

# Trust, Information Acquisition and Financial Decisions

## A Field Experiment

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*Abstract:* We study the relationship between information acquisition and trust in financial decision making. A field experiment with a variation of the trust game was conducted with the partners of a financial cooperative located in a Mexican rural area. Individuals who frequently visit friends are more trustful, those who visit their families regularly reciprocate less, and active cooperative partners reciprocate more. Individuals show interest in acquiring information on the financial status and participation in social networks of other people with whom they may establish financial transactions. However, information does not appear to affect transfers; trust seems to overshadow information acquisition in financial decision making.

*Keywords:* social networks, information, social preferences, field experiments, trust, reciprocity, financial development.

### ***Confianza, adquisición de información y decisiones financieras: Un experimento de campo***

*Resumen:* Estudiamos la relación entre la adquisición de información y la confianza en la toma de decisiones financieras. Se implementa un experimento de campo

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con los socios de una cooperativa financiera en México. Los individuos que visitan frecuentemente a sus amistades son más confiados, aquellos que visitan regularmente a sus familiares son menos recíprocos, y los socios más activos son más recíprocos. Los individuos mostraron interés en adquirir información sobre la situación financiera y participación en redes sociales de otros individuos con los cuales llevan a cabo transacciones financieras. No obstante, la información no parece afectar las transferencias; la confianza podría reducir el papel de la información.

*Palabras clave:* redes sociales, información, preferencias sociales, experimentos de campo, confianza, reciprocidad, desarrollo financiero.

*JEL classification:* O12, O16, C93, Z13.

## Introduction

In this paper we analyze individuals' willingness to pay to acquire information about another individual before making a financial decision. To achieve this goal we conducted a field experiment using the trust game (Berg, Dickhaut and McCabe, 1995) with the members of a financial cooperative located in rural Mexico.

The motivation for this analysis comes from the role of information acquisition costs in determining the structure of financial markets, along with transaction costs and contract enforcement costs (Levine, 2005). In particular, information acquisition costs are relevant in credit markets because asymmetric information between the borrower and the lender can lead to adverse selection problems, in which the lender is unable to distinguish between types of borrowers, and moral hazard problems, in which there is a probability that the borrower does not pay the money back to the lender. These types of informational problems arise in credit markets of both developed and developing economies, being the latter more adversely affected by those problems. The role of financial markets in the process of economic development has been largely discussed by some authors; see, for example, Ray (1998). In general, the financial systems of developing countries are characterized by high levels of the three types of costs mentioned above. Moreover, there is empirical evidence that their financial institutions are less efficient than those of the developed countries in fulfilling the objectives of the financial system, such as risk diversification, information production, and allocation and supervision of investment resources (Demirguc-Kunt and Levine, 2001).

On the other hand, there is ample evidence in the literature that social networks and trust play a role in reducing problems of asymmetric information, more so in developing countries, by complementing or substitut-

ing formal financial markets and institutions (Townsend, 1994; Foster and Rosenzweig, 1995; Easterly and Levine, 1997; Zak and Knack, 2001; Guiso *et al.*, 2001; Adato *et al.*, 2006; Chantarat and Barret, 2007). The central idea is that social networks develop direct monitoring mechanisms that produce information about the financial behavior of the individuals that belong to such networks. Also, social networks tend to use social sanctions to improve the enforcement of contracts. Hence, social networks might play a role in reducing the informational costs inherent to the financial sector. Furthermore, this literature sustains that the operation of financial institutions is always—regardless of the degree of development—based on trust. Trust and social networks can improve the efficiency of a society by facilitating the coordination of actions (Putnam, 1993). Furthermore, according to Guiso *et al.* (2001) and Ferrary (2003), the existence of social networks and trust translates into greater degrees of development and institutionalization of the financial sector.

