Impacts of Urbanisation on Trust:

Evidence from a Lab in the Field on a Natural Experiment

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Abstract

We conduct a field trust game under a natural experiment context to test the impacts of urbanisation on trust. We conjecture that urbanisation, defined in this context as the process of state-led rural-urban migration, contributes to a transformation of trust levels among co-villagers and towards outsiders. We test this conjecture in an experimental approach and more generally, examine whether the urbanisation will produce significant impacts on *in-group* trust and *out-group* trust. The research finds that urbanisation does not decrease significantly the trust towards co-villagers, meaning the *in-group* trust did not change statistically significantly. However, the trust towards outsiders does increase as a result of the state-led urbanisation. We also run a regression on the trust exhibited towards participants in the experiment and found the partial effect of whether they are co-villagers or outsiders weakens as a result of the urbanisation, and therefore conclude urbanisation decreases *out-group* discrimination in trust.

1. Introduction

Trust, as a key component of social capital, is essential for economic development (Coleman, 1988; Fukuyama, 2001; Gambetta, 1988; Tabellini, 2010). Trust can improve efficiency by facilitating coordinated actions among members of society. Fukuyama (1995) argues that high trust among citizens is positively correlated with the excellent performance of all institutions of a society. As a result, the decline of trust would impose an economic cost for the whole society. Since trust is pivotal in economic and social development, the research about the factors associated with trust has drawn a lot of scholarly attention. Trust is usually closely related to a lot of social and economic variables and is considered embedded and deeply constrained by the social background.

Among all the economic and social transformation processes, the urbanisation, usually defined as a process of rural-urban migration (Knox and McCarthy, 2011), will produce huge impacts . During the urbanisation, people move from a traditional acquaintance society (face-to-face society) to a stranger society, and traditional social structure is reconstructed; as a result, the trust level might be affected by this process, not least because of the increased proportion of interactions taking place between strangers. Given the broad scope of urbanisation across the world, the impacts of it on trust are worthy of in-depth study. However, research about the impacts of urbanisation on trust is scant and far from consistent. Some scholars argue that the urbanisation level is negatively correlated with trust (Zhang et al., 2015), whereas others show different evidence (Zhang and Ke, 2003). The difficulty of researching this topic lies in the fact that urbanisation is a comprehensive process, interacting with a lot of confounding factors. Therefore, to gain the pure partial effects of urbanisation will be a great challenge.

China is an important country in which to investigate the relationship between urbanisation and trust, not only due to the large population involved in the process, but also the fact that the urbanisation of China is mainly driven by governmental policies, rather than being market-oriented (Xu et al., 2011), which provides possibilities for researchers seeking exogenous shocks to realize causal identification. There have been pieces of research focusing in this field. By running the regression analysis based on the data set of a cross-regional survey, Zhang and Ke (2003) found the trust level of one region in China is positively correlated with the urbanisation ratio of the region. They hypothesise that for a country under economic transition like China, the more transactions happening in cities, the greater is the trust within strangers, compared to rural areas. For business transaction usually leads to

repeated communication and cooperation, from which strangers begin to understand each other and build their trust.

However, in their research, the endogeneity problem remains unsolved. Because in those places with high trust levels, economic development and industrialization are easier to be achieved along with the process of urbanisation. As a result, reverse causality is an inevitable issue. Besides, those who are more willing to trust strangers may choose to move to more urbanized areas. Then it is possible that people with high trust levels crowded into those regions with high urbanisation levels, and then the high trust levels of those regions would not be the result of urbanisation. Following the explorative path of Zhang and Ke (2003), this paper aims to identify the causality from urbanisation to trust level by conducting trust games under a natural experiment that happened in Yangtze River Delta Economic Zone in China. Moreover, in contrast to the previous research, we measure trust under an incentive-compatible context, rather than employing the self-reported data.

In 2004, there were two neighbouring villages located in the northern part of Suzhou City, Jiangsu Province. To increase the construction land quota[1], the local government relocated the village called *Jincheng* to the city centre which is about 10 kilometres away from their original location. By contrast, the village called *Liangang* remained where it had been. Interviews of both retired and incumbent governmental officials who were responsible for this project in 2004 confirmed that the decision of moving *Jincheng*, rather than *Liangang*, into the city centre was made arbitrarily.

Therefore, the treatment, the state-led urbanisation, conducted on these two groups is random and exogenous, which provides an ideal environment to identify the causal relationship between urbanisation and trust. By running trust games in both places, we found that the trust within the group (i.e. between members belonging to the original village) in *Jincheng* is not significantly different with that in *Liangang*, while the trust for outsiders is significantly higher by residents of *Jincheng* than those of *Liangang*. These findings vindicate the hypotheses that urbanisation will improve the trust level among strangers, which is consistent with Zhang and Ke (2003), but on the other hand, has no statistically significant impacts on

[1] According to the Land Management Law of the People's Republic of China, the quota of construction land refers to the control means adopted by the Chinese government to protect arable land. Every year, the maximum area of construction land shall be set in all localities, and no excess shall be allowed. The Ministry of Land and Resources has scope control on construction land; the urban and rural areas can develop new construction within the quotas set by the Ministry of Land and Recourses. Since the houses of the villages usually occupy large construction land areas, moving the villagers into concentrated apartments can save lots of construction land areas.

the trust for the co-villagers.

One important contribution of this research is that it controls the endogeneity by employing a natural experiment, realizing causal identification. The logic is straightforward. If researchers can find a natural experiment under which the grouping is arbitrarily conducted, and there is ample evidence to believe that participants in either group shared the same socio-economic environment, one can realize the causal identification of the partial effect from urbanisation on trust by conducting experiments in both two places. Another contribution is that this research distinguishes trust of different types, that is, the trust among the acquainted (*in-group* trust) and the trust among strangers (*out-group* trust). This research addresses the impacts from urbanisation on trust of both sorts, which will contribute to the understanding of the changing process of trust. This research found that urbanisation does not produce negative impacts on trust, broadening our understanding of the outcomes of the pervasive global urbanisation that has happened in developed countries and is currently happening in developing countries. This paper found a channel through which urbanisation promotes economic development, that is by increasing the trust level. This finding can shed some light on the mechanism of urbanisation in promoting economic development.

2. The Natural Experiment

As discussed above, it is challenging to identify the causal effects of urbanisation towards trust. Convincing identification strategies in addressing the endogeneity problem usually include regression discontinuity (Imbens and Lemieux, 2008; Lee and Lemieux, 2010; Thistlethwaite and Campbell, 1960), instrumental variables and laboratory or natural field experiments. Though these approaches are insightful, each of them has inevitable shortcomings. As for the RDD, the difficulty lies in the difficulty to find a complete exogenous discontinuity (Karaja, 2017a). Instrumental variables are efficient in removing the bias from the regression coefficients, however, since the error term is not observable, it is usually difficult to find an appropriate instrumental variable uncorrelated with the dependent variable. Trust is an intricate psychological and social phenomenon, to find a variable not correlated with trust but correlated with urbanisation is almost impossible. In referring to the experimental approach, it is very difficult, in a lab environment, to emulate urbanisation due to its complexity. As for field experiments, it is more or less unattainable for researchers to design these such that they exogenously impose urbanisation on citizens.

The ideal environment is to find groupings which are arbitrarily made according to exogenous

random consideration. And the groupings should consist of a control group without the treatment of urbanisation and an experimental group with the treatment of urbanisation. We found a natural experiment happened in 2004 in Yangtze River Delta Economic Zone, which may provide an ideal environment to identify the causality from urbanisation to trust.

2.1 Historical Background: Chinese Urbanisation and Motives

There are various definitions of urbanisation, across various disciplines, including economics, sociology, geography, urban planning etc. (Cohen, 2006; Knox and McCarthy, 2011; Vries, 2013). However, in this research, we gave a relatively simple definition for urbanisation. We define urbanisation as the process of rural-urban migration (Zhang and Song, 2003). Such a process of migration is likely to have many socioeconomic consequences. In this research, part of our focus is on assessing the pure effects of migrating from rural areas to a city, controlling for other socioeconomic factors which might be brought by the urbanisation. However, we also attempt to identify channels through which migration exerts its influence – in particular, via its effect on income.

Urbanisation can release the labour force from agricultural sectors to high-value-added sectors and will promote a more efficient labour market (Henderson, 2003). China's urbanisation since the late 1970s has been a historically important phenomenon in terms of its economic and social effects on this populous country. Changes caused by urbanisation are unprecedented in scale and complexity. Many rural counties have been transformed drastically in the dynamically growing coastal regions with the Pearl River Delta and Yangtze River Delta the two rapidly urbanizing clusters (Zhu, 2018).

The uniqueness of Chinese urbanisation is that most of the urbanisation in China is state-led, usually called *Chaiqian* in Chinese, which is a state-led removing process, targeting to remove the original residents from villages to urban areas (Xu et al., 2011). Since its first economic reform in 1978, China began to transform from a planned economy to a more market-oriented one. Local governments were given more power in developing the economy (Song et al., 2011). Some scholars believe that the competition for promotion between local government officials from different regions[2] plays an important role in explaining the economic miracle of China (Jin et al., 2005; Montinola et al., 1995; Qian and Xu, 1993; Zhou, 2007). Desiring

[2] The competition between local governments is employed by scholars to explain the miraculous growth of Chinese economy. By boosting the local economy, officials of different regional governments compete for the limited promotion chances to higher-level official positions. More details can be found from the research of Jin et al.(2005), Montinola et al. (1995) and Qian and Xu (1993).

economic growth, the local governments are in an urgent need of both capital and land, which can be acquired by the state-led urbanisation.

There are two main motives for the local governments' keen practices of *Chaiqian*. The first is to increase their construction land quota. The local government forces farmers to move into apartment blocks which occupy much less construction-land than their original sparsely distributed homesteads. That is because the central government of China sets a "red line" (*hongxian*), or a floor, whereby the total amount of arable lands for grain production must not be lower than 1.8 billion mu (Ong, 2014). Under such strict regulation, the Ministry of Land Management sets the land quotas at the national level and allocates them to the provincial units, who afterwards allocate the quotas to sub-provincial governments. The farmland conversion quotas are usually strictly fixed, but there are several ways through which local governments can increase the quotas of construction land. One is to relocate the homesteads (*zhaijidi*), to acquire additional quotas of construction land. Because the homesteads usually occupy large amounts of construction land, removing the villagers into concentrated apartments can save construction land quotas. However, when decisions are made in consideration of construction quotas, the villages to be demolished are very often chosen rather randomly and the locations themselves are not special.

