c) Homophily in Experience Levels

(d) Homophily in Product Types

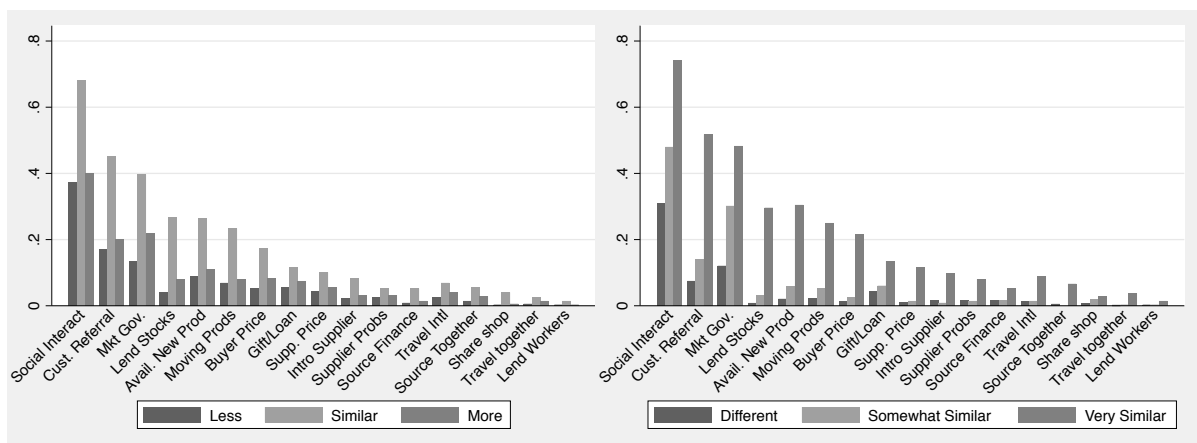
Figure A3: Network Activity by Direction, Distance, Homophily - Importers

This figure visualizes self-reported network membership by various qualifiers of interactions for the importers of our sample. Subfigure A reports the proportion of importers reporting each type of network interaction by whether they give, receive, or give and receive in transactions. Subfigure B reports the proportion of importers reporting each type of network interaction by trading shop geographic proximity. Subfigure C reports the proportion of importers reporting network interactions by the experience levels of those who they interact with. Subfigure D reports the proportion of importers reporting network interactions by homophily in product types.