However, some articles (Uzzi, 1996; La Porta *et al.*, 1997a, b; Guiso *et al.*, 2001), based on Fukuyama (1995), state that in societies where family networks prevail, the emergence of large companies and impersonal organizations, frequently observed in developed societies, might show delays. They maintain that family businesses reduce transparency in view of external investors or partners, and that the prevalence of this type of networks is one of the reasons behind the existence of a strong, inefficient informal financial sector in developing countries.

In addition, Lussardi and Mitchell (2009) state that the individuals' educational level and the availability of financial information are partially relevant to assure a suitable handling of personal finances. However, these two elements have not been sufficient to explain the high rates of indebtedness and its possible consequences of non-payment, as well as the low levels of financial forecast for retirement. Intertemporal, social, and risk preferences, participation in networks, and cognitive abilities seem to be more relevant (De Meza *et al.*, 2008; Meier and Sprenger, 2010; Barr *et al.*, 2009).

In this paper we analyze the interaction and relationship between financial decisions, information acquisition and trust. In particular, we work with the hypothesis that financial transactions depend not only on economic variables, but also on variables such as the level of trust, reciprocity and association among individuals. Also, individuals' willingness to acquire and process information relevant to perform financial transactions is related not only to their cognitive abilities, but also to the level of trust they have in the individuals with whom they perform those transactions.

The experimental protocol known in the literature as the trust or investment game (Berg, Dickhaut and McCabe, 1995) has been used to measure the degree of trust and reciprocity between the players. This game has been implemented in laboratories as well as in the field. Karlan (2005) conducted a field experiment in Peru in which individuals played the trust or investment game, and found that the strategies of one type of players correlate with some measures of social capital identified as trust. A similar methodology was used by Johansson-Stenman *et al.* (2009).

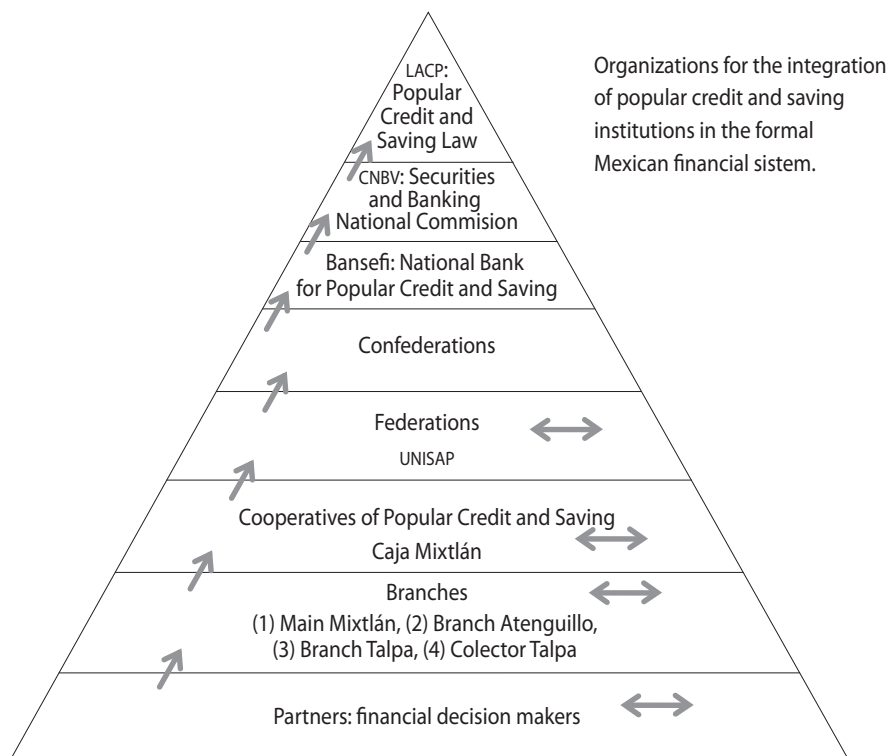
In order to simultaneously study the role of trust and information acquisition behavior when individuals perform financial transactions, we conducted a field experiment using the trust or investment game with two important variations, as well as a survey with the objective of gathering prior information about the potential participants in the field experiment. Our unit of analysis is Caja Mixtlán, a credit and savings cooperative located in the mountains of the state of Jalisco, Mexico. This cooperative has been functioning for over 50 years and serves a rural population in situation of poverty. We expect the information acquisition behavior to be the highlight of our analysis on financial decision making of this population, which is a fairly closed community with supposedly strong ties among family members and cooperative partners. That is, given the characteristics of this community, our hypothesis is that trust is an important component in the process of the individuals' financial decision making, while information acquisition, being an activity that for our experimental subjects is costly and in which they are very likely to be inexperienced, is performed more tentatively and with little sophistication. It is possible that, for those individuals, trust overshadows the role of information acquisition in financial decision making.