The second reason is to sell the land to real estate developers for revenues. Since the reform of the tax system in 1994 led by the former premier Zhu Rongji, the local governments must take responsibilities of multifarious money-consuming projects. As a result, the local governments choose to sell land to real estate developers to raise funds (Xu et al., 2011). By driving the farmers into concentrated block resettlements, local governments can lease the saved land to the real estate developers (Ong, 2014).

These two motives may drive disparate decision considerations. In order to increase the construction-land quotas, the relocated sites are usually chosen arbitrarily. And if the intent of relocating villagers is targeted in gaining and then selling lands of the villagers to developers, the choice is usually made in light of the value of the land itself. Thus, for the villagers, even if neighbouring, the unmoved and the relocated usually shared a different economic environment, which causes trouble for us to justify the exogeneity of the grouping.

2.2 The Natural Experiment in Suzhou, Jiangsu Province

The "centralized village" policy has been widely implemented in Jiangsu Province since 2001.

In southern Jiangsu Province, a large number of villagers have moved to the city for employment, leaving villages sparsely populated or "hollowed-out", and former villagers were forced to gather in high-rise apartment units in dense neighbourhoods starting from when the city government incorporated these "hollowed-out" villages. Enterprises gather in industrial parks, villagers live in apartment communities, large-scale farming is run by local companies instead of individual family farms, decentralized industrial enterprises and farms. With the emergence of densely populated living areas, local governments have acquired additional available lands that became uninhabited. The policy was originally introduced to deal with the "hollow village" problem, but when other parts of the local government in southern Jiangsu realized how lucrative such land deals were, they began to pursue them with enthusiasm, often regardless of whether there was a real need for land or urbanisation.

Suzhou is one of the most developed cities across China, with its gross GDP amounting to 1.73 trillion yuan in 2017, and a total population of more than 10 million. The urbanisation ratio in Suzhou is about 76% in 2017 (Suzhou Municipal Statistics Bureau, 2018)[3]. To fuel economic development, the Suzhou government has promoted urbanisation vigorously since the 1980s (Dennis Wei, 2002). The location of Suzhou in China is indicated by the red star in Figure 1 in the Appendix.

We found a case of two villages in Suzhou City, Jiangsu Province. In 2004, one of them, *Jincheng*, was demolished by the government, and its villagers were forced to move into apartment blocks and thus *Jincheng* changed from a village into an urban community. According to the relevant policies of *Chaiqian* in Suzhou city, people moved from the village were relocated to new apartments, and they still live together and nearby. Another village, *Liangang*, remained in the original location.

In 2004, the social and economic factors of *Liangang* and *Jincheng* are presented in Table 1:

[3] In China, a city is usually defined as including its surrounding rural areas. The official definition of the urbanisation ratio for a Chinese city is its proportion of permanent residents who live in its urban areas.

Table 1: Basic Statistical Data of *Liangang* and *Jincheng* in 2004

	Liangang	*Jincheng*
Household	620	589
Numbers of Residents	1736	1660
Female Ratio	46%	48%
Net Annual Income	6750	6800
Average Age	43	41

Notes: These basic statistics above are from an unpublished survey conducted from 2003 to 2004[4]. These historical documents were kept in the Taiping Policy Station, which administers both *Liangang* and *Jincheng*. We received access to these non-public documents after the permission of the deputy director of the police station.

Because the village-level statistics are very rare in China, we cannot collect all the important variables about these two villages. Though we got data on some of the most important variables from the historical documents, there are still some characteristics, such as years of education, religion, job etc. about which we did not get the exact information. From the basic statistics, we can see these two groups are similar.

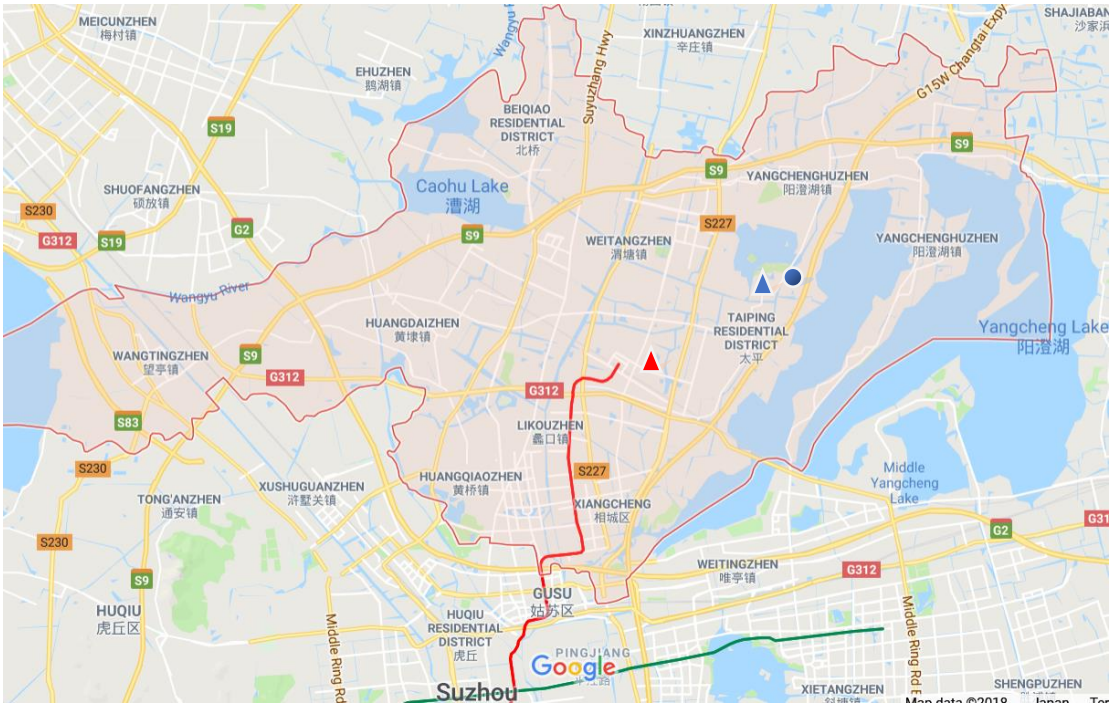
Besides, we propose another two arguments to support our view that these two villages are similar across the main social and economic factors in 2004. First, both *Liangang* and *Jincheng* are not traditional villages, as they belong to the category of so-called brigade villages (*Shenchan Dadui* in Chinese). After the Chinese Communist Party gained the regime of China, it began the socialist transformation of the rural villages. Since 1963, numerous original villages have been reorganized and families distributed into different new villages, usually called production brigades. Such kind of village is targeted at agriculture production, which is quite different from the traditional clan village that forms upon kinship (Frederick W., 1978). Both *Jincheng* and *Liangang* where we run trust games belong to those production brigades; in 1964, the government of Suzhou city reallocated the households of the traditional villages into various production units, among which are *Liangang* and *Jincheng*. The households of traditional villages were redistributed into different productions units' villages *(Shenchan Dadui* in Chinese) randomly. As a result, the villagers of *Liangang* and *Jincheng* can be thought of as randomly distributed. From 1964 to 2003, the dual urban and rural household registry system lasted in Suzhou, until 2003, when the Suzhou government abolished the dual system (Suzhou Municipal People's Government, 2003a). During this

period, free urbanisation of rural villagers was prohibited severely, so the residents of *Liangang* and *Jincheng* can be considered as stable pools. Second, we interviewed 5 elderly original residents in *Jincheng* and 4 in *Liangang*, who are all over 60 years old. According to the interview records, they were convinced that *Liangang* and *Jincheng* are extremely similar in all aspects, including family member structure (i.e. the composition of family members of these two villages are similar), age structure, religions and average education levels (see the interview records in the Appendix).

As mentioned in the previous section, there are two kinds of motives for local governments to implement the *Chaiqian*: first, to acquire valuable lands; second, to increase construction land quotas. As we shall argue below, the *Chaiqian* happened in our natural experiment on account of the latter purpose. As a result, this natural experiment creates natural groupings, under which the only treatment is the urbanisation. We will take *Liangang* as the control group and *Jincheng* as the treatment group.

Suzhou, lying in the Yangtze River Delta, is about 100 kilometres away from Shanghai (the location of Suzhou in China can be seen in Figure 1 in the Appendix). The location where the natural experiment happened is in the northern part of Suzhou City, called Xiangcheng District. The original locations of *Liangang* and *Jincheng* from 1963 to 2004, as well as the new location of *Jincheng* after the removal, are demonstrated by Figure 2:

Figure 2: The locations of *Liangang* and *Jincheng* (old and new)



***Notes**:* The blue triangle represents the location of *Jincheng* in 2004. The blue circle represents the location of *Liangang* in 2004. The red triangle represents the location of *Jincheng* after 2004.

From the above, the blue dot in Figure 2 is the location where *Liangang* was in 2004, and the blue triangle is the location where *Jincheng* was in 2004, adjacent to it. In 2004, the local government embarked on a relocation project. Villagers residing in *Jincheng* were forced to move into the resettlement housing estate located in the centre of Xiangcheng District. The red triangle in Figure 2 is the location where *Jincheng* is after the removal. The houses they used to live in are rural ones, while the resettlement consists of apartments. Also, the physical form and characteristics of the traditional village where the *Jincheng* people used to live have been changed totally.

From Figure 2 above, we can see that *Jincheng* was relocated to the urbanized areas of Xiangcheng District, Suzhou City, and *Liangang* remains in the original place. Today, *Jincheng* is about 10 kilometres away from *Liangang*. Close as they are geographically, however, the physical form and social structure of these two are totally different.

The area where *Jincheng* now locates has been urbanized, with apartment blocks, supermarkets, office buildings, etc. The area where *Liangang* locates is still the traditional Chinese village, with separate farmers' houses scattered around the village. People living in *Jincheng* are governed by a property management company, while the *Liangang* is still under the traditional governing structure of a so-called village committee (*Cunmin Weiyuanhui* in Chinese). The main difference of the governing structure is that the *Cunmin Weiyuanhui* is composed of villagers who enjoy high reputation. They usually have a broad network and are respected by other villagers (Yan, 2003).

Liangang, as a traditional Chinese village, remains a face-to-face society, while *Jincheng* has been mingling with other neighbouring communities to the degree that lots of outsiders from other places of Suzhou, and even all over the country, interact, communicate and live their lives together with the original inhabitants of *Jincheng*.

We possess qualitative evidence to confirm that the relocation of *Jincheng* was actuated for the purpose of increasing the construction land quotas and can be recognized as an exogenous random outcome. We conducted interviews with the officers responsible for this project, including the Director of Housing and Constructing Bureau of Xiangcheng District, the

retired mayor of Taiping Town where both *Jincheng* and *Liangang* belong and the villager-heads of *Liangang* and *Jincheng*. We asked them about whether the decision of removing *Jincheng* while leaving *Liangang* was based on some special consideration; they arrived at the consensus that in 2004, the original location and socio-economic characteristics of *Liangang* and *Jincheng* were not largely different, and the decision of removing *Jincheng*, not *Liangang*, was random (See Appendix). We can therefore run the trust game to measure the trust level in these two places to see the impacts of urbanisation.

