

Do social networks affect remittances?

A study of migrant rickshaw pullers in New Delhi

Garima Agarwal, Shashank Bhatt, Adway De, Skand Goel & Arushi Kaushik

Guided by Dr Anirban Kar, Delhi School of Economics

8/10/2012

Abstract:

Recognizing that remittances are the primary objective of rural to urban migration, this paper seeks to study the effect of social networks on remittances. While networks are seen to play influential roles in rural settings (especially for informal risk sharing), such evidence is lacking in urban settings. We find that although networks do facilitate job search in the city, they have limited role in cost and risk sharing. Reasons for this are explored and possible initiatives for improvement are suggested.

1. INTRODUCTION

Rickshaw pullers are a classic example of migrant informal labor in the urban areas. They do not have any identity proof, lack human and physical capital and have restricted access to formal institutions such as credit. As several of them are temporary/floating migrants, these problems are more acute for they lack adequate political representation in the city. These features make this group ideal for studying informal institutions in the urban labor market¹. Our study, therefore, focuses on migrant rickshaw pullers in New Delhi who send regular remittances to their native villages.

One of the main objectives of migration is consumption smoothing through remittances (Bloom and Stark, 1985; Taylor, 1995). Further, according to the New Economics of Labour Migration, migration is a household decision which accounts for various microeconomic factors like information, insurance and social capital. Hence, social networks and remittances become linked. The amount of remittance can depend on how the migrant is placed in the city in terms of social ties. In this context, we look at city specific social networks – those of kinship, village based, occupational and those formed during the stay in the city - as entry points into the city and as arrangements for sharing risk and cost.

The paper is organized as follows. Section 2 reviews the existing literature and lays down the theoretical framework that guides our study. Section 3 describes the sampling strategy and our data. It includes a description of the structure of the rickshaw sector and the socio-economic characteristics of our sample. We also discuss modes of remittance transfer, especially the courierwala system which is prevalent in in this sector. Section 4 presents our analysis. Section 5 suggests some policy suggestions and concludes.

2. EXISTING LITERATURE AND THEORETICAL FRAMEWORK

As noted before, networks can potentially affect remittances in three ways – as entry points into the city, as risk sharing mechanisms and as arrangements of cost sharing. We look at each of these channels individually.

Village networks often serve as entry points for a migrant into the city. They “not only reduce the psychological costs of migration by providing a supportive relationship during the migrant's adjustment period but also reduce monetary costs by providing information on employment opportunities as well as material assistance during the job search” (Banerjee, 1983). Theoretically, the presence of a fellow villager in the city prior to one's migration might mean that some job search for the prospective migrant has already taken place.

On the other hand, however, it might be that the fellow villager is himself employed in a sector with low returns. In this case, the migrants might herd-in on a sub-optimal job². The presence of a village network in the city might also reduce incentives for post-migration job search. This could lead to overcrowding in certain job sectors. Mitra (2008) and Mitra (2010), while

¹There are a few studies on this group (Nandhi 2011, CCS 2012, Kurosaki et. al. 2007)

² Banerjee (1993)

highlighting the importance of informal channels for accessing urban jobs, find that in different urban slum settings in India “network extension leads to excess supplies of labor relative to demand”, thereby reducing upward mobility.

Once the migrant obtains a job, his network is likely to be important for his survival in the city. First, group formation may help reduce costs of living through sharing resources or economies of scale in consumption. Specifically, there may be a negative relationship between food expenditure (or room rent) and network size. Apart from directly reducing these material costs, networks can have indirect value by reducing effort and psychological costs. For instance, social networks can provide support in health emergencies or help remit savings in the absence of formal money transfer systems.

Networks may facilitate insurance or risk sharing in the absence of institutional mechanisms. There is ample evidence of this in rural settings. A seminal study by Rosenzweig (1988) found that kinship ties served both as family bonding grounds and consumption-smoothing mechanisms through which implicit insurance based transfers may take place. In more recent studies, such as Udry (1994), Fafchamps and Lund (2003) and Park (2006), the usual finding is that networks act as partial insurance mechanisms. Findings from existing literature on risk sharing in urban settings³ are less than conclusive. From a household survey of Istanbul, Adaman et al (2006) infer that monetary transfers from social networks and formal loans are complements. On the other hand, Alvi and Dendir (2009) in a study in Ethiopia find that “partial insurance may be taking place though only among the most vulnerable.” This indicates that the poorest household may share risk amongst themselves.

To develop a better understanding of empirical results in the literature, we need to look at the theory of risk sharing⁴. Individual risk sharing transactions are embedded in long term relationships. The desire to preserve the relationship appears to be the main motivation behind reciprocity and thus the main enforcement mechanism for informal risk sharing arrangements. In other words, “continuous and personalized relationships among community members help create an interaction framework resembling a repeated game of indeterminate or infinite duration. In such a game, reputation effects are at work and punishments can be meted out to willing free riders, thereby ensuring that promises to help those hit by adverse economic events are self-enforcing” (Platteau, 2006). Beliefs play an important role in equilibrium selection in the above framework. Shared beliefs of altruism and reciprocity make coming together to share risks more likely. Attitudinal⁵ trust between individuals becomes important in this respect. However, social norms are often the glue that holds such arrangements together. Social norms are,

³Risk pooling literature in the city appears to be sparse (especially for migrant populations and informal sector) (Alvi&Dendir, 2009). This may be due to data availability reasons or because it is easier to conceptualize closely-knit village networks as risk sharing networks.