The paper is organized as follows: in section I, we present a brief description of our unit of analysis; in section II, we describe our methodology; in section III, we present some of our results; and, in section IV, we offer some concluding remarks.

## **I. Description of the unit of analysis: Caja Mixtlán**

We undertook our study based on Caja Mixtlán, a credit and savings cooperative belonging to the UNISAP Federation located in the Mexican state of Jalisco. We decided to work within the Mexican financial hierarchy, depicted in figure 1, in order to analyze the financial decisions of individuals in a framework that includes the possibility of horizontal and vertical so-

**Figure 1.** Mexican financial system



Source: Authors' own elaboration.

cial networks. We chose the UNISAP Federation because it is one of the federations with greatest financial development and heterogeneity. We specifically selected Caja Mixtlán because it is one of the cooperatives with greatest diversity in terms of the population it serves, and because it has been operating for more than 50 years. Caja Mixtlán is located in a rural area and offers financial services to a population in a situation of poverty.

We use the cluster sampling methodology and select the sampling units taking into account their levels of access to the financial services of Caja Mixtlán. We consider four clusters: Caja Mixtlán's main office (Mixtlán), two branches (Talpa and Atenguillo) and a mobile branch (La Laja). We have to highlight that these four communities are heterogeneous. Talpa is the most developed community because it has the highest level of

commercial activity generated by the Sanctuary of the Virgin of Talpa, and a factory of guava products. La Laja is a very remote community located in the mountains, and does not have any commercial activity.

The Talpa and Atenguillo branches are located approximately 21 and 23 kms. from the main office in Mixtlán, and have some 35 and 197 partners respectively. La Laja mobile branch is a meeting point at a distant town, about 145 km. from Mixtlán, where the partners (approximately 154) perform their financial transactions with Caja Mixtlán through a representative of the institution, who travels to La Laja once a week.

The unit of selection and observation consists of the partners of each of the clusters. We take as our primary unit of analysis the partners who are heads of a household. We define the head of a household as the individual who makes the financial decisions within the household. If the head of the household was absent at the sampling moment, we consider the spouse or the second adult (18 years or older) in charge of the household. From a universe of around 1,066 active partners belonging to Caja Mixtlán, we selected a sample of 418 partners. By cluster, the sample is of approximately 195 partners in Mixtlán, 104 in Talpa, 108 in La Laja, and 11 in Atenguillo.

The clusters are located in rural communities in which most of the partners are engaged in activities related to agriculture, livestock, services and small retail businesses. This population is characterized by high levels of migration to the United States or to nearby cities (Guadalajara or Puerto Vallarta), so there are cases where partners are registered in Caja Mixtlán but do not live in the locality. To ensure the presence of partners in the locality at the moment of sampling, the sample size was reduced to registered partners who live in the locality and that were present at the time of applying the methodology.