In our experiment, we recruited participants (n=120) from *Liangang* (n=60) and *Jincheng* (n=60). From each pool we randomly chose 30 as senders, and we collected data about their personal characteristics, including years of education, age, gender, monthly income (in RMB), religion and job status. Of these, the variables of gender, religion and job are dummy variables. We make the gender dummy variable 0 when the participant is male, and as 1 when gender is female. And for religion, the belief is simple in both places, only Buddhism or atheism. We set the dummy variable equal to 1 for Buddhism and 0 for atheism. For the job variable, we set it equal to 1 for those in work and 0 for those not in work. The descriptive statistics are presented in Table 2.

Table 2: Descriptive Statistics of Senders' demographical factors

		N	Minimum	Maximum	Mean	Std. Deviation
Education	*Liangang*	30	9	18	11.40	2.415
	Jincheng	30	5	15	10.63	2.846
Age	*Liangang*	30	23	74	48.37	12.411
	Jincheng	30	18	67	40.70	15.735
Female	*Liangang*	30	0	1	.40	.498
	Jincheng	30	0	1	.57	.504
Income	*Liangang*	30	1200	7800	3180.	1339
	Jincheng	30	2000	12000	4610.	2368
Buddhist	*Liangang*	30	0	1	.50	.509
	Jincheng	30	0	1	.33	.479
Job	*Liangang*	30	0	1	.47	.507
	Jincheng	30	0	1	.50	.509

All the data in Table 2 is self-reported in the post-experiment questionnaires. We conduct two sample t-tests to assess whether these variables of *Liangang* and *Jincheng* are statistically different. The results can be seen in Table 3 in the Appendix.

From the results we can see that the variables, except for monthly income and age, are not statistically distinct between *Jincheng* and *Liangang* at the significance level of 5%[5]. When villagers move from village to city, they will get access to additional sources of income, such as renting and business opportunities. However, the differences in income can be observed and controlled for in the regression equation.

3. Experimental Design and Implementation

3.1 Experimental Design

We conducted the classic trust game consistent with the one introduced by Berg et al. (1995) in both *Liangang* and *Jincheng*. In the trust game, two participants are anonymously paired: a sender and receiver. Our experiments consisted of two rounds of choices for the sender. In the first round, we told the player A that he was paired with one of his co-villagers, while in the second round they were told that their partners were outsiders. The orders of the choices made by the senders in both *Liangang* and *Jincheng* group are held consistent (i.e. in both the two groups, senders first were required to make the sending decision to the co-villagers and then to the outsiders) to eliminate any possible biasness.

The senders were given 10 tokens. The sender was told that he must send some amount of his units to a second anonymous player, and the amount sent may be zero. The sender was also informed that whatever he sent would be tripled by the experimenter. Therefore, when the sender chose an amount, the experimenter would take it, triple it, and give that money to the receiver. The receiver was told to give some amount of the now-tripled money back to the first player, even if that amount is zero. After the game finished, all the participants received real money according to their outcome, with a currency of each token equalling Chinese 5 yuan. Since a typical hourly wage in Suzhou could be 10 to 12 yuan, the monetary incentive was reasonable.

[5] Because our sample sizes are small, we also run non-parametric tests for the differences between these samples. We run Mann-Whitney U Tests. The results are consistent with two-sample t tests. The specific outcome of the non-parametric tests can be seen in Table 4 in the Appendix.

On March 14th, 2018, we recruited 60 people belonging to *Liangang* through the village commission and 30 people who came from other cities of China other than Suzhou in a factory, then we randomly separated the *Liangang* villagers into two groups in separate rooms, with a 3rd room for the 30 outsiders. All the participants were seated separately and not allowed to talk with each other or see others' responses during the experiment. All participants were given an instruction sheet about the game process and were then asked some key questions by the experimenters to make sure they understood the contents.

On March 15th, 2018, we conducted similar procedures in *Jincheng*, except that we recruited participants through the property management company. Since the apartments can be sold on the market, some of the residents in the community where the villagers of *Jincheng* were relocated come from other places. Therefore, we recruited the participants according to a governmental record[6], to make sure the participants we enlisted in *Jincheng* belonged to the original village.

We conducted the *Liangang* experiment in the village committee meeting rooms, and the *Jincheng* experiment at a primary school. The layout of the rooms was similar.

Senders were asked to play the games for two rounds. The rules of the game regarding the return of money to them were explained before they made any decisions, so whether they made their decision in the first or the second round, they were all aware of these details. However, the senders had no information about the receivers' decisions following their 1st round decision before they made their 2nd round decision, meaning their 2nd round decision would not be affected by the outcome of the 1st round. During the first round, they were told that they had been matched with their co-villagers, and in the second turn, they were told that they were coupled with outsiders. The definition of co-villagers and outsiders were clearly transmitted to the participants, with the co-villagers described as people belonging to the same village as the senders, and the outsiders described as being from outside of Suzhou city and not belonging to the original community where the senders lived.

As senders, the participants were asked to send a certain amount to his or her partner. They made this decision by writing the possible number they chose from 0 to 10 on a handout given to them (see the Appendix). They were informed that all the money they chose not to send

[6] The apartments for the rural-urban migrators from *Jincheng* are also sold through market, but the residents from *Jincheng* need not to pay the property management fees, so the property management company keeps the records of the original list of *Jincheng* villagers.

would be kept by themselves. And the amount they sent would be tripled, and given to the receivers.

After all the senders made decisions in both rounds, the experimenters collected the data, and filled out the receivers' handout sheet accordingly, which lasted 30 minutes. Upon that, the receivers' handout sheets were randomly distributed to the receivers waiting in the other two rooms.

For the receivers, we designed another handout for them to make decisions (see the Appendix). The receivers were told that they could choose any amount from 0 to the tripled amount of that sent by their partners as the returning amount, and their partners' sending decision was circled by the experimenters. In the special case that they received 0 from their senders, they would have no choice but to return 0. The full instructions are presented in the Appendix.

3.2 Control Group and Experimental Group

In March 2018, there were around 1800 people and 600 households in *Liangang*. And the original inhabitants of *Jincheng* numbered around 2000. We took the participants from *Liangang* as our control group, for they remain in their original village, with the participants from *Jincheng* as the experimental group. It is rare for those people who were born in Suzhou, a highly developed city, to go out to work in other cities. Due to the scarcity of the village-level statistics, we collected migration data from Xiangcheng District, where *Jincheng* and *Liangang* locate, and calculated the proportion of people who have transferred out of the district. The data were collected from the Suzhou Statistical Yearbooks from 2004 to 2018, which are published online on the Suzhou Statistics Bureau homepage. The data are presented in Table 5:

Table 5: People transferring away from Xiangcheng District, 2004 to 2018

Year	Total Population	Numbers Transferred	Proportion Transferred
2004	339519	652	0.001920
2005	343275	432	0.001258
2006	348032	304	0.000873
2007	355034	290	0.000817
2008	361082	258	0.000715

2009	365185	412	0.001128
2010	369296	451	0.001221
2011	375019	537	0.001432
2012	381552	533	0.001397
2013	387189	692	0.001787
2014	392837	661	0.001683
2015	400158	673	0.001682
2016	405400	634	0.001564
2017	413254	520	0.001258
2018	424471	629	0.001482
Cum		7678	0.020217

Source: (Suzhou Municipal People's Government, 2018, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2003b)

The proportion transferred is defined as the ratio of the number of permanent residents who moved out of Suzhou occupying the total number of permanent residents. According to the statistical data, the numbers transferring away have remained extremely low in Xiangcheng District. Less than 0.2% of people moved out of Xiangcheng District every year. And from the year 2004 to 2018, the cumulative proportion transferring away from Xiangcheng District was around 2%, which is quite a low percentage and will not produce substantial impacts on the validity of the data.

Though we cannot get the actual transferred numbers from *Liangang* and *Jincheng*, for the village-level migration data in China is usually not officially recorded, we have interview evidence on a useful proxy variable, the *hukou* record. The *hukou* system is a Chinese household registration system, associated with many public services such as medical services and education entry permissions, rather than a complete population registration system (Chan and Zhang, 1999; Cheng and Selden, 1994). Conventionally, when Chinese people move away from their original location, they will change their *hukou* from the original registered address. And according to the policy of the Suzhou municipal government, since 2003, *hukou* transfers are allowed within Suzhou city. Therefore, we believe the number of *hukou* transfers is a reasonable proxy variable for the number of transferred people. According to our interview with the deputy chief director of the police station responsible for the *hukou* registration for *Liangang* and *Jincheng*, who reviewed the records of *hukou* transfers, he is convinced that the *hukou* transfers in *Liangang* and *Jincheng* during the years 2004 to 2017 were kept to an extremely low proportion, less than 0.1% of people per year, which was even lower than the average level across Xiangcheng District.

The problem may be proposed that there may be some people who change their residency, but do not change their *hukou* registration address, for they cannot get the *hukou* of other cities. Such kind of circumstance may be possible theoretically, but we do not believe there will be a huge number, for Suzhou is one of most developed cities across China, with the gross GDP ranking in the top 5 since 2000, and the per capita GDP even higher than Shanghai's (Suzhou Municipal Statistics Bureau, 2018), and it is very rare for Suzhou original residents to move out from Suzhou. As a result, we argue that the attrition of data due to out-migration was negligible (see the interview records in the Appendix).

4. Hypotheses

Different scholars have offered different explanations for the origin of trust. Some scholars argued that the formation of trust may originate from kinship (Durkheim, 1964) or cultural heritage (Dore, 2013). From the perspective of economics, economists have recognized trust as the outcome of repeated games (Kreps et al., 1982).

Though trust is a complex social and psychological phenomenon, scholars have reached a consensus that the building of trust requires frequent interpersonal communication that makes repeated games possible. Face-to-face society usually enjoys high-level trust among its members because repeated interpersonal communication in such kind of society is very frequent.