⁴For a survey, see Platteau (2006). There is relatively new literature in ‘economics of networks’ that sees how individuals bilaterally form risk sharing relationships and what network structures are likely to emerge in a decentralized setting. See, for example, Bloch, Genicot, and Ray (2008) and Bramoullé and Kranton (2007).

⁵As Glaeser et al (2000) note, the empirical literature on trust has focused on questions such as: “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?” They find that such *attitudinal* responses are not good predictors of behaviour in trust experiments. Nonetheless, such general attitudes guide our day to day actions. Probably, that is the reason why opinions on ‘trust’ were expressed by several of our respondents almost spontaneously in response to questions on borrowing. It is from these opinions that we infer, as mentioned later in the paper, that levels of attitudinal trust are low. For varied economic perspectives on trust, see Dasgupta (2010).

however, difficult to establish in heterogeneous populations (Alesina and La Ferrara, 2000 & Coffe, 2009). People have more trust in and feel more comfortable interacting with others similar to them, for example, in terms of race and ethnicity.

Based on the above framework, our conjectures are as follows. First, we expect networks to be playing an important role in accessing a job. Ex ante, we cannot say if this leads to overcrowding. Second, we expect lower cost of living due to cost sharing through networks. Third, given the lack of access to formal insurance, we expect to see some risk sharing through networks. However, this is likely to be highly limited given the heterogeneous population and oscillatory migration.

3. SAMPLE

Sampling procedure

Our study is based on a survey of 112 rickshaw pullers in New Delhi, conducted during May-June 2012. Areas covered included Chandni Chowk, Delhi University North Campus (DU)⁶, Karol Bagh, Lajpat Nagar and New Delhi Railway Station (NDLS). A majority of sample points are from Chandni Chowk, Lajpat Nagar and DU⁷. At each of these places we interviewed rickshaw pullers near metro stations, rickshaw garages⁸, road-side dhabas where they eat and market places. At places where rickshaws were standing in a queue, we interviewed two persons from each queue.

General characteristics

Respondents belonged to five states of the country - Bihar, Uttar Pradesh (UP) and West Bengal (WB), Jharkhand, Madhya Pradesh (MP) - the bulk belonging to the first three states⁹. The following table summarizes some characteristics of our sample¹⁰.

Table 3.1: Sample characteristics

Variable	Unit	Description	Number of observations	Mean	Standard deviation
<i>age</i>	years	Age of the respondent	95	35	9
<i>dailyearning</i>	Rs.	Earnings per day	100	343	100
<i>dailysaving</i>	Rs.	Savings per day or earnings net of all expenditures	111	200	77
<i>delhisinceyrs</i>	Years	No. of years the respondent has been in Delhi	111	12	10
<i>food</i>	Rs.	Per capita per day food expenditure	110	102	42
<i>remittancemonth</i>	Rs.	Amount sent back home per month	99	4759	1945

⁶Including Kamla Nagar, Malka Ganj and Indira Vihar.

⁷Karol Bagh and NDLS are not considered for subsequent area-wise disaggregation.

⁸Rickshaw garages are essentially parking areas for the rickshaws of a particular malik. Usually, there are small eateries and shops in the garage area.

⁹Jharkhand and MP are not considered in subsequent state-wise disaggregation.

¹⁰After removing outliers as defined in the appendix.

Variable	Unit	Description	Number of observations	Mean	Standard deviation
<i>rentmonth</i>	Rs.	Amount of room rent paid per person per month	73	735	652
<i>rikrent</i>	Rs.	Per day rent paid for hiring rickshaw from the malik	109	44	6
<i>riksinceyrs</i>	Years	No. of years spent by the respondent in rickshaw pulling in Delhi	102	8	7
<i>trips</i>		No. of visits to native village per year ¹¹	106	6	6

Migrants do not always immediately take up rickshaw pulling on coming to the city. Besides, some respondents took up rickshaw pulling temporarily, when income from other occupations, such as working in a decoration/catering business, factory, hotel or shop, was low.

Most rickshaw pullers oscillate between their native village and the city, often going back home during agricultural season. The distribution of *trips* for respondents from Western UP is more concentrated towards the higher end of the spectrum as compared to the distribution from Eastern UP, Bihar and WB¹². This is probably on account of native villages being closer to Delhi for UP respondents making it easier to go back home.

Occupational characteristics

Due to limited finances and seasonal nature of their migration, rickshaw pullers usually rent vehicles from rickshaw maliks (fleet owners) in the city. We learnt of maliks who owned more than 700 rickshaws as well as of smaller ones with less than 20. In principle, this ownership is illegal as one person is not allowed to own more than one rickshaw¹³. As a result most maliks have to pay bribes to run their business. Daily rent paid by pullers varied between Rs. 30 to Rs. 50 depending on area of operation.

Sample average earning per day was Rs. 343 while saving was Rs. 200. There was no significant difference between the earnings and savings of people from various states. However, pullers in DU earn significantly less than those in Chandni Chowk and Lajpat Nagar¹⁴. Also, savings in Lajpat Nagar are significantly more than those in Chandni Chowk¹⁵ and DU¹⁶. (Table 3.2)

¹¹Calculated as 12/(Time gap (in months) between two subsequent visits to village). It does not take into account the time spent in the native village.

¹² In the absence of any official boundary between Eastern and Western UP, we used telecom circles for classification of districts.