## II. Methodology

Our field work started with a survey that was applied to 108 members of Caja Mixtlán from October the 6<sup>th</sup> through October the 10<sup>th</sup>, 2008. The sampling dates were selected to ensure the presence of a higher number of migrants in the locality. Although they are not present in their communities throughout the year, we considered it important to capture information from migrant partners because the level of their financial transactions with Caja Mixtlán is high due to the remittances they send when they are away. Moreover, the reception of remittances is an important source of financial transactions in Caja Mixtlán.

The survey consists of 80 questions divided in two sections. In the first section we collect data on the personal, financial and socio-economic characteristics of the individuals. This section also collects information about their levels of participation in social networks and of trust in other individuals, in Caja Mixtlán and in some governmental institutions; these questions were based on those of the General Social Survey. In the second section we ask each respondent to specify the amounts of money that he would return to a potential sender (Type A individual), conditional on the several possible monetary amounts this individual could send in return. Respondents were notified that their responses could be taken into consideration at the moment of assigning payments to them in case of their being selected for the field experiment a posteriori. Both the survey and the experimental activity were carried on dates of local holidays in which the migrants tend to go back to their communities of origin.

Table 1 shows a distribution of the general characteristics of the population reported in the survey. From the survey results, we can infer that the degree of acquaintanceship and trust are important in financial decision-making. Closed social networks (relatives and friends) prevail in these communities. On the other hand, we observe that there is limited use of a variety of financial services on the part of Caja Mixtlán's partners. Most of the individuals reported that they save in Caja Mixtlán, and only a very low percentage reported having accounts in other formal financial institutions. The percentage of partners that reported saving in informal financial institutions is also very low. Thus, partners are characterized by low levels of financial diversification and sophistication. The answers to the questions associated with membership and participation in activities of Caja Mixtlán show that this institution has a fundamental role in the creation of social networks among the partners and with its authorities. When asked directly, most of the partners reported that they would not participate in another credit and savings cooperative for trust-related reasons. In percentage terms, 18.12 per cent of the surveyed partners save in a bank, 1.18 per cent of them have investment funds, and 13.97 per cent of them participate in informal savings institutions. Finally, almost all partners indicated that they feel Caja Mixtlán has benefited the community.

Once the information collected in the survey had been processed, our second step was to undertake the field experiment from January the 12<sup>th</sup> to January the 16<sup>th</sup>, 2009. The experiment was applied to 69 members of the population initially surveyed.

**Table 1.** Distribution of socio-economic characteristics of the surveyed cooperative members

<i>Features</i>	<i>Surveyed population</i>		<i>Population involved in experiment</i>	
	<i>N</i>	<i>n/N (%)</i>	<i>N</i>	<i>n/N (%)</i>
Total of individuals (N)	108		69	
<i>Locality</i>				
Mixtlán	54	50.0	27	39.1
Atenguillo	19	17.6	16	23.2
Talpa	17	15.7	13	18.8
La Laja	18	15.9	13	18.8
<i>Membership in Caja Mixtlán</i>				
Yes	96	88.9	62	89.9
Not	12	11.1	7	10.1
<i>Employment status</i>				
Employed	73	67.6	51	73.9
Unemployed	35	32.4	18	26.1
<i>Marital status</i>				
Single	20	18.5	12	17.4
Married	71	65.7	45	65.2
Other	17	15.7	12	17.4
<i>Home owner</i>				
Yes	84	77.8	52	75.4
No	24	22.2	17	24.6
<i>Level of education</i>				
Pre-school or without education	7	6.5	2	2.9
Primary	46	42.6	31	44.9
Secondary and Senior High School	41	38.0	25	36.2
Professional	14	13.0	11	15.9