As a traditional agricultural country, the trust level in China is thought to be very high within a community and comparatively low outside of it. Fei et al., (1992) pointed out that trust structure in China is like the ripples caused by a stone falling in a lake. This metaphor illustrates the key characteristic of the trust structure among traditional Chinese people, that Chinese people usually gave high trust to their kin and family members, followed by lower trust towards their acquaintances, and quite a low level of trust towards strangers. The trust weakens like the ripples moving from the centre to the outskirts, meaning that Chinese people consider people on the closeness scale covering relatives, kin, co-villagers and outsiders. Redding (2013) argued that absolute trust among Chinese only existed within the family, and the trust for friends can only be kept at a not-losing-face level. The trust in traditional China is based on *Guanxi. Guanxi* is usually employed to describe the characteristics of Chinese social networks, which are different from the standard networks of Western society. *Guanxi* is based on the exchange of favours of benefits, under the context of which personal relationships are

considered more important than laws and written agreements in realizing political or business targets. *Guanxi* involves repeated interpersonal communication and is established upon common kinship, interest and benefit (Yang, 1994). Traditional Chinese society builds its trust upon *Guanxi*, which is why trust levels within and outside the community are considered as different.

However, rural areas of China are experiencing deep transformation; a lot of villages have disappeared and original villagers have left and come back. He (2000) argued that traditional Chinese community is changing from an acquaintance society to a half-acquainted one. In the traditional face-to-face society, members of the community usually know each other and share common values and living experience. Breaching common values brings severe costs because within the community consensus is quickly reached, and an individual acting out of step with the rest of the village may bring humiliation to not only themselves but also their family.

However, the large scale of urbanisation in China is changing the traditional society. Since 1987, after the reform and opening-up policies were implemented, the ratio of urbanisation increased from 17.9% in 1978 to 58.5% in 2017, around a 1 percentage point increment every year (National Bureau of Statistics, 2017). Nobel laureate Stiglitz attributed Chinese urbanisation, as well as the hi-tech of the US, as the two most profound changes to have happened to human beings in the 20th century (Bloomberg News, 2012). The above-mentioned relationship-based trust model is gradually being broken. The transformation of social structure and economic system has shaken the long-established relationship between blood, geography and business, which has impacted the network of relationships of traditional acquaintances. The development of the market economy has led to an increase in transactions and communications among strangers. The trust structure driven by the market economy is gradually replacing the predominant trust structure in villages. As a result, we propose hypothesis 1:

Hypothesis 1: The participants from the non-urbanized place (*Liangang*, the village remaining in the original location) will send more when paired with co-villagers than the participants from the urbanized place (*Jincheng*, the village moved to the city centre) do.

The essence of urbanisation is to break the traditional face-to-face social structure and to broaden the scale of interpersonal communication and cooperation. Therefore, as discussed

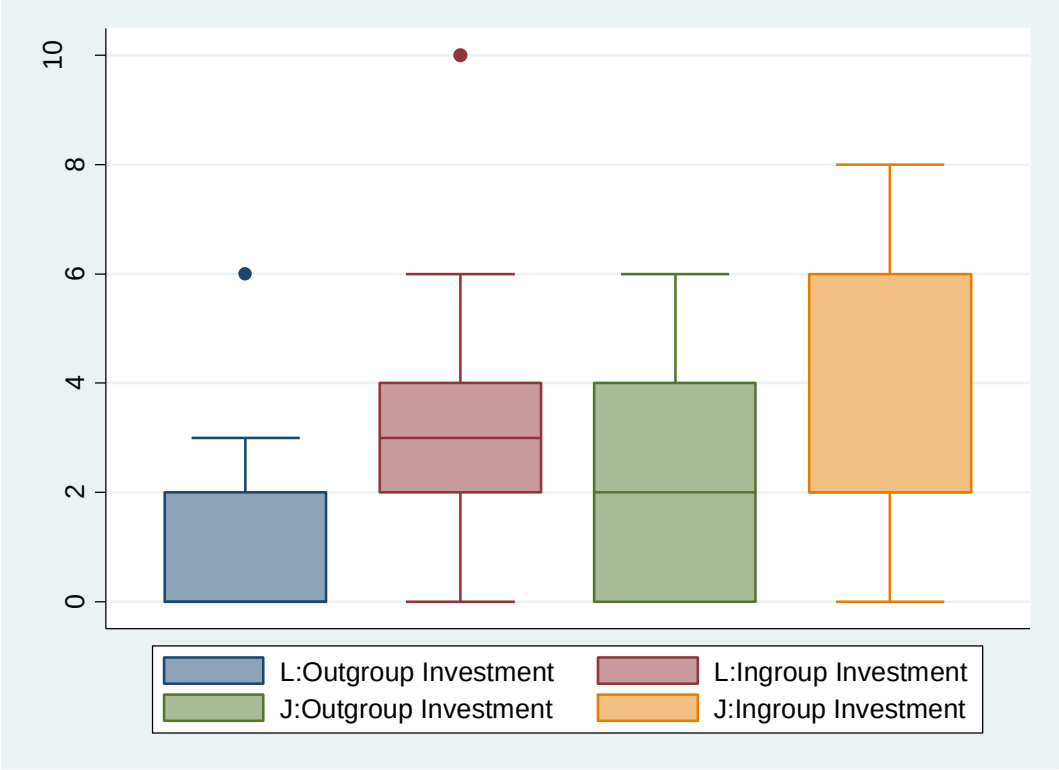
above, frequent interactive communication and cooperation are essential in building trust among people. Accordingly, we propose hypothesis 2:

Hypothesis 2: The participants from the urbanized place (*Jincheng)* will send more when paired with outsiders than the participants from the non-urbanized place (*Liangang)* do.

5. Results

The results of the amounts of the senders from *Liangang* and *Jincheng* to co-villagers and outsiders are presented in Figure 3:

Figure 3: Amounts Sent



Notes: The blue bar represents the amounts from *Liangang* participants sent to outsiders. The pink bar represents the amounts from *Liangang* participants sent to their co-villagers. The green bar represents the amounts from *Jincheng* participants sent to outsiders. The yellow bar represents the amounts from *Jincheng* participants sent to their co-villagers.

From the figure above, we can intuitively see that participants from both *Liangang* and

Jincheng send more to co-villagers than to outsiders. While comparing the sending amounts between groups, the participants from *Jincheng* send more to both co-villagers and outsiders. The mean amount participants from *Liangang* send to co-villagers is 3.10 tokens, and to outsiders 0.87 tokens. The mean amount participants from *Jincheng* send to co-villagers is 3.43 tokens, while to outsiders it is 2.50 tokens. We conduct both two-sample t-tests (see Table 6 in the Appendix) and nonparametric tests (see Table 7 in the Appendix) to see whether these outcomes are statistically distinct. Specifically, we employ the Wilcoxon rank-sign test for observations of *Liangang in-group* investment versus *Liangang out-group* investment and the same for *Jincheng in-group* investment versus *Jincheng out-group* investment, because they are matched pairs. And for the observations of *Liangang* group versus *Jincheng* group, we employ the Mann-Whitney test, because these are not matched pairs.

Both tests show that the levels of *in-group* investment (the amounts sent to co-villagers) are not statistically different between *Liangang* and *Jincheng* at the significance level of 5%, while the *out-group* investment (the amount sent to outsiders) of *Jincheng* is statistically higher than that of *Liangang* at the significance level of 5%.

Since we collected the personal data of the participants, we can run OLS regression to test for the differences in trust between *Liangang* and *Jincheng*, the main hypotheses of this research. We include the necessary control variables, education levels, age, age squared, gender, monthly income (RMB), religion and job status (whether they are at work or with no job). Firstly, we run a pooled regression with the amount sent to co-villagers as the dependent variable. The results are presented in the 1st column of Table 4:

Table 4: OLS Regressions on In-group and Out-group Trust

VARIABLES	(1) DV: *In-group* Trust	(2) DV: *Out-group* Trust	(3) DV: *In-group* Trust	(4) DV: *Out-group* Trust
Education	-0.125	-0.0494	-0.00692	-0.00188
	(0.144)	(0.101)	(0.150)	(0.0992)
Age	0.346***	0.162*	0.456***	0.206**
	(0.120)	(0.0838)	(0.124)	(0.0820)
Female	0.999*	1.360***	1.617**	1.608***
	(0.591)	(0.414)	(0.605)	(0.400)

Monthly Income	0.000301***	0.000121*		
	(9.47e-05)	(6.63e-05)		
Buddhist	-0.799	-0.294	-0.372	-0.123
	(0.629)	(0.440)	(0.666)	(0.439)
Job	-0.785	0.499	-0.827	0.482
	(0.570)	(0.399)	(0.617)	(0.407)
Age^2/100	-0.429***	-0.220**	-0.551***	-0.269***
	(0.133)	(0.0932)	(0.138)	(0.0912)
Jincheng	-0.559	0.987**	0.259	1.314***
	(0.628)	(0.440)	(0.621)	(0.410)
Constant	-2.129	-1.939	-5.255	-3.191
	(3.236)	(2.266)	(3.342)	(2.206)
Observations	60	60	60	60
R-squared	0.507	0.625	0.409	0.600

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

While accounting for other control variables, we construct a dummy variable, namely *Jincheng*, capturing urbanisation, which we make equal to 0 if the senders come from *Liangang* and 1 if the sender comes from *Jincheng*. And the results show that the *Jincheng* variable is not statistically significant at any conventional level of significance, meaning that the treatment of urbanisation did not produce significant impacts on *in-group* trust across the two groups. Thus, the evidence is lacking for us to accept Hypothesis 1 that the participants from the non-urbanized place (*Liangang*, the village remaining in the original location) will send more when paired with co-villagers than the participants from the urbanized place (*Jincheng*, the village moved to the city centre) do[7].

We also conduct a pooled regression making the *out-group* trust (the amounts sent to outsiders by participants from both *Liangang* and *Jincheng*) the dependent variable. This is also reported in the 2nd column of Table 4.

As the outcome shows, the urbanisation variable is statistically significant at the 5% level. The results are consistent with the t-test and non-parametric test above, showing that, while urbanisation is not significantly correlated with the *in-group* trust, it is positively significantly correlated with *out-group* trust. Thus, Hypothesis 2, that the participants from *Jincheng* will

[7] For the dependent variable is ordered discrete variables, we employ the ordered logit regression as the robustness check, of which the outcome is consistent with the OLS. Details of ordered logit regression can be seen in The Appendix 8.

send more when paired with outsiders than the participants from *Liangang* will do, is confirmed.

As discussed above, we try to identify the channels through which urbanisation impacts on trust, particularly via its effects on income. Previous research has shown income and trust are positively related (see Burks et al. (2003) and Dinesen (2013)). Our findings indicate that income mediates the relationship between urbanisation and trust. We test this conjecture by running a regression excluding the income variable to see whether the coefficients of the urbanisation variable get bigger. Details are presented in Column 3 and Column 4 in Table 4.