¹³Article 3(1) of the Cycle Rickshaw Bye-Laws of 1960 under Section 481 of the Delhi Municipal Corporation Act of 1957 requires that the owner and the driver of the cycle rickshaw must be the same person. As per **Cycle-Rickshaw Bye-Laws,1960, Section 3(1)** No person shall keep or ply for hire a cycle rickshaw in Delhi unless she himself is the owner thereof and holds a license granted in that behalf by the Commissioner on payment of the fee that may, from time to time, be fixed under subsection(2) of Section 430. Provided that no person will be granted more than one such license (Provided further that Commissioner may grant more than one licenses to a widow or a handicapped subject to the maximum of five licenses.)

¹⁴Significant at 1% level.

¹⁵Significant at 5% level.

¹⁶Significant at 1% level.

Table 3.2: State and area wise summary

	WB	Bihar	UP
Composition of the sample (%)	23	38	30
<i>rentmonth</i> (Rs.)	635	694	1195
<i>dailyearning</i> (Rs.)	335	356	348
<i>dailysaving</i> (Rs.)	215	209	191
<i>remittancemonth</i> (Rs.)	4503	4758	4467
<i>food</i> (Rs.)	112	102	99
<i>kbaasvillage</i>	15	8	4

	Lajpat Nagar	Chandni Chowk	DU
Composition of the sample (%)	29	25	28
<i>rentmonth</i> (Rs.)	645	852	524
<i>dailyearning</i> (Rs.)	364	347	296
<i>dailysaving</i> (Rs.)	234	194	170
<i>remittancemonth</i> (Rs.)	6112	4663	3747
<i>food</i> (Rs.)	106	103	99
<i>kbaasvillage</i>	13	8	9

Living conditions

79 respondents stayed in a rented room, 15 took shelter in rickshaw garages and another 16 slept either on their rickshaw or on a footpath. Average room rents seem to vary with the area of operation. (Table 3.2) During the course of our survey we also learnt that pullers might be paying rent to local mafias for footpath space, especially in the NDLS and Chandni Chowk areas.

53% of respondents take all their meals at roadside eateries. The remaining 47% cooked at least one of their meals at home. Of the people who cook, only 15% cook alone. Mean *food* was Rs. 95 for those who cooked at least once and Rs. 108 for others.

84 respondents reported having fallen ill since coming to Delhi. Of these, 45% visited government hospitals, 47% preferred private clinics and 11% visited chemists and purchased medicines over the counter. Many respondents complained of poor quality of service in government hospitals despite low cost of treatment.

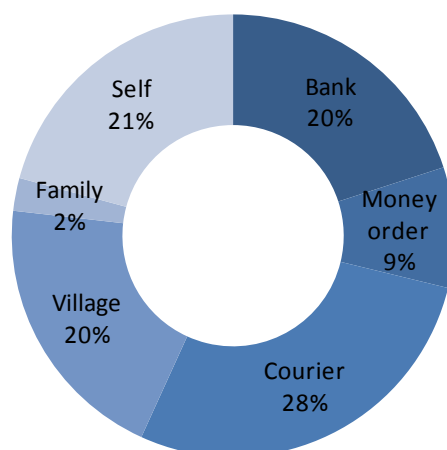
Remittances

Average monthly remittance for the sample was Rs. 4758. Unlike daily earnings and savings, state effects do matter for remittances. Pullers from WB remit significantly higher amounts than those

from UP¹⁷. As before, area effects are significant with pullers from Lajpat Nagar remitting the most, followed by Chandni Chowk and then DU¹⁸ (Table 3.2). We found a significant positive relationship between remittance per month and saving¹⁹.

Figure 3.1 gives a summary of the modes of remittance transfer.

Figure 3.1: Modes of remittance transfer



About one-fifth of respondents carry the remittance money themselves. Interestingly, all of these people are from UP and go home once a month on an average. Another one-fifth send money through family or village contacts. 32% of these people are from Bihar and 43% are from UP.

30% of respondents reported using a courierwala, an informal hawala channel, to send money home. A courierwala collects money from migrants in city and ensures delivery to families in native villages through agent/s in the villages. Delivery is almost instant as the agent often uses his/her own reserves to furnish deliveries. The courierwala reimburses his agents later, often through multiple *benami* bank accounts. While courierwalas differ in scale²⁰, a uniform commission of 4-5% is charged per transaction. Half of the people using a courierwala were from WB and another 40% were from Bihar. 60% of courier users plied in Lajpat Nagar.

One-tenth of the sample used money orders for remittance transfer and 45% of these people were from Bihar. Also, another one-fifth of the sample used banks to transfer money²¹. Respondents using courierwala remit significantly higher amounts than others²².

Also, there seems to be some effect of distance from native village and mode of money transfer used as 73% of respondents from UP transfer money on their own, while 65% of WB and 36% from Bihar use courierwalas.

¹⁷Significant at 10% level.

¹⁸Remittances from Lajpat Nagar are significantly higher than those from Chandni Chowk and DU at 1% and those from ChandniChowk are greater than DU at 5%.

¹⁹Significant at 1% level.

²⁰See Appendix for details.

²¹However, this does not mean that the respondent owned the bank account. Often, migrants send money through the accounts of acquaintances. It is also possible that some of the observations considered here, in fact, correspond to the courierwala mode.

²²Significant at 1% level.

4. ANALYSIS

In this section we present our analysis with reference to the theoretical framework detailed earlier.

Networks can operate at various levels – family, village, city and professional. Accordingly, we classified our respondents’ acquaintances as in Table 4.1.