**Table 1.** Distribution of socio-economic characteristics of the surveyed cooperative members (Cont.)

<i>Features</i>	<i>Surveyed population</i>		<i>Population involved in experiment</i>	
	<i>N</i>	<i>n/N (%)</i>	<i>N</i>	<i>n/N (%)</i>
<i>Gender</i>				
Female	72	66.7	50	72.5
Male	36	33.3	19	27.5
<i>Meetings with family members</i>				
Very frequent or frequent	78	72.2	48	69.6
Infrequent or none	30	27.8	21	30.4
<i>Meetings with friends</i>				
Very frequent or frequent	60	55.6	36	52.2
Infrequent or none	48	44.4	33	47.8
<i>Government support</i>				
High or intermediate level	29	26.9	14	20.3
Little or none	79	74.1	55	79.7
<i>Bank account</i>				
Yes	18	15.9	13	18.8
Not	90	83.3	56	81.2
<i>Household income (Mexican pesos per month)</i>				
Average	7 321		8 419	
Standard error	83		128	
<i>Age</i>				
Average	46		47	
Standard error	0.14		2	
<i>Amount sent</i>				
Average	n.d.		152	
Standard error	n.d.		6	

Source: Authors' own elaboration with data from the survey and the experiment.

The field experiment implemented for this study (the Script of this experiment is in Appendix A) consists of a variant of the protocol known in the literature as the trust game (Berg, Dickhaut and McCabe, 1995). In this game, a type A individual has the task of deciding how much money to send to a type B individual, who is anonymous, and how much of an initial capital to keep. The type B individual receives the amount sent by the type A individual multiplied by three. Then, the type B individual decides how much money he wants to return to the type A individual and how much money he wants to retain. The amount of money which may be received and retained by any of the two types of individuals is a decision that is exclusive to the subjects of the experiment. That is, they do not receive suggestions or pre-established rules that might lead them to behave in a specific way.

The results of this experiment have been interpreted in the literature as a measure of the degree of trust and reciprocity that can exist between types A and B individuals. To observe these types of behavior among individuals, it is necessary that the type A individual transfers resources to the type B individual trusting to receive some future return, and that the type B individual acts reciprocally by transferring resources back to the type A individual (Camerer, 2003). Thus, the quantity sent by the type A individual is considered to be a measure of trust, and the amount returned by the type B individual is considered to be a measure of reciprocity.

With the objective of studying the effect of knowing certain information about the type B individual on the monetary quantities sent initially by the type A individual, we introduced two important variants to the original game. First, the type A individual has the opportunity to send money to three different type B individuals. Second, the type A individual has the opportunity to acquire information about some relevant features of each type B individual. The acquisition of information about these features has a cost. The type A individual receives an initial amount of money which he may or may not use for the purchase of information.

To implement this activity we designed an activity book in which each of the 69 participants was given the possibility of acting as a type A individual and deciding the different amounts he could send to three possible type B individuals. In addition, participants were shown a set of pieces of information about type B individuals, which the type A individuals could acquire (up to a maximum of five pieces) before making their decisions about monetary quantities to be sent to the type B individuals. Once the type A individuals decided the amounts to be sent to the three possible

**Table 2.** Distribution of the characteristics of type B individuals purchased by type A individuals

<i>Characteristic</i>	<i>N</i>	<i>n / N (%)</i>
Employment status	52	75
Location	38	55
Membership in Caja Mixtlán	33	48
Household income	32	44
Education	23	33
Home owner	19	28
Bank account holder	15	22
Marital status	14	20
Age	14	20
Government aid applications	12	17
Gender	10	14
Visits friends	9	13
Visits relatives	8	12
Visits U.S.	4	5
Car owner	3	4
Phone line holder	3	4
Stove owner	2	3
Washing machine owner	2	3
TV owner	1	1
Refrigerator owner	1	1
Cellular phone owner	0	0
Cable subscriber	0	0
Microwave owner	0	0
DVD owner	0	0

*Source:* Authors' own elaboration with data from the survey and the experiment.

type B individuals, just one type B individual (out of the three type B individuals considered) was chosen at random and we looked at how he had answered the question on the initial survey as to the amount of money he would send back to the type A individual in case of receiving that specific monetary quantity.