From the outcome, we can see in the *in-group* pool, after excluding the income variable, the insignificance of urbanisation did not change. It seems that income is not an important factor in explaining the effects of urbanisation on the level of *in-group* trust. However, in the *out-group* pool, we can see that the coefficients on the urbanisation variable *Jincheng* become bigger after excluding the income variable, and significant at the 1% level, compared with the 5% significance level when the income variable is controlled. It seems that the income variable partly explains the effects of urbanisation on *out-group* trust. However, in our model (2), where we include the income variable, the urbanisation variable is still statistically significant, indicating there are other channels besides income through which urbanisation takes effects on trust.

Additionally, we conduct regressions with observations from the *Liangang* and *Jincheng* groups separately to see whether the variable Outsider, indicating whether their paired partner is co-villager or outsider, takes the same impacts in these two groups. We pool data from *in-group* and *out-group* decisions, and set Trust as the dependent variable. The dummy variable Outsider equals 0 if the receiver is a co-villager and 1 if they are an outsider. In order to showcase the different effects that paired partner membership may produce on the control group and the experimental group, we ran the OLS regressions separately for each group. The outcome of the regressions is presented in Table 5.

Table 5: OLS Regressions on Trust of Jincheng and Liangang Groups

VARIABLES	(1) Dependent Variable: *Jincheng* Group	(2) Dependent Variable: *Liangang* Group	(3) Dependent Variable: Pooled

	Trust	Trust	Trust
Education	-0.00556	-0.219**	-0.0874
	(0.185)	(0.107)	(0.0880)
Age	0.394***	-0.00313	0.254***
	(0.111)	(0.132)	(0.0733)
Female	1.654***	0.501	1.180***
	(0.492)	(0.574)	(0.362)
Monthly Income	0.000193***	0.000494**	0.000211***
	(6.48e-05)	(0.000231)	(5.80e-05)
Buddhist	-1.390**	0.145	-0.547
	(0.641)	(0.524)	(0.385)
Job	-0.694	0.0471	-0.143
	(0.516)	(0.485)	(0.349)
Age^2/100	-0.467***	-0.0695	-0.324***
	(0.143)	(0.135)	(0.0816)
Outsider	-0.933**	-2.233***	-2.233***
	(0.374)	(0.414)	(0.415)
Jincheng			-0.436
			(0.484)
Outsider* Jincheng			1.300**
			(0.586)
Constant	-4.830**	5.608	-0.918
	(2.368)	(3.421)	(1.993)
Observations	60	60	120
R-squared	0.692	0.537	0.574

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We see that both Outsider and Monthly Income are statistically significant at the 5% significance level. In referring to the income variable, our findings are consistent with the previous studies. We see that in the *Jincheng* group, the partial effect of being paired with the outsider is -0.933, which is statistically significant at the 5% level, while in the *Jincheng* group, the coefficient on the outsider variable is -2.223, and is statistically significant at the 1% level. We see that the coefficients on the outsider variable are different, and to assess whether this difference is statistically significant, we employ the Chow Test (Chow, 1960); this shows whether membership (co-villager or outsider) carries indistinguishable effects in the regression of the two groups, *Liangang* and *Jincheng*, and therefore whether the outsider variable produced a stronger effect on the investment amount in *Liangang* than *Jincheng*. We

include an interaction variable Outsider_x_Jincheng to run the regression; the results are presented in the 3rd column of Table 5.

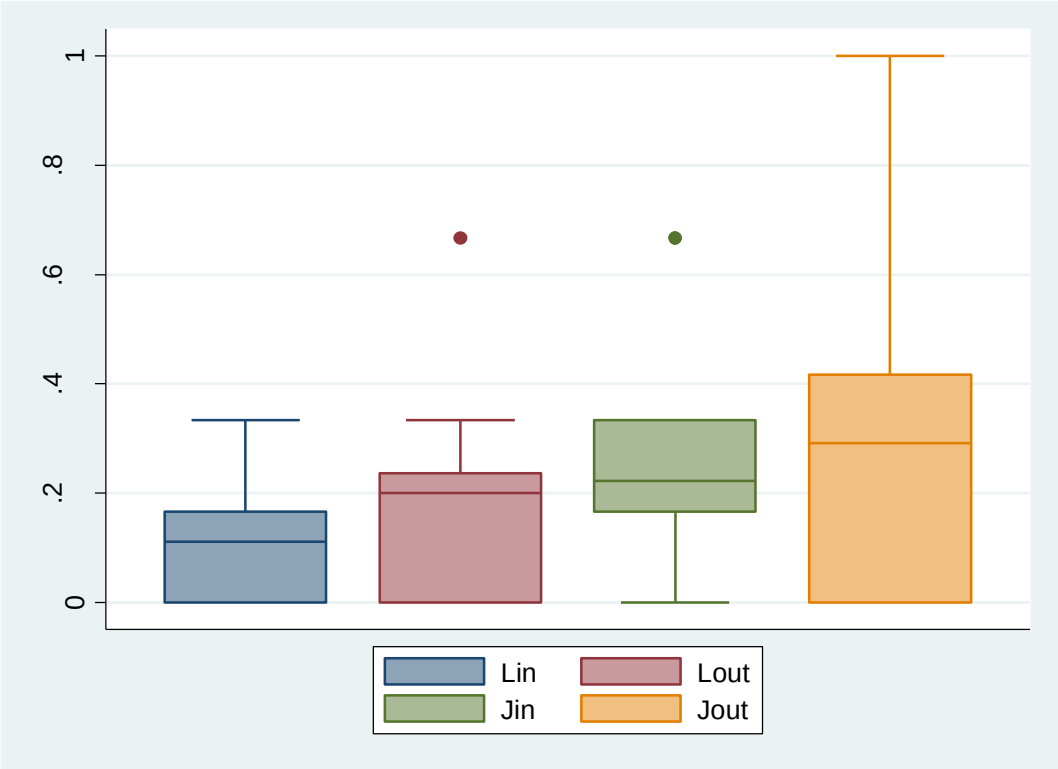
From the results of the Chow Test, we can see that the interactive variable is statistically significant at the 0.05 significance level, meaning that the effects from the outsider variable are different across the two groups. These results indicate that after the urbanisation, the outsider variable takes different impacts in the sending decision of the participants – it produces more negative impacts on the amount sent by *Liangang* participants, compared with that of *Jincheng* participants.

5.1 Trustworthiness

Finally, we turn to the return decision. In section 4, we did not provide any prediction concerning the return decision. In experimental economics, the return amount is employed to measure the trustworthiness, referring to the degree to which the partner can be trusted. The largest difference between the decisions of returning and sending is that the returning decision is conditional. The amount to return is affected by how much the senders gave to their partners. It is worth noting, however, that the measure of trustworthiness is not the main focus of this research. We will still conduct a comparative analysis of this, because, as some scholars have noted, a sender may make a rational decision according to his/her expectation of the amount his/her partner may return (Karaja, 2017b). It is natural that senders in the trust game will consider the possible return from the receivers when making decisions. The senders may think that the co-villagers may return more than the outsiders, and as a result they may send more when paired with co-villagers. Besides, the measured trustworthiness may also help explain different levels of trust between the *in-group* of *Liangang* and *in-group* of *Jincheng*. Those senders living in the traditional society (*Liangang*) may expect the connection within-group to be closer than those who migrate into urban areas (*Jincheng*), so the senders from *Liangang* may send more to co-villagers than senders from *Jincheng*.

As the return decision is conditional on the amount sent, if the amount sent is 0, the receivers have no choice but to return 0 too. As a result, we exclude the (0,0) outcome, and calculate the return ratio of other participants. The outcome is shown in Figure 6.

Figure 6: Boxplot of Return Decisions



Notes: The Lin represents the return ratio from the receivers from *Liangang* to their co-villagers. The Lout represents the return ratio from the outsider receivers to the senders from *Liangang*. Jin represents the return ratio from the receivers from *Jincheng* to their co-villagers. Jout represents the return ratio from the outsider receivers to the senders from *Jincheng*.

The results show that for those paired with participants from *Liangang*, the outsiders return more than co-villagers. And for those paired with *Jincheng*, the outsiders return more than the co-villagers of *Jincheng*. In addition, the return proportion of both co-villagers and outsiders paired with *Jincheng* is higher than its counterpart. In referring to the small sample size, we conduct non-parametric tests to see whether these outcomes are statistically different. The outcomes are presented in Table 10 in the Appendix. The results show only the return percentage from *Jincheng* to their co-villagers is statistically higher than the one from receivers of *Liangang* to their co-villagers at the significance level of 1%. And there is still no statistically significant difference in returning percentage between outsiders and co-villagers to both *Liangang* and *Jincheng* senders.

Therefore, *in-group* trust in the rural area is not more strongly reciprocated than in the more urbanised place – in fact, the opposite is the case. As a result, for the rural people, it may have been rational that they did not give particularly high trust to their co-villagers if they expected it not to be particularly rewarded. This decision could be based on the statistical information,

for they expect trust to be no more successful in the rural environment than the urban. In referring to the fact that senders from both *Liangang* and *Jincheng* received no more from co-villagers than outsiders, it seems that it is not rational for the senders to invest more to co-villagers compared with outsiders. As a result, the discrimination towards outsiders may be based either on tastes or inaccurate beliefs about receivers' trustworthiness, for the amounts sent are not positively correlated with actual trustworthiness.

6. Conclusions and Discussions

Scant focus has been put on the relationship between urbanisation and trust. One major reason may be that because urbanisation is a very complex and comprehensive process, plenty of unobservable factors of individuals will be changed by it. It is very difficult to propose a convincing identification strategy. Zhang and Ke (2003) found that in China, the urbanisation ratio is positively correlated with trust level. The outcome displayed in their research, however, is only an association, and it is highly likely that those with high trust level may choose to enter highly urbanized areas that provide more chances for them to develop their career. Consequently, in a standard econometrics' analysis, it is very difficult to avoid the possible reverse causal relationship.

By employing a natural experiment, this research identifies the dynamics that while urbanisation improves the trust level to outsiders, it does not decrease the trust within the community. We found that after urbanisation, people trust outsiders more than do those who remain in the original rural areas, while the trust level among co-villagers did not change statistically significantly. However, by which channels urbanisation changes the trust structure needs further discussions.

We propose there are at least two channels by which urbanisation produces impacts on trust. Firstly, the urbanisation, moving people from rural areas to urban ones, increases their income. As the descriptive statistics of the participants of our trust game shows, the income of *Jincheng* is statistically significantly higher than that of *Liangang*. The results in Table 4 have shown that the income variable may provide some power in explaining why urbanisation improves the trust level towards strangers.