Table 4.1: Contact variables

Variable	Description	Number of observations	Mean	Standard deviation
<i>villagersinnbhd</i>	Per respondent no. of fellow villagers staying in the same neighbourhood	70	21.73	18.8
<i>sharewith</i>	No. of people with whom the accommodation (room) is shared	77	4.96	4.083
<i>rikvillage</i>	Per respondent no. of fellow villagers engaged in rickshaw pulling in the city	45	12.72	8.75
<i>khaasvillage</i>	No. of fellow villagers in the city that a respondent feels ‘close’ to	80	9.48	7.21
<i>crcontact</i>	Per respondent no. of non-village contacts who are rickshaw pullers	46	13.67	18.36
<i>cnr</i>	Per respondent no. of city contacts who are not rickshaw pullers e.g. malik, landlord, chaiwala	60	4.13	5.54

The variable *khaasvillage* tries to capture the number of strong village ties in the city²³. *Khaasvillage* varies by state, with WB and UP migrants having highest and lowest averages respectively. Similarly, area effects are significant – Lajpat Nagar has the highest average *khaasvillage*, followed by DU and Chandni Chowk²⁴.

Another point worth mentioning here is that out of the 64 respondents who share rented rooms, an overwhelming 92% have fellow villagers as roommates.

Networks as entry points into the city

Rickshaw pullers are generally required to provide a guarantee from somebody (who the malik knows well) in order to obtain a rickshaw²⁵. The guarantor takes the responsibility of reimbursing the malik in case the rickshaw puller runs away with the vehicle. In our sample, a sizeable 74% of the migrant rickshaw pullers were introduced to the malik by a fellow villager or family member, while only 18% were introduced by city contacts (such as chaiwala or acquaintances from the previous jobs in the city)²⁶. Village networks are, therefore, crucial for job referral. It is important

²³ The notion of strong ties is similar to Granovetter (1973).

²⁴ All differences are significant at the 5% level.

²⁵ Lack of formal identity proof makes this all the more necessary.

²⁶ 8% of the people in our sample approached the malik directly and obtained the rickshaw without a reference.

to realize that providing guarantee for a rickshaw is based on trust. Therefore, trust in these networks is vital to providing employment to migrants.

We came across an interesting case of a migrant cluster substituting for individual referral in Lajpat Nagar. The Mini Market area has a sizeable number of migrant Bengali rickshaw pullers. Most of these people belong to Malda and form a rather closely knit community. These people are forced to migrate as the Bhagirathi river frequently changes course, submerging their agricultural lands. Even in the absence of personal contacts, it is not difficult for a native of Malda to get a rickshaw in the area. As 'everyone' from Malda stays in this area, nobody can benefit from stealing a rickshaw. A deviant would eventually have to come back to the Mini Market and would then be caught. So maliks can rent out rickshaws without fearing theft.

In Section 2, we discussed how networks could exert two opposing influences – to positively act as substitutes for individual job search in the city and to cause overcrowding in certain sub-optimal sectors. In 76% of the cases where rickshaw pulling is the first job of the migrant in Delhi, a village contact introduced him to the malik. Thus, it is likely that village networks do, in fact, facilitate job search in the city. Due to data restrictions, we were not able to test for the overcrowding hypothesis.

Disaggregating state-wise, we find that job referral through village networks (for first job in the city) is negatively related to the distance of native states. While 81% of WB migrants were introduced to maliks through village contacts, the figures for Bihar and UP were 71% and 61% respectively.

Benefits of village networks can be observed in other domains as well. Our data indicates the possibility that people who have migrated with the help of village networks have an advantage in terms of accommodation. The average room rent paid by those who were introduced by village contact is Rs 657 and for those not introduced by a village contact is Rs. 886²⁷.

Cost of living and networks

It might be expected that if more people live together, then they can save on living costs. Specifically, if a higher number of people are cooking together, then per head cost of food (and fuel) might be lower. However, we find no such effect in our data. The correlation between *food* and *sharewith* for the people cooking on their own is low and insignificant. This is perhaps because observations are very few as most rickshaw pullers eat out due to the nature of their job. No relation is found for *fuel* either. Room rent is another significant living expense. As expected, *rentmonth* and *sharewith* are found to be significantly negatively correlated at the 1% level.

43 people reported having some family member in Delhi²⁸. Of these, 32 reported falling ill during their stay in Delhi. In case of illness, 40% of the people were looked after by their families. Others depended on fellow villagers and roommates. However, in cases of more serious illness (such as typhoid, malaria and tuberculosis), family was the major support. Roommates

²⁷ The difference is significant at 10% level.

²⁸ A clear distinction between family and village network is often difficult. It has been seen in other settings that it is 'extended family' networks that perform socio-economic roles. For instance, Angelucci et al (2009) find that, for a sample of villages in Mexico, extended family networks act as being a source of informal insurance for their members. In our case, a lot of migrant rickshaw pullers end up in the city in their present jobs through these extended families too.

helped in providing for medicines and food. Probably, then, kinship ties, where they exist, appear to be important for taking care in case of illness. Roommate and village networks, however, begin to play a bigger role in the absence of family in the city. These interventions do not extend to large monetary help and mostly provide for non-monetary needs. Throughout, however, we find that in the event of serious illness, most people return home. This happens in anticipation of better care and lower costs.

Networks are also important for remittance transfer. 50% of the respondents depend on some form of network to remit money – family, fellow villagers or courierwala²⁹.

Risk sharing, borrowing and trust

We did not observe any large-scale borrowing (amounts exceeding Rs. 1000) between rickshaw pullers. However, pullers often loan each other small amounts on a day-to-day basis. This daily ‘len-den’ is more common among roommates or fellow villagers but can also be observed between people operating in the same area. In case of emergency expenditure, respondents preferred borrowing in their native villages. Those who did borrow in the city often paid monthly interest rates of up to 10% to money lenders (often rickshaw maliks or landlords). In general, respondents were not very open about discussing borrowing, hence data is limited.