(a) Give or Receive

(b) Geographic Proximity

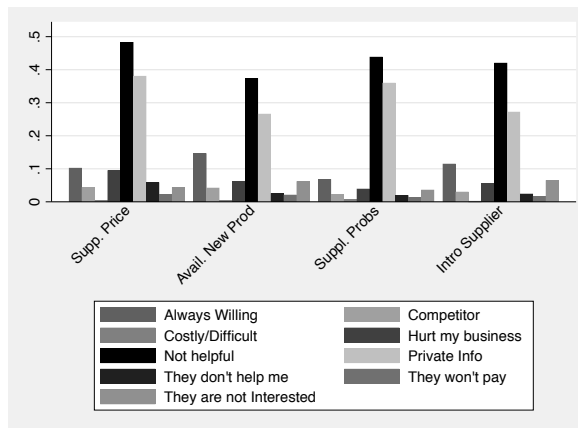


(c) Homophily in Experience Levels

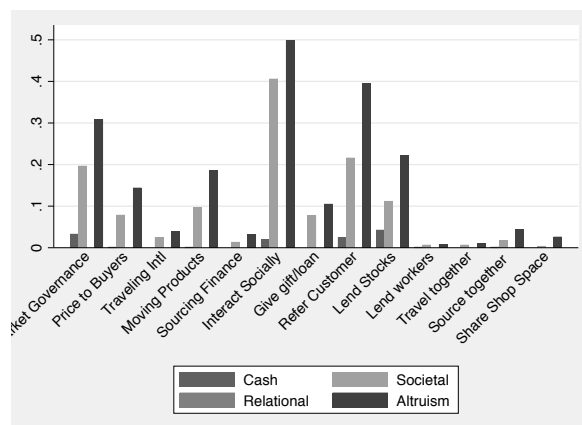
(d) Homophily in Product Types

Figure A4: Reasons For and Against Network Interactions

This figure shows self-reported reasons why traders chose to interact or chose not to interact with other traders. Subfigure A shows self-reported reasons why they may not engage in certain network activities. Each bar represents the proportion of the sample that revealed one of these categories to be a potential barrier. 'Cost' indicates either because interacting is costly and difficult or because they don't pay for certain information. 'No value' refers to the possibilities where respondents believe that the interaction is not helpful, or they believe that other traders are not interested. 'Competition' refers to the scenarios where respondents believe that interacting with other traders would hurt their business and refuse to interact with 'competitors'. Subfigure B shows reasons why respondents choose to engage in network activities. 'Cash' refers to respondents engaging in certain activities for dash money or commission. 'Societal' reasons are for kindness, solidarity, religious or social obligation, or the fear of being viewed unfavorably. 'Relational' reasons include repaying a favor, interacting for future favors, professional obligation to former masters, or to gain political favors. 'Altruism' refers to respondents trying to be kind to others.



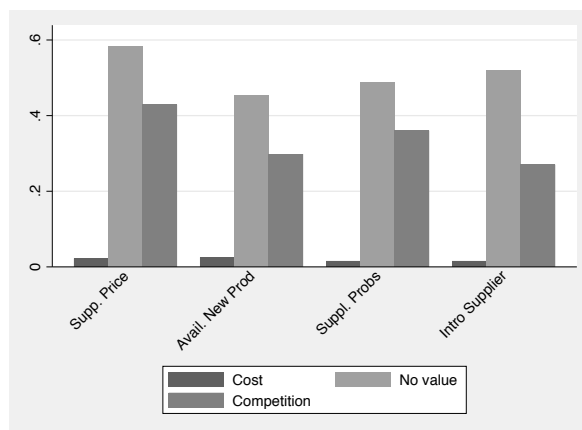
(a) Barriers to Network Interaction



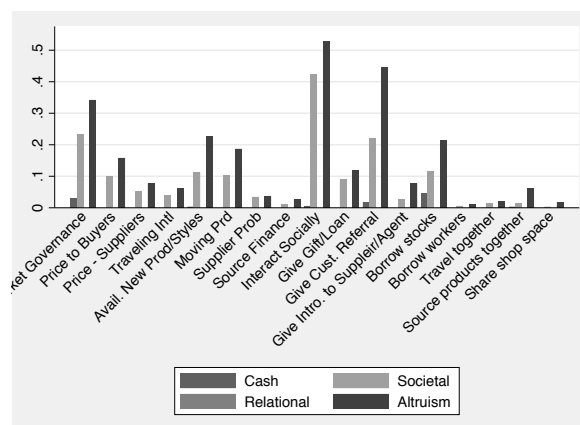
(b) Reasons to Interact

Figure A5: Reasons For and Against Network Interactions - Importers

This figure shows self-reported reasons why importers chose to interact or chose not to interact with other traders. Subfigure A shows self-reported reasons why importers may not engage in certain network activities. Each bar represents the proportion of importers that revealed one of these categories to be a potential barrier. 'Cost' indicates either because interacting is costly and difficult or because they don't pay for certain information. 'No value' refers to the possibilities where respondents believe that the interaction is not helpful, or they believe that other traders are not interested. 'Competition' refers to the scenarios where respondents believe that interacting with other traders would hurt their business and refuse to interact with 'competitors'. Subfigure B shows reasons why importers choose to engage in network activities. 'Cash' refers to respondents engaging in certain activities for cash money or commission. 'Societal' reasons are for kindness, solidarity, religious or social obligation, or the fear of being viewed unfavorably. 'Relational' reasons include repaying a favor, interacting for future favors, professional obligation to former masters, or to gain political favors. 'Altruism' refers to respondents trying to be kind to others.