We propose another mechanism via which the urbanisation improves the *out-group* trust may be that interactions among strangers become much more frequent than in the traditional society of China. As we discussed above, trust can originate from playing repeated games or

from the inclination of human nature. In traditional society, people trust because they expect it to be reciprocated; as a result, trust levels are based on the expected trustworthiness. So, it will be very important to have knowledge of the trustworthiness of your contract partners. In traditional Chinese village society, contracts and communication with outsiders are extremely limited; most social functions are implemented within the acquainted circle. For example, villagers choose to borrow money from kin and relatives, rather than from modern financial institutions. Our trustworthiness results indicate that the outsiders return higher proportions than the co-villagers. The residents of *Jincheng* may have more chances to communicate and interact with outsiders and gain sufficient knowledge of their trustworthiness. That may be why the residents in *Jincheng* have higher trust level towards outsiders.

In referring to the mechanisms of urbanisation on trust, there are several conjectures that need to be clarified:

Firstly, we define urbanisation as a process of rural-urban migration. The effects we find in this paper may also have been induced by the pure act of migration. If a group of people migrated into a region where the residents have a higher trust level, the trust of the migrators may increase. However, urbanisation in China, as a process of rural-urban migration, involved breaking the traditional social structure (Chen and Song, 2014; He, 2007; Henderson, 2009; Xu et al., 2011). In a pure migration, in which villagers moved from one rural area to another, then the traditional structure would not be broken, and the social functions would still be completed within the community. The *out-group* contacts would still be very limited, so it is difficult to understand why we would then observe an increase in, specifically, *out-group* but not *in-group* trust, which we do in this study.

Secondly, after their removal, the local government gave high compensation to the original residents of *Jincheng* for their homesteads. It is possible that this windfall effect made the participants of *Jincheng* happier, and therefore they became more generous. However, this conjecture contradicts with the fact that *in-group* trust is not changed by the treatment. If happiness produces positive effects on trust, both the *in-group* and *out-group* trust should be impacted.

Future studies may conduct experiments and surveys based on larger populations and samples. Suzhou is a specific city with high-level economic development (with per capital GDP amounting to 24 thousand dollars in 2017, ranking

1st in the Yangtze River Delta Zone (Suzhou Municipal Statistics Bureau, 2018)). However, the world is complex, cities and places differ from one another remarkably in their economic and social environments. Conducting research in different cities, both within China and in different countries, will significantly broaden the findings of this research.

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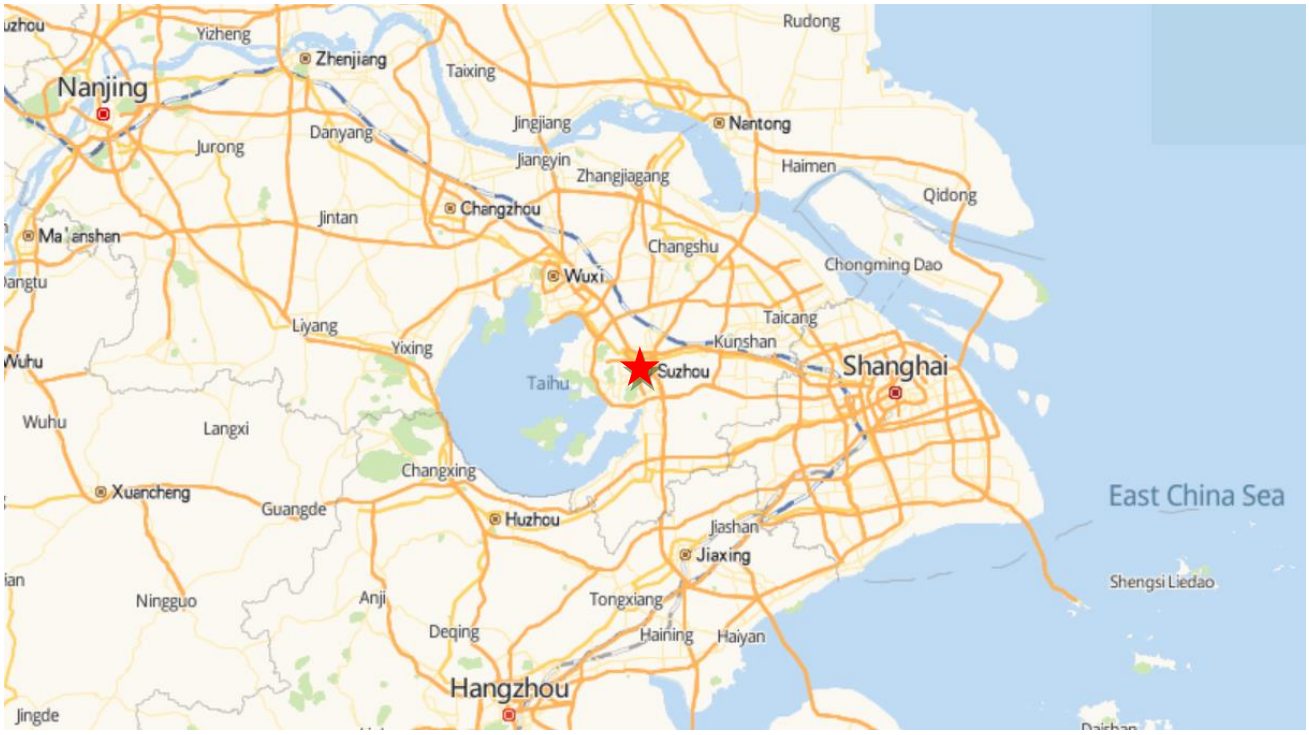
Appendix:

Figure 1: The Location of Suzhou City in China



Notes: The figure is a screenshot from Auto Navi Map. The red star indicates the location of Suzhou city.

Table 3: Two-sample t-test for the demographical factors of senders of *Liangang* and *Jincheng*

		Mean	S.D.	S.D. Mean	95% Confidence Lower	95% Confidence Upper	t	df	Sig. (2-tailed)
Pair 1	*Liangang*：Education - *Jincheng*：Education	.767	4.108	.750	-.767	2.301	1.022	29	.315
Pair 2	*Liangang*：Age – *Jincheng*：Age	7.667	19.468	3.554	.397	14.936	2.157	29	.039
Pair 3	*Liangang*: Gender – *Jincheng*: Gender	-.167	.648	.118	-.409	.075	-1.409	29	.169
Pair 4	*Liangang*：Income – *Jincheng*: Income	-1430.000	2397.865	437.788	-2325.378	-534.622	-3.266	29	.003
Pair 5	*Liangang*：Religion - *Jincheng*：Religion	.167	.699	.128	-.094	.428	1.306	29	.202
Pair 6	*Liangang*：Job - *Jincheng*：Job	-.033	.809	.148	-.335	.269	-.226	29	.823

Table 4: Wilcoxon Signed Rank Test for the Demographical factors of Senders

	Education	Age	Gender	Monthly Income	Religion	Job
Mann-Whitney U	434.000	331.000	375.000	276.500	375.000	435.000
Wilcoxon W	899.000	796.000	840.000	741.500	840.000	900.000
Z	-.257	-1.761	-1.281	-2.579	-1.298	-.256
Asymp. Sig. (2-tailed)	.797	.078	.200	.010	.194	.798

Table 6: Two Samples Test for the Results of Investment amounts

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	*Liangang*：*Out-group* Investment - *Jincheng*：*Out-group* Investment	-1.633	2.593	.473	-2.602	-.665	-3.450	29	.002
Pair 2	*Liangang*：*In-group* Investment - *Jincheng*：*In-group* Investment	-.333	3.336	.609	-1.579	.912	-.547	29	.588
Pair 3	*Liangang*：*Out-group* Investment - *Liangang*：*In-group* Investment	-2.233	1.382	.252	-2.749	-1.717	-8.853	29	.000
Pair 4	*Jincheng*：*Out-group* Investment - *Jincheng*：*In-group* Investment	-.933	1.856	.339	-1.626	-.240	-2.755	29	.010

Table 7: Wilcoxon Signed Rank Test for the paired samples of the sending amount

	L: *In-group*- L: *Out-group*	J: *In-group*- J: *Out-group*
Z	-4.356[b]	-2.559[b]
Asymp. Sig. (2-tailed)	.000	.010

Table 8: Mann-Whitney U Test for the Independent Samples of the sending amount

	L: *In-group*- J: *In-group*	L: *Out-group*- J: *Out-group*
Mann-Whitney U	438.000	246.500
Wilcoxon W	903.000	711.500
Z	-.181	-3.207
Asymp. Sig. (2-tailed)	.856	.001

a. Grouping Variable: Jincheng

Table 9: The effects of urbanisation variable (*Jincheng* variable) on the in-group investment and out-group investment by an O Ordered Logit Regression

VARIABLES	(1) Dependent Variable: *in-group* investment	(2) Dependent Variable: *out-group* investment
Education	-0.119	-0.145
	(0.158)	(0.197)
Age	0.400***	0.638***
	(0.143)	(0.201)
Female	0.932	2.163***
	(0.606)	(0.788)
Monthlyincome	0.000306***	0.000130
	(0.000102)	(9.25e-05)
Buddhist	-0.794	-1.059
	(0.646)	(0.796)
Job	-0.807	0.452
	(0.570)	(0.652)
Age^2/100	-0.493***	-0.843***
	(0.168)	(0.249)
Jincheng	-0.481	2.310***
	(0.640)	(0.795)
Constant cut1	4.051	10.77**
	(3.390)	(4.208)
Constant cut2	4.192	11.20***
	(3.387)	(4.228)
Constant cut3	6.399*	12.78***
	(3.470)	(4.319)
Constant cut4	7.010**	13.76***
	(3.509)	(4.412)
Constant cut5	7.773**	15.85***
	(3.550)	(4.612)
Constant cut6	8.188**	17.12***
	(3.570)	(4.653)
Constant cut7	9.703***	
	(3.629)	
Constant cut8	10.43***	
	(3.649)	
Constant cut9	12.46***	
	(3.756)	
Observations	60	60

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Mann-Whitney U Test for Independent Samples

		Sig.
Pair 1	Lout - Lco	0.221
Pair 2	LCo& JCo	0.009
Pair 3	LOut & JOut	0.036
Pari 4	JOut - JCo	0.799

Notes: Lout represents the return percentage from outsiders back to the senders from Liangang village. Lco represents the return percentage from co-villagers back to the senders from Liangang village. Jout represents the return percentage from outsiders back to the senders from Jincheng village. Jco represents the return percentage from co-villagers back to the senders from Liangang village.