The amount of money given to the type A individuals was 300 Mexican pesos. Those individuals could send multiples of 50, from 0 to 300 Mexican pesos. They also received a payment of 50 Mexican pesos that they could use, if they wished, to buy information about type B individuals.<sup>1</sup> The cost of each piece of information was 10 Mexican pesos.

Table 2 shows the list of features about type B individuals that type A individuals could buy. We considered demographic, financial and social network participation characteristics. Including those variables enables us to analyze the hypothesis that social variables are relevant when individuals make financial decisions. To construct the list of pieces of information we took as a starting point a series of questions included in the survey in which partners of Caja Mixtlán were asked about factors that were relevant for them when lending or borrowing money. Those factors which appeared most often, along with some control variables, were included in the list of pieces of information that the type A individuals could purchase.<sup>2</sup>

### III. Results

In this section we present and discuss our principal results.

#### *III.1. Transfers Made by Type A Individuals*

Table 3 reports the distribution of payments sent by type A individuals. Even though the mode of the payments was 100 Mexican pesos, the average and median were approximately 152 Mexican pesos, with a standard error of 6 Mexican pesos. This heterogeneity in the decisions as to the amount of the original payments contrasts with the results observed in laboratories with students as experimental subjects, in which cases payments are relatively constant at approximately half of the capital available (Camerer,

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<sup>1</sup> The simultaneous implementation of this protocol without the possibility of acquiring information about type B individuals would allow us to study the relationship between anonymity and the degree of cooperation between types A and B individuals.

<sup>2</sup> Monetary amounts returned by type B individuals are obtained from the answers to the questions included in the second part of the survey.

**Table 3.** Distribution of money transfers by type A individuals

<i>Amount</i>	<i>N</i>	<i>n/N (%)</i>
0	6	3
50	34	16
100	58	28
150	32	15
200	34	16
250	11	5
300	32	15
Total	207	100

Source: Authors' own elaboration with data from the survey and the experiment.

**Table 4.** Characteristics of type A individuals which influenced their decision on how much to send

<i>Money Sent</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Money Sent</i>	<i>Coef.</i>	<i>Std. Err.</i>
Constant	184.0987	112.3897	Male	6.955158	20.7796
Atenguillo	5.858454	25.90111	Bank	-54.7816*	22.0382
Talpa	-18.6388	24.11285	Age	.9891787	3.45300
La Laja	-12.6419	27.9243	Age^2	-.008249	.032476
Unemployed	-.891413	20.8798	Family	6.442205	17.2685
Single	-19.3318	33.35637	Friends	39.36391*	17.8133
Married	23.46242	26.6578	Government	15.19396	26.9719
Home owner	-26.0913	19.07734	Buy 2-3 pieces	-58.6599	38.6057
Junior-High & High School	8.555979	23.56603	Buy 4-5 pieces	-50.4041	33.1747
Professional	27.76661	24.1899			
Observations		207			
Groups		69			
Wald chi2(18)		42.83			

Source: Authors' own elaboration with data from the survey and the experiment. \*Significance level of at least 95%.

2003). To estimate the characteristics that are relevant for the type A individuals when deciding the amount of money to be sent to type B individuals, we use the ordinary-least-squares model with random effects.

As can be observed in table 4, among the personal features of type A individuals that seemed to affect the amounts they transferred was whether they had bank accounts and with what frequency they visited friends. Specifically, individuals who reported having a bank account tended to send 55 Mexican pesos more than those who reported not having a bank account. This result is consistent with the idea that those individuals more familiar with financial interaction are more trusting. Barr (2004) reports results of a field experiment conducted in Zimbabwe, in which individuals less familiar with the economic and social rules of the environment where they are settled tend to be less trusting. On the other hand, those individuals who reported visiting their friends regularly tended to send 39 Mexican pesos more than those who reported visiting their friends rarely or never.

Even though home owners tended to send more, and those who bought from two to five pieces of information tended to send smaller amounts of money, the coefficients are not significant.