Specifically, we had *a priori* expected that at least in some cases social networks would provide some monetary benefit in tiding over adverse consumption shocks. But apart from anecdotal evidence of this in a few isolated cases, and probably a bit of it among Malda migrants in Lajpat Nagar, we found very little substantiation for this. In fact, several of our respondents felt that, in case of an emergency, it would be difficult for them to organise even small amounts of money in the city. We conjecture some explanations for these observations.

The lack of risk sharing in our sample is, in part, obviously due to respondents’ meagre savings³⁰. Also, the overall level of attitudinal trust amongst rickshaw pullers is low. Several respondents recounted unpleasant experiences in the city which have made them suspicious.

Moreover, given the postulated framework of repeated interaction along with reputation effects, we can conjecture certain reasons as to why we do not see a prevalence of risk sharing among migrant rickshaw pullers. First, given that community ties between rickshaw pullers aren’t as closely knit as between members of a village community, it becomes difficult to track individual behaviour. This prevents reputation effects from coming into play.

Second, as migration in case of rickshaw pullers is usually temporary, the probability that interactions between two people will continue for a long time is very low. This makes networks less stable and increases the rate at which rickshaw pullers discount their future, making cooperation more difficult.

Third, lack of homogeneity in the interacting group makes trust difficult. For one, ethnic identities become more pronounced in an alien environment. Bengali rickshaw pullers in Lajpat Nagar area told us that while it was possible for them to borrow-lend a little bit among themselves, no such transactions could be expected with people from other states. It is possible

²⁹ Prior referral is needed to access a courierwala.

³⁰ This can be accommodated as a ‘participation constraint’ in the theory that follows.

that this exclusivity is in part due to the large concentration of a particular ethnic group in the area.

However, probably the most interesting effect of networks is through regional clustering. While most areas are serviced by small and medium scale courierwalas, the Bengali settlement in Lajpat Nagar has large operators as well³¹. More significantly, however, these courierwalas offer a wider range of services. First, pullers often park their daily savings with courierwalas, who come around for collections each morning and maintain a ledger of accounts for each client³². They debit money from a client's accumulated savings when money is to be sent home. Second, in case the amount the client needs to send exceeds his savings, the courierwala allows him to borrow the rest³³. Transaction charges apply for the additional borrowed money but it seems no additional interest charges are levied. These are short-term 'loans' to be paid back within a week (unless the client is unwell, in which case the period can be extended)³⁴.

One of the reasons why large courierwalas exist in this area, and can provide these services, is the relative homogeneity of their client population. The cohesiveness of the group makes it easier for everybody to keep a tab on everyone else. Thus monitoring costs are reduced. As there is the constant threat of people running away, courierwalas loan money only to those who can be tracked in the village. As a result, default is low. Moreover, a smaller geographical spread of operations reduces costs for the courierwala, allowing him to expand scale. One interpretation of this arrangement can be that in the absence of explicit formal or informal risk pooling, the courierwalas are providing the services for a fee. This is enabled by the nature of the network.

5. CONCLUSION

In order to see how social networks affect remittances in the rickshaw puller labor market in Delhi we consider various channels. We find that village networks are often the backbone of a migrant's support structure. These village networks provide job referrals and also help in securing cheaper accommodation in the city. We find economies of scale in room rent on account of room sharing, but not in food or fuel expenditure. Villagers and room-mates provide help in case of illness, especially when family is absent, but this is largely non-monetary. Attitudinal trust appeared to be low in general. We do not observe any large scale borrowing, but some day-to-day lending takes place between roommates and fellow villagers, and sometimes between pullers operating in the same area. We conjecture some reasons for this. Additionally, ethnic clustering facilitates development of informal mechanisms that provide vital services. The extensive courierwala system for remittance transfer and credit is one such example. On the

³¹ Apart from rickshaw pullers from Malda, Lajpat Nagar also has a sizeable and close-knit group of people from Katihar district in Bihar. While Katihar courierwalas could not be contacted but conversations with pullers indicated the existence of an established courierwala system even here. Arguably, the Katihar population is not as closely knit as the Malda population. One of the reasons might be the non-exclusivity of language.

³² As several rickshaw pullers in Lajpat Nagar stay in open air garages, keeping large amounts of money with them is unsafe.

³³ It is not very clear how a client's maximum credit limit is determined, but it is likely to be proportional to the client's savings. It probably also depends on the history of transactions between the two parties.

³⁴ This is similar to what Fafchamps and Gubert (2007) find in Philippines.

whole, therefore, informal social networks arguably do not provide substantial leverage to remittances.

Thus, incomes are low, physical and human capital is lacking and social networks fail to provide much support for rickshaw pullers. Thus, social safety nets would help improve the situation of those at the bottom rung of the informal labor market. Most importantly, formal identity proof will go a long way in mainstreaming these migrants. Financial inclusion would help insure against risks as well as provide for more efficient remittance transfer³⁵. In the Appendix we discuss some existing models that have been successful (Eko Financial Services, SBI Tiny). Moreover, there are examples of private ventures in other cities (Rickshaw Bank Project and Sammaan Foundation) that have been able to help by facilitating rickshaw ownership and by supplementing daily income. So, a holistic approach is what is required.

³⁵Several of our respondents told us that lack of identification was a major hurdle in opening bank accounts. Identification, therefore, would also play a major role in formalizing money transfer.

APPENDIX A: OUTLIERS

The following table mentions our identification rule for outliers for some variables, based on visual examination.