Interview Records

Chinese Version

采访主题： 关于 20004 年金澄村（23 生产大队）拆迁决策的访谈

采访时间： 2017 年 3 月 20 日

采访对象： 原苏州市相城区住房与建设局局长、 前太平镇党委书记、太平街道派出所副所长、原金澄村村委会主任、原莲港村村委会主任、5 位金澄村原村民、4 位莲港村村民。

采访问题：
1. 感谢各位接受我们的采访。2004 年，苏州市启动了对金澄村，也就是 23 大队的拆迁。但是启动拆迁的原因是什么呢？
相城区住房与建设局局长： 苏州的建设用地指标一直很紧，长期在上级政府规定的上限附近徘徊。但是我们经济发展非常迅速，每年都需要大量的指标。因此我们考虑通过拆迁，将宅基地的居民进行集中安置，这样我们能节省出建设用地指标。 当时启动 23 大队拆迁工程的主要目的也是为了获得建设用地指标。

2. 当时金澄村和莲港村也就是 4 大队相临近，为什么政府选择金澄村而不是莲港村呢？
前太平镇党委书记：当时太平街道还叫太平镇，我们当时的任务是获得建设用地指标。其实无论拆 23 大队和 4 大队， 从我们的工作上说，没有区别。因为这两个大队，人数、户数指标都十分类似，因为 60 年代，本来就是平均分配的生产大队嘛。 所以根据我了解的情况，当时街道就是随机选择了金澄村，然后报上级部门批准。
相城区住房与建设局局长：我了解到的情况也大致如此。我们并没有特定的要求，具体的选择是由街道进行决策的。

3. 中国的村级统计数据比较稀缺，那么 2004 年， 我们对这两个村庄的村情有一些基本的统计吗？
前太平镇党委书记：这个派出所所长可以回答，他们还是有一些基本的情况统计的。
太平街道派出所副所长：因为 2004 年我们决定拆迁的时候，对一些村的情况还是进行过基本排摸的。但是这些资料都是比较大致的，不过因为我们长期生活在这里，所以我们是比较肯定的是，这两个村是没有什么大的差别的。
原金澄村村委会主任：对， 因为实际上我们本身并不是那种传统的村庄，我们两个村

在 60 年代，本来就是政府重新分配的，作为生产大队成立的。
原莲港村村委会主任：当时整个太平街道就是 26 个生产大队，。60 年代政府把所有的原有的村庄，按每家每户这样重新记录下来，然后随机平均分配到 26 个生产大队里面去。
金澄村原村民甲：本来我们这二十多个大队，都是生产大队，所以人数啊、户数啊都是差不多的。

4. 那么其他因素呢？比如收入水平、教育水平呢？
莲港村村民甲： 说到收入，因为当时我们两个大队基本上所有成员都是从事农业生产工作。我们苏南地区人多地少，基本上都算是小农经营。所以收入不存在大的差别。
莲港村村民乙：是的， 至于说到教育水平，应该说我们两个生产大队普遍都接受了九年制义务教育，这是国家规定嘛。年轻人完成 9 年义务教育之后，普遍会读高中或者技术学校。但是大学生两个村都是很少的。所以整体来说，教育水平也不存在大的差异。
金澄村村民丙：其实应该说我们太平街道这些生产大队，各方面情况都差不多，不存在太大的差异。

5.还有一个问题，就是关于 2004 年拆迁到今年，2017 年，莲港村和搬迁到城市里的金澄村，他们两地搬迁出去的人人口多吗？
原莲港村村委会主任：据我们的了解，一直以来，我们村基本上没有什么人搬迁出去，因为苏州房价太贵了，对我们来说，我们没法负担。可能有几位大学生，考上大学之后就在外地生活了，但人数是非常少的，据我所知，不超过 20 个吧。
原金澄村村委会主任：我们情况也类似，虽然搬迁到城市之后大家的联系比以前少了，但是像搬迁这种大事情，我们还是了解的。比较少。
太平街道派出所副所长：我们派出所这边掌握的是户口转移的记录。一般如果有人搬走的话，他会把户口迁出去。当然也有可能他实际搬走了，但户口没有签走，但这种情况很少见。从户口搬迁记录上看，这两个村子搬迁的记录还是相当少的，应该是不超过 1%的。

English Version

Interview Theme: An Interview on the Removal (*Chaiqian*) Decision of *Jincheng* Village (23 Production Brigade) in 2004
Interview Time: March 20th, 2018
Interviewees: Director-General of Housing and Construction Bureau of Xiangcheng District, Suzhou, former Secretary of Party Committee of Taiping Town, Deputy Director of Taiping Street Police Station, former Director of *Jincheng* Village Committee and former Director of *Liangang* Village Committee. Five original villagers of *Jincheng* village and four villagers of

Liangang village.

Interview questions:

1. Thank you for accepting our interview. In 2004, Suzhou launched the removal of *Jincheng* Village or number 23 brigade. But what is the reason for the removal?

Director of Housing and Construction Bureau of Xiangcheng District: The quotas of construction land in Suzhou has been very limited. It has been near the upper limit set by the higher government for a long time. But our economy is developing very fast, and we need a lot of quotas every year. Therefore, we consider relocating the residents of the homesteads centrally through removal, so that we can save the quotas of construction land. At that time, the main purpose of the 23 brigade's removal project was also to obtain construction land quotas.

2. At that time, *Jincheng* Village and *Liangang* Village were close to each other. Why did the government choose *Jincheng* Village instead of *Liangang* Village?

Former Secretary of the Party Committee of Taiping Town: At that time, Taiping Street was also called Taiping Town. Our task at that time was to obtain the quotas of construction land. In fact, regardless of the removal of 23 brigade (*Jincheng*) and 4 brigade (*Liangang*), there is no difference in our work. Because these two brigades, the number of people and the number of households are very similar. In the 1960s, they were similar production brigades. At that time, we, the Taiping town government randomly selected *Jincheng* Village and then submitted our decision to the higher authorities for approval.

Director of Housing and Construction Bureau of Xiangcheng District: I know about this situation. We don't have specific requirements. The final choice of removing *Jincheng* was made by the Party Committee of Taiping Town, we (the Housing and Construction Bureau of Xiangcheng District) approved.

3. Statistical data at the village level are scarce in China. So, in 2004, do we have some basic statistics about these two villages?

Former Party Secretary of Taiping Town: The director of this police station can answer that. They do have some basic statistics.

Deputy Director of Taiping Street Police Station: When we decided to relocate villages in 2004, we conduct a basic survey of the situation of some villages. Certainly, these data are relatively rough. But as we have lived here for a long time, we are quite sure that there is no big difference between the two villages.

Former Director of *Jincheng* Village Committee: Yes, because in fact, we are not the traditional villages. Our two villages were redistributed by the government in the 1960s and were established as production brigades.

Former Director of *Liangang* Village Committee: At that time, there are 26 production brigades in the whole Taiping Town. In the 1960s, the government collected all the information on the original households of Taiping Town, and then randomly divided these households into 26 production brigades equally .

Villager A of *Jincheng*: Originally, all these 26 villages are production brigades, so the number of people and households are almost the same.

4. What about other factors? What about income level and education level?

Villager A of *Liangang*: In referring to the income, at that time, almost all the members of our two brigades were engaged in agricultural production. We have more people and less land in southern Jiangsu, where most of our villagers work in small-scale farms. So, there is no big difference in income.

Villager B of *Liangang*: Yes, as for the education, it should be said that villagers of both of our production brigades generally receive nine-year compulsory education, which is a state regulation. After nine years of compulsory education, young people generally attend high schools or technical schools. But there are a few college students in both villages. So, there is no big difference in the level of education.

Original villager C of *Jincheng*: In fact, it should be said that our Taiping Town production brigades are similar in all aspects, there is no big difference.

5. There is another problem. From 2004 to 2017, in *Liangang* Village and *Jincheng* community, do they have people moving out of the two places?

Former Director of the *Liangang* Village Committee: According to our information, basically very few in our villages have moved out because the house price in Suzhou is too expensive. For us, we can't afford it. There may be several college students who moved out after they went to college, but the number is very small. As far as I know, there are no more than 20.

Former Director of the *Jincheng* Village Committee: Our situation is similar. Although we have comparatively less contact with the people after moving to the city, we still know the big things like relocation. Very few have moved out.

Deputy Director of Taiping Street Police Station: Our police station has a record of *hukou* transferred. Generally, if someone moves, he will change the *hukou* address. Of course, it is also possible that he moved away, but the *hukou* has not been changed, but this situation is rare. From the *hukou* records, the relocation of these two villages are still quite small and should be no more than 1%.

Sample instructions

Chinese Version

一 对发送者的说明

欢迎你前来参加我们的决策实验。这项实验非常简单， 你将因为参加试验获得 10 元人民币。如果你严格遵守实验的规定，你将有可能获得更多的钱。实验人员会收集你的决定，通过实验，实验人员将计算你在此期间赚了多少钱。我们会在一周内把你最终获得的金额交付给你。在实验过程中。请注意，你不得与别人交谈或偷看别人的答案，如果你违背这些规定，你将被要求离开，并且你将不会得到报酬。实验共有 90 名受试者参加。我们不会告诉你其他参与者的名字，也不会告诉他们你的名字。30 名被试属于发送者，另外 60 名属于接收者。你属于发送者。

决策场景

你在一开始被授予 10 个单位币，每个单位币等于人民币 5 元。也就是说你在实验一开始拥有人民币 50 元。

你将会被要求做两次选择， 第一次你将会被与来自莲港村的村民的参与者配对；第二次与你配对的是来自其他苏州以外其他城市的参与者；在实验开始钱，你不会知道你与谁配对，实验之后，你也不会知道。在下文中，我们将称此人为你的“搭档”。

你的决定

实验人员会在宣读指令后会给你一份答题纸。 答题纸的顶部是从 0 到 10 的 11 个数字，你被要求在其中圈一个数字。你选择的数字将决定你愿意分给你的搭档的代币的数量。你可以选择任何数字，但你只能选择一个数字。你不发送给你的搭档的代币将会被你自己所保留。

样本答题纸——给发送者

请选择您愿意发送给您的搭档的代币数量，并圈出它。

0 1 2 3 4 5 6 7 8 9 10

你只能圈出一个数字，如果你改变主意，请写下你的新数字，并划掉错误的数字。

把代币发送给你的搭档

在你做出选择后，你发送给你的搭档的代币数量，将被实验者乘以 3，也就是说你的搭档得到的代币数量，是你在答题纸上上圈出的代币数量的 3 倍。例如，如果你选择 2 个代币，你的搭档将收到 6 个代币。如果你选择了 0 个代币，你的搭档将收到 0 个代币。如果你选择 3 个代币，你的搭档将得到 9 个代币。

你搭档的决定

你的搭档将选择返回所有、一部分或完全不返还代币给你们。例如，如果你选择发送你的搭档 2 代币，你的搭档将收到 6 个代币。这意味着他们可以选择返回给你 0, 1, 2、3, 4, 5 或 6 个代币。再举一个例子，如果你选择发送你的搭档 1 个代币，你的搭档将收到 3 个代币。这个意味着他们可以选择返回给你 0, 1, 2 个或 3 个代币。实验者会搜集你们的结果，然后填写表格，随机发送给在另一个屋子的接收者们。你的搭档被要求填写他们将向你返回的代币数量。