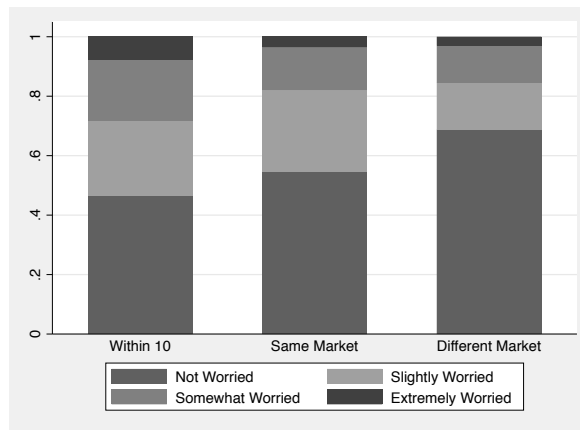
(a) Barriers to Network Interaction



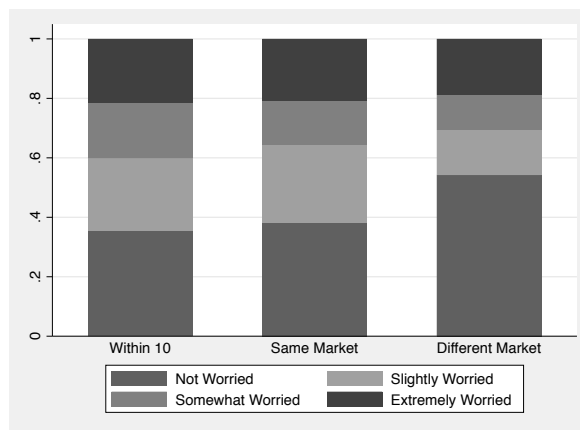
(b) Reasons to Interact

Figure A6: **Competition and Information Sharing Worries by Distance**

This figure shows the distribution of self-reported levels of worry when it comes to competition to secure customers and sharing business information with traders at different geographic distances.



(a) Worried about Competition



(b) Worried about Sharing Information

Table A1: Attrition Table

Table 5 shows the results of a two-sample difference test, between those that were sampled for this round of data collection and not.

(1)					
	Mean(Sampled)	Mean(Not Sampled)	Diff.	Std. Error	Obs.
Age of Respondent	39.66	37.66	-2.00***	0.54	1111
Male	0.74	0.68	-0.05*	0.03	1179
Sells Apparel	0.55	0.61	0.06**	0.03	1179
Sells Electronics	0.12	0.12	0.00	0.02	1179
Sells Beauty Products	0.12	0.13	0.00	0.02	1179
Sells hardware	0.13	0.10	-0.03	0.02	1179
Sells homeware	0.11	0.14	0.03	0.02	1179
Wholesale Traders	0.76	0.68	-0.08***	0.03	1179
Paid Employees	0.54	0.45	-0.09*	0.05	1179
Unpaid Employees	0.32	0.27	-0.05	0.04	1179
Number of Products	6.14	5.26	-0.88	0.55	1179
Trader Imports	0.55	0.49	-0.05*	0.03	1179
Trader Travels (when Importing)	0.27	0.23	-0.04	0.03	1179

F-Test of Joint Significance (pvalue): 0.0002

Table A2: Attrition Table - Importers

Table 6 shows the results of a two-sample difference test, between importers that were sampled for this round of data collection and not.

(1)					
	Mean(Sampled)	Mean(Not Sampled)	Diff.	Std. Error	Obs.
Age of Respondent	39.31	37.66	-1.64**	0.76	575
Male	0.77	0.70	-0.07**	0.04	620
Sells Apparel	0.65	0.72	0.07*	0.04	620
Sells Electronics	0.14	0.10	-0.03	0.03	620
Sells Beauty Products	0.10	0.11	0.01	0.03	620
Sells hardware	0.10	0.10	-0.00	0.02	620
Sells homeware	0.10	0.11	0.01	0.03	620
Wholesale Traders	0.84	0.83	-0.02	0.03	620
Paid Employees	0.65	0.56	-0.09	0.08	620
Unpaid Employees	0.37	0.34	-0.04	0.06	620
Number of Products	5.85	4.77	-1.08	0.70	620
Trader Travels (when Importing)	0.49	0.47	-0.02	0.04	620

F-Test of Joint Significance (pvalue): 0.1599

Table A3: Sample Summary Statistics - Importers

Table 1 shows baseline summary statistics of importers in the sample. Missing counts for age of respondent reflect respondents who refused to answer the question. Igbo is the predominant ethnicity amongst the traders in our sample. Proportion of traders that travel are conditional on them importing from outside Nigeria. Selling a particular product type, or being a wholesale trader is a dummy that takes the value of 1 if true.

	count	mean	sd	min	max
Age of Respondent	367	39.31	8.56	22	70
Male	395	0.77	0.42	0	1
Sells Apparel	395	0.65	0.48	0	1
Sells Electronics	395	0.14	0.34	0	1
Sells Beauty Products	395	0.10	0.30	0	1
Sells hardware	395	0.10	0.30	0	1
Sells homeware	395	0.10	0.30	0	1
Wholesale Traders	395	0.84	0.36	0	1
Paid Employees	395	0.65	0.95	0	8
Unpaid Employees	395	0.37	0.72	0	4
Number of Products	395	5.85	9.49	1	100
Trader Travels (when Importing)	395	0.49	0.50	0	1