Table A.1

Variable	Outlier rule
<i>sharewith</i>	≥ 12
<i>khaasvillage</i>	≥ 40
<i>remittancemonth</i>	≥ 15000
<i>Cnr</i>	≥ 100
<i>Crcontact</i>	≥ 100
<i>villagersinnbhd</i>	≥ 100
<i>Rikvillage</i>	≥ 40

APPENDIX B: TYPES OF COURIERWALAS

We classify courierwalas into three broad categories.

Small-scale courierwalas

Small-scale courierwalas are often just rickshaw pullers who have their own bank accounts. They service a small number of clients, mostly fellow villagers. One respondent from Lajpat Nagar, Chobi Lal, is such a courierwala. He sends remittances to his village through an SBI account. His agent is his wife who withdraws the money and delivers it to individual houses. He charges a commission of 4% of the amount transferred. He needs to pay an additional Rs. 35 per Rs, 10,000 transferred as he uses another national bank to deposit money in his SBI account³⁶. He handles around Rs.30,000 each month, and makes a profit of around Rs.1000.

Medium-scale courierwalas

Medium-scale courierwalas service clients across villages in a district. Some of these courierwalas are rickshaw pullers themselves. One respondent fell into this category and seemed significantly better off than the average rickshaw puller. Data on volumes handled was unavailable, however, respondents in Lajpat Nagar said each medium-scale courierwala handles about 80 clients and competes with his peers. If a courierwala fails to remit a client's money on time, he loses not only that client, but also others as news spreads fast.

Large-scale courierwalas

Information on large-scale courierwalas is sketchy, but they do exist. They often have other side-businesses and are in a different economic class from their clients. According to Chobi Lal, each of these people control around Rs. 15,00,000 in a month. Money is transferred through multiple benaami accounts.

³⁶ He patronizes this other bank as one of the tellers there helps him fill out deposit slips. He is illiterate and cannot do this himself.

APPENDIX C: MODELS OF INTERVENTION

C.1 Formal Money transfer services

C.1.1 Eko Financial Services

Eko Financial Services is a private company that has combined technology with the RBI's business correspondent model to provide easy access to banking. Eko uses existing infrastructure (local shops mostly) to set up extension counters for banking services. A client can walk up to such an Eko counter and open a zero balance, no-frills account, deposit money and even transfer money domestically. These accounts are not subject to standard KYC norms. One of Eko's main partners is SBI. Others include ICICI Bank and Yes Bank. Cash transfers occur in real time and almost round the clock.

For account-to-account transfers using SBI, Rs. 25 is charged for the transfer of any amount less than Rs. 1250. For amounts exceeding this but less than Rs. 5000, charges are 2% of the value of the transfer. This is half of what the courierwala charges. Transactions using ICICI or Yes Bank are subject to transaction charges of 1.5% for different amounts.

CEO and Co-founder, Abhishek Sinha says that Eko is also considering account-to-cash transfer services. Using this a migrant in the city could open an account and send money back home through institutional channels without his family needing a bank account. Security checks like one time password (OTP) using mobile phones have been devised.

Despite many advantages, awareness amongst rickshaw pullers about such services is very limited. Also, opening an account at such counters requires some ID proof. Most pullers do not have any formal documentation and therefore cannot access these services.

C.1.2 SBI Tiny

The SBI Tiny card provides easy banking services for underprivileged communities. For this programme, SBI ties up with NGOs who play the role of 'Customer Service Providers' (CSP) or rather work like a local branch. The aim of this unique scheme is to cover as many of the poor unbanked population in the country as possible. It also offers easy "Money Transfer Service" to anywhere in India. One of the respondents reported using SBI Tiny account.

The SBI Tiny account does not require 'KYC' (or Know Your Customer) documents and can be opened with zero balance. In this account one can deposit or withdraw between Rs.10 to Rs. 10,000 (the upper limit for this account is Rs. 50,000).

The SBI Tiny card, which functions like a normal savings bank account, helps to enhance savings behaviour and encourages financial inclusion.

C.2 External agencies

This section briefly describes two social enterprises that have helped address specific issues within similar groups to forge networks³⁷.

Table C.1: External agencies for rickshaw pullers

Company	Highlights
Rickshaw Bank Project	<ul style="list-style-type: none">• Founded in 2004• Based in Guwahati• Group lending for purchasing rickshaws
Sammaan Foundation	<ul style="list-style-type: none">• Founded in 2007• Based in Patna• Low interest rickshaw loans• Marketing and advertising services using rickshaws

C.2.1 Rickshaw Bank Project

Set up in 2004, the Rickshaw Bank project is one of the main programs of a Guwahati-based non-profit, Centre for Rural Development. Founder, Dr. Pradip Sarmah says the project supports around 6000 rickshaw pullers in and around Guwahati. The nature of the industry is such that most pullers spend their entire lives driving rented rickshaws and never manage to build up savings for themselves. To address this, the project helps pullers get ownership of their rickshaws through group lending. Dr. Sarmah says that groups get formed naturally on the basis of friendship and common residential area. This self-selection eases administrative efforts of collection of installments and peer pressure helps prevent default. Moreover, new members are accepted only if they can get a referral from an existing member.

Members of this project drive rickshaws designed by IIT Guwahati, which are easily differentiable from their local counterparts. This obviously different design makes it impossible for pullers to run away with the rickshaw or sell it on the market without paying off their loan. Short-term economic gains from selling the rickshaw are not realized and pullers can reap the benefits of asset ownership.