你和你搭档的收入

凡是你没有发送给你的搭档的代币，将会被你保存。你的搭档所发还给你的代币也将被归你所有。在实验结束后，每个代币将被转换为 5 元人民币，将在一周后以现金支付给你。

你的总收入=你没有发送给你的伙伴的代币（＝10 个代币-你发送的数量）+你的搭档还给你的数量

你的搭档的总收入（=你发送的代币*3-你的搭档回报给你）

开始游戏

你将会做两次选择，第一次与你配对的是与你来自同一个村庄的参与者。第二次是来自苏州以外城市的外来参与者。我们将依次给您两份答题纸，等您做出第一次决策后，我们将给您下发第二份答题纸，请注意，两份答题纸的内容和游戏规则完全一致，只不过是与你配对的搭档有所区别。在实验结束时，我们将把每个代币转换为 5 元人民币。

二 对接收者的说明

欢迎你前来参加我们的决策实验。这项实验非常简单， 你将因为参加试验获得 10 元人民币。如果你严格遵守实验的规定，你将有可能获得更多的钱。实验人员会收集你的决定，通过实验，实验人员将计算你在此期间赚了多少钱。我们会在一周内把你最终获得的金额交付给你。在实验过程中。请注意，你不得与别人交谈或偷看别人的答案，如果你违背这些规定，你将被要求离开，并且你将不会得到报酬。实验共有 90 名受试者参加。我们不会告诉你其他参与者的名字，也不会告诉他们你的名字。30 名被试属于发送者，另外 60 名属于接收者。你属于接收者，与你配对的搭档是来自莲港村的发送者。

决策场景

在游戏开始，你的代币数量是 0。每个代币等于 5 人民币，这意味着你用 0 个代币开始实验。你将与一位来自莲港村的参与者相匹配。他发送给代币被实验者乘以 3 你的三。然后，你将有机会返回没有，一些，或你的伙伴发送给你的所有代币。你会保留所有你没有返还给你搭档的代币。

你的决策

在你的答题纸上你可以看到你的搭档发送给你的代币数量以及你将会得到的代币数量。他们可以在 0 到 10 之间圈出任何数字。你得到的代币数量则是他们选择的数字乘以 3。你可以选择在 0 和你最终得到的代币数量之间选择任意一个数字返还给你的搭档。请注意 我们已经在顶框旁边圈出了“0”，因为如果你的搭档给你的代币数量是 0，你也只能选择返还 0。

样本答题纸——给接收者

请写下你愿意返还搭档的金额。您只能选择从 0 到接收到的代币数量的整数

（第二列中的数字）。.

你的搭档发送代币的数量	你得到的代币数量	你选择返还的代币数量
0	0	0
1	3	
2	6	
3	9	
4	12	
5	15	
6	18	
7	21	
8	24	
9	27	
10	30	

把代币发送给你的搭档

在你做出选择后，你的返还的代币将别你的拍档拥有，而你本人可以拥有

你和你搭档的收入

凡是你没有返还给你的搭档的代币，将会被你保存。在实验结束后，每个代币将被转换为 5 元人民币，将在一周后以现金支付给你。

你的总收入=你收到的代币-你返还给你的搭档的代币

你的搭档的总收入=你没有发送给你的伙伴的代币（＝10 个代币-你发送的数量）+你返还他的代币的数量

开始游戏

你将会做一次选择，我们会给你一份答题纸，我们已经标好了与你配对的搭档发送给你的代币数量，以及我们将这个数字乘以 3 之后，你获得的代币数量。在实验结束时，我们将把每个代币转换为 5 元人民币。

三 问卷

请通过圈定最准确的答案来填写这个简短的调查。如果有下一行对于一个问题，请输入你的答案。你的答案是机密的，不会向实验者之外的任何人透露。

1）你的性别

a) 男

b) 女

2）你的年龄：_____

3) 你接受的教育年限：_____

4) 你的工作状况：

a)在职

b)非在职

5）你的宗教信仰：

a)无神论

b)共产主义

c)佛教

d)基督教

e)其他

6）你的月收入：_____

English Version

A. Instructions for Senders

Welcome to our decision-making experiment. This experiment is very simple. You will get 10 tokens for participating in the experiment. If you strictly abide by the rules of the experiment, you will probably get more money. The experimenter will collect your decisions, and through the experiment, the experimenter will calculate how much money you made during this period. We will pay you the final amount in a week. In the process of the experiment, please note that you are not allowed to talk to others or peep at their answers. If you break these rules, you will be asked to leave and you will not be paid. A total of 90 subjects are participating in the experiment. We will not tell you the names of other participants, nor will we tell them your names. 30 subjects are senders and another 30 are receivers. You are a sender.

Decision Environment

You were initially awarded 10 tokens currencies, each equal to 5 yuan. You have RMB 50 yuan at the beginning of the experiment.

You will be asked to make two-round choices. For the first time, you will be paired with participants from *Liangang*/ *Jincheng* Village[8]. For the second time, you will be paired with participants from other cities outside Suzhou. At the beginning of the experiment, you will not know whom you are paired with, nor will you know after the experiment. In the following passage, we will call this person your "partner".

Your decision

The experimenter will give you an answer sheet after reading out the instructions. The top of the answer sheet is 11 numbers from 0 to 10, in which you are asked to circle a number. The number you choose will determine the amounts of tokens you are willing to share with your partner. You can choose any number, but you can only choose one number. The tokens you don't send to your partner will be retained by yourself.

Sample of Handout for the Sender

Please choose the amount that you are willing to send to your partner and circle it.

8 The contents for senders from both *Liangang* and Jincheng are generally the same, except in this part, we use the word *Jincheng* replacing *Liangang* if the senders come from *Jincheng*.

0 1 2 3 4 5 6 7 8 9 10

You can only circle one number and if you change your mind, please circle your new number and cross out the wrong one.

Send tokens to your partner

After you make a choice, the number of tokens you send to your partner will be multiplied by the experimenter by 3. The number of tokens your partner receives is 3 times the number of tokens you circle on the answer sheet. For example, if you choose 2 tokens, your partner will receive 6 tokens. If you choose 0 tokens, your partner will receive 0 tokens. If you choose 3 tokens, your partner will get 9tokens.

Your partner's decision.

Your partner will choose to return all, part or no tokens to you. For example, if you choose to send your partner 2 tokens, your partner will receive 6 tokens. This means they can choose to return you 0, 1, 2, 3, 4, 5 or 6 tokens. For another example, if you choose to send your partner a token, your partner will receive three tokens. This means they can choose to return you 0, 1, 2 or 3 tokens. The experimenter will collect your results, fill out the form, and send them randomly to the recipients in another room. Your partner is asked to fill in the number of tokens they will return to you.

Income for you and your partner

Any tokens you don't send to your partner will be saved by you. The tokens your partner sends back to you will also be yours. At the end of the experiment, each token will be converted to RMB 5, which will be paid to you in cash in a week.

Your gross income = the number of tokens you did not send to your partner (= 10 tokens - the amount you sent) +the amount your partner returned to you

Total income of your partner (= tokens you send * 3 - your partner pays you back)

Start the game

You will make two choices. The first time you are paired with a participant from the *Liangang*/ *Jincheng*

village like you. The second one is from outside Suzhou. We will give you two answer sheets in turn. After you make your first decision, we will send you a second answer sheet. Please note that the contents of the two answer sheets are the same as the rules of the game, but they are different from your partner's. At the end of the experiment, we will convert each token into RMB 5.

B. Instructions for Receivers

Welcome to our decision-making experiment. This experiment is very simple. You will get 10 yuan for participating in the experiment. If you strictly abide by the rules of the experiment, you will probably get more money. The experimenter will collect your decisions, and through the experiment, the experimenter will calculate how much money you made during this period. We will pay you the final amount in a week. In the process of the experiment, please note that you are not allowed to talk to others or peep at their answers. If you break these rules, you will be asked to leave and you will not be paid. A total of 90 subjects are participating in the experiment. We will not tell you the names of other participants, nor will we tell them your names. Thirty subjects are senders and another 60 are receivers. You belong are a receiver, and your partner is the sender from *Liangang/Jincheng*[9] Village.

Decision Environment

At the beginning of the game, your will have 0 token. Each token equals 5 RMB, and you start the experiment with 0 tokens. You will be matched by a participant from *Liangang/Jincheng* Village. The amount of the tokens he sent will be multiplied by three by the experimenter, and then given to you. Then, you will have the opportunity to return any proportion of the tokens you received back to your partner. You will keep the tokens that you do not return to your partner.

Your decision

On your answer sheet, you can see the number of tokens your partner sends you and the number of tokens you will receive. They can circle any number between 0 and 10. The number of tokens you get is the number they choose multiplied by three. You can choose between 0 and the number of tokens you eventually get, and choose any number to return to your partner. Please note that we have circled "0" next to the top box, because if your partner gives you 0, you can only return 0.

[9] The contents for receivers from *Liangang*, *Jincheng* and outsiders are generally the same, except we use the word *Jincheng* replacing *Liangang* for the receivers who are paired with senders from *Jincheng*.

Sample of Handout for the Receiver

Please write the amount that you are willing to return your partner. You can only choose the integer from 0 to the amount you received (The number in the 2nd column).

Your partner sends	You will receive	The amount you choose to return
0	0	0
1	3	
2	6	
3	9	
4	12	
5	15	
6	18	
7	21	
8	24	
9	27	
10	30	

Income for you and your partner

Any tokens that you do not return to your partner will be saved by you. At the end of the experiment, each token will be converted to RMB 5, which will be paid to you in cash in a week.

Your gross income = the tokens you receive - the tokens you return to your partner

Total income of your partner = the number of tokens you did not send to your partner (= 10 tokens - the amount you sent) +the number of tokens you returned to your partner

Start the game

You will make a choice. We will give you an answer sheet. We have marked the number of tokens sent to you by your partner and the number of tokens you get when we multiply that number by three. At the end

of the experiment, we will convert each token into RMB 5.

C. Questionnaire

Please complete this brief survey by delineating the most accurate answers. If the next line is for a question, enter your answer. Your answer is confidential and will not be disclosed to anyone other than the experimenter.

1) Your gender:

A) male

B) female

2) Your age: _____

3) The years of education you have received: _____

4) Your working condition:

A) in a job

B) no job

5) Your religious beliefs:

A) Atheism

B) Communism

C) Buddhism

D) Christianity

E) Others

6) Your monthly income: _____