Institutional support has also helped formalize the sector to some extent. For instance, if a passenger forgets personal belongings on a rickshaw, the Rickshaw Bank can be contacted for retrieval. Therefore, passengers have started favouring these rickshaws over others and this has helped increase incomes for Rickshaw Bank pullers.

Area based social networks already existed before this project. However, people were not able to help each other mostly on account of financial pressure and a lack of traceability. This project has helped address that.

C.2.2 Sammaan Foundation

The Sammaan Foundation was set up in 2007 in Patna to create a more formalized taskforce of rickshaw pullers. It is a for profit organization that earns revenue by providing advertising space on its rickshaws. Also, Sammaan pullers are trained to market products like mineral water and

³⁷Following sub-sections are based on personal communication with the founders.

juice to customers. The Foundation helps pullers access low interest loans through national banks so that they get ownership of their rickshaws. In collaboration with IIT Kanpur, Sammaan has also come up with a new rickshaw design (much like the Rickshaw Bank Project) that members can choose to buy.

Advertising and marketing revenue are shared with the puller, thereby supplementing income. Samaan members are a heterogeneous group. It is likely that no overarching social network existed between them a priori. Post intervention, however, the group is more cohesive and reciprocity has been observed. For instance, when a Sammaan rickshaw owner is away from the city, other members watch over his rickshaw.

Founder, Irfan Alam says two broad trends have been observed amongst Sammaan members who were migrants into Patna at the time of joining. One, members started spending a longer time in the city. Two, those from remote areas migrated with family to the city to access better quality services. Institutional support probably helped migrant pullers overcome initial investment barriers to shifting base to the city.

6	क्या आप बीच-बीच में अन्य काम भी करते हैं?					
C	रहन-सहन					
1	दिल्ली में आपके परिवार से कितने लोग हैं?					
2	क्या आपके परिवार से अन्य शहरों में भी लोग हैं?					
3	दिल्ली में आपके परिवार के लोग क्या काम करते हैं?					
4	क्या आप दिल्ली में रहने वाले अपने परिवार वालों के साथ रहते हैं?	Y	--> 6 below			
		N	--> 5 below			
5	आप इन लोगों को कितनी बार मिलते हैं?					
6	आपके रहने की व्यवस्था क्या है?	मालिक द्वारा दिया पक्का घर	मालिक द्वारा दिया कच्चा घर	अपना कमरा	टेंट	अन्य:
7	आपके साथ कौन रहता है?					
8	आपके खाने की व्यवस्था क्या है?					
		--> if not own, go to 10 below				
9	आप खाना पकाने के ईंधन पर हर हफ्ते कितना खर्च करते हैं?					
10	आप खाने पर हर हफ्ते कितना खर्च करते हैं?					
11	आप किराने का सामान कहाँ से खरीदते हैं?					
D	अन्य लोग					
1	जहाँ आप रहते हैं, वहाँ आपके गांव से अन्य लोग भी होंगे. इन में से कितनों से आप हर रोज मिलते हैं?					

2	ये लोग क्या काम करते हैं?					
3	इन लोगों के अलावा आपकी शहर के कुछ अन्य लोगों से भी जान पहचान हैं? ये लोग कौन हैं?		eg. Chai wallah, malik etc			
4	क्या आपके इन लोगों के साथ अच्छे सम्बन्ध हैं?					
5	क्या आपके अन्य गावों के रिक्शेवालों से अच्छे सम्बन्ध हैं?					
6	इन में से कितनो से आप नियमित रूप से मिलते हैं?					
E	आय और प्रेषण					
1	अपके काम का क्या समय है?	शुरू:	समाप्त:			
2	क्या आप हफ्ते में किसी दिन छुट्टी लेते हैं?					
3	आपकी हर दिन की अनुमानित आय कितनी है?					
4	आपकी हर दिन की अनुमानित बचत कितनी है?					
5	आप कहाँ बचत करते हैं?	बैंक	दोस्त	साहूकार	स्वयं	अन्य
6	आप महीने में कितनी बार घर पैसा भेजते हैं?					
7	आप हर बार अनुमानित कितना पैसा भेजते हैं?					
8	आप घर पैसा कैसे भेजते हैं?	स्वयं	अन्य			
9	आप स्वयं कितनी बार घर जाते हैं?					
10	घर जाकर आप क्या काम करते हैं?					
11	इस काम से कितनी आय होती है?					

F	स्वास्थ्य					
1	शहर में आने के बाद आप कभी बीमार पड़े हैं?	Y	N			
2	जब आप पिछली बार बीमार पड़े या आपका एक्सिडेंट हुआ तो किसने आपकी देखभाल की?					
3	आपका इलाज कहाँ हुआ?	सरकारी डिस्पेंसरी				
		प्राइवेट डिस्पेंसरी				
		घर पर/इलाज नहीं हुआ				
		अन्य _____				
4	इसमें कितना खर्चा आया?					
G	उधार					
1	क्या आपको अचानक से बहुत खर्चा करने की ज़रूरत पड़ी है? (उदाहरण के लिए - शादी, बीमारी, खेती-बाड़ी)					
2	इस पैसे का इंतज़ाम आपने कहाँ से किया?					
3	आपकी ज़रूरत पूरी हो पायी?					
4	क्या आपको किसी अन्य कारण से भी पैसे उधार लेने की ज़रूरत पड़ी?					
5	क्या पूरा उधार चुकता हो गया है?					
6	क्या आपने कभी किसी को उधार दिया? क्या वो पैसे वापस मिल गए?					
7	क्या गाँव में अभी कोई कर्ज़ बाकी है?					

REFERENCES

Adaman, Fikret & Oya Pinar Ardic & Didem Tuzemen (2006), "Network Effects in Risk Sharing and Credit Market Access: Evidence from Istanbul", Working Papers 2006/17, Bogazici University, Department of Economics.

Alesina, Alberto & Eliana La Ferrara (2000), "Participation In Heterogeneous Communities", *The Quarterly Journal of Economics*, MIT Press, vol. 115(3), pages 847-904, August.

Alvi, Eskander & Seife Dendir (2009), "On consumption insurance in poor urban areas: Evidence from Ethiopia", *Journal of International Development*, Volume 21, Issue 5.

Banerjee, Abhijit V. (1992), "A Simple Model of Herd Behavior", *The Quarterly Journal of Economics*, MIT Press, vol. 107(3), pages 797-817, August.

Banerjee B. (1983), "Social Networks in the Migration Process: Empirical Evidence on Chain Migration in India", *The Journal of Developing Areas*, Vol. 17, No. 2 (Jan., 1983), pp. 185-196

Bramoullé, Yann & Rachel Kranton (2007), "Risk-sharing networks", *Journal of Economic Behavior & Organization*, Elsevier, vol. 64(3-4), pages 275-294.

Bloch, Francis & Garance Genicot & Debraj Ray (2008), "Informal insurance in social networks", *Journal of Economic Theory*, Elsevier, vol. 143(1), pages 36-58, November.

Centre for Civil Society (CCS) (2012), "Three Wheels on the Road of Regulation".

Coffé, Hilde (2009), "Social Capital and Community Heterogeneity", *SOCIAL INDICATORS RESEARCH* Volume 91, Number 2 , 155-170.

Dasgupta, P. (1988), "Trust as a Commodity", in D Gambetta, ed., *Trust: Making and Breaking Cooperative Relations*, Oxford: Basil Blackwell.

Dasgupta, P. (2010), "A Matter of Trust: Social Capital and Economic Development", SCI Discussion Paper Series. Manchester: Sustainable Consumption Institute; 2010. Working Paper No. 1.

Fafchamps, Marcel & Flore Gubert (2007), "Contingent Loan Repayment in the Philippines", *Economic Development and Cultural Change*, University of Chicago Press, vol. 55, pages 633-667.

Fafchamps, Marcel & Susan Lund (2003), "Risk-sharing networks in rural Philippines" *Journal of Development Economics*, Elsevier, vol. 71(2), pages 261-287, August.

Glaeser, Edward & David Laibson & José A. Scheinkman & Christine L. Soutter (2000), "Measuring Trust," *The Quarterly Journal of Economics*, MIT Press, vol. 115(3), pages 811-846, August.

Granovetter, Mark S. (1973), "The Strength of Weak Ties", *American Journal of Sociology*, Volume 78, Issue 6 (May, 1973), 1360-1380.

Kurosaki, T. & Sawada & Asit Banerji & S.N. Mishra (2007), "Rural-Urban Migration and Urban Poverty: Socio-Economic Profiles of Rickshaw Pullers and Owner-Contractors in North-East Delhi", CIRJE F-Series CIRJE-F-485, CIRJE, Faculty of Economics, University of Tokyo

Ligon, Ethan (2005), "Formal Markets and Informal Insurance", *International Review of Law and Economics*, Elsevier, vol. 25(1), pages 75-88, March.

Mazzocco, M. (2007), "Household Intertemporal Behavior: a Collective Characterization and a Test of Commitment", *Review of Economic Studies*, 74(3), 857—895.

Mitra, A. (2008), "Social Capital, Livelihood and Upward Mobility", *Habitat International*, Elsevier, Vol.32, No.2.

Mitra, A. (2010), "Migration, Livelihood and Well-being: Evidence from Indian City-Slums", *Urban Studies*, 1-20.

Nandhi, Mani A. (2011), "The Urban Poor and their Money: A Study of Cycle Rickshaw Pullers in New Delhi", *IFMR Research*.

Ogaki, M. & Q. Zhang (2001), "Decreasing Relative Risk Aversion and Tests of Risk Sharing", *Econometrica*, 69(2), 515—526.

Park, C. (2006), "Risk Pooling Between Households and Risk-Coping Measures in Developing Countries: Evidence From Rural Bangladesh", *Economic Development and Cultural Change*, 54, 423-457.

Platteau, Jean-Philippe (2006), "Solidarity Norms and Institutions in Village Societies: Static and Dynamic Considerations", *Handbook on the Economics of Giving, Reciprocity and Altruism*, Elsevier.

Quisumbing, Agnes R. & Scott McNiven & Marie Godquin (2008) "Shocks, groups, and networks in Bukidnon, Philippines", CAPRI working papers 84, International Food Policy Research Institute (IFPRI).

Rosenzweig, M. (1988), "Risk, implicit contracts, and the family in rural areas of low-income countries", *Economic Journal*, 98, 1148–1170.

Scott, James (1979), *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia*, Yale University Press.

Stark, O. & David E. Bloom (1985), "The New Economics of Labor Migration", *American Economic Review*, American Economic Association, vol. 75(2), pages 173-78, May

Taylor, E. J. (1999), "The New Economics of Labour Migration and the Role of Remittances in the Migration Process", *International Migration*, 37, 63-88.

Townsend, R. M. (1994), "Risk and Insurance in Village India", *Econometrica*, 62, 539-591.

Udry, C. (1994), "Risk and Insurance in a Rural Credit Market: An Empirical Investigation in Northern Nigeria", *Review of Economic Studies*, 61, 495-526.