### *III.2 Information Purchased by Type A Individuals*

Table 5 reports the distribution of the number of characteristics of type B individuals purchased by type A individuals. As can be observed, more than 2/3 of the individuals in the sample decided to buy the five pieces of information and only 6 per cent of them decided not to find out anything about the type B individuals.

In Table 2 we show the distribution of features of type B individuals that could be purchased by type A individuals. The first five features include: the employment status of the individual (75%), location (55%), membership in Caja Mixtlán (48%), household income (45%) and educational level (33%). Thus, individuals were not only interested in financial variables. Participation in Caja Mixtlán and the proximity to their community were also relevant variables. However, as seen in table 6, t-tests for differences between populations show that there is no significant relation between these variables and the amounts of money sent. As noted in the previous section, the number of pieces of information purchased does not prove to be significant in the decisions of type A individuals as to how much money they sent to type B individuals.

**Table 5.** Distribution of the number of characteristics of type B individuals purchased by type A individuals

<i>Number of characteristics</i>	<i>N</i>	<i>n/N (%)</i>	<i>Amount sent</i>
0	4	6	263
1	1	1	83
2	3	4	122
3	5	7	137
4	7	10	176
5	49	71	143
Total	69	100	151

Source: Authors' own elaboration with data from the survey and the experiment.

**Table 6.** Amount sent conditioned to the type of information acquired

<i>Characteristic</i>	<i>Amount sent</i>	<i>N</i>	<i>z</i>	<i>Characteristic</i>	<i>Amount sent</i>	<i>N</i>	<i>z</i>
<i>Employment status</i>				<i>Home ownership</i>			
Employed	151	100		Home owner	145	43	
Unemployed	144	56	-0.61	Non-home owner	133	14	-0.63
<i>Location</i>				<i>Bank account holder</i>			
Different	135	70		Holder	158	12	
Same	146	44	0.62	Non-holder	130	33	-1.09
<i>Membership</i>				<i>Marital status</i>			
Member	145	89		Divorce or wid.	141	6	
Non member	132	10	-0.48	Married	193	28	1.56
<i>Household income</i>				<i>Single</i>			
Const.	152			Age	136	8	-0.11

**Table 6.** Amount sent conditioned to the type of information acquired (Cont.)

<i>Characteristic</i>	<i>Amount sent</i>	<i>N</i>	<i>z</i>	<i>Characteristic</i>	<i>Amount sent</i>	<i>N</i>	<i>z</i>
Average household income	155	91	0.44	Const.	205		
<i>Education</i>				Average age	176	42	-0.85
No Educ. & Prim.	145	31		<i>Government aid applications</i>			
Sec. & Bachill.	141	30	-0.18	No	166	30	
Professional	179	8	1.22	Yes	128	6	-1.64

*Source:* Authors' own elaboration with data from the survey and the experiment.

### *III.3 Conditional Amounts Type B Individuals Return, Given the Transfers of Type A Individuals*

Table 7 reports the average monetary amounts type B individuals received from and returned to type A individuals; the amounts returned being conditional on the amounts received. As shown in this table, type B individuals tended to return monetary amounts that increased in accordance with the amounts they received from type A individuals. However, the average retention for each of the possible transfers from type A individuals is quite stable, at an average of 58 per cent of the amount received. The monetary amounts that type B individuals returned to type A individuals was greater than the amounts that type A individuals had originally sent. This result contrasts with experiments in developed countries where type B individuals tend to return less money than the transfer sent by type A individuals; that amount has been tripled. In our study the average rate of return for type A individuals is approximately 27 per cent of the amount originally sent.

Table 8 shows the personal characteristics reported by type B individuals that affect the conditional amounts they returned to type A individuals. The specification includes dummy variables (e100, e150, e200, e250, e300) that were equal to one whenever they received an amount higher than 50 pesos. All these coefficients were significant and positive, indicating an increasing function on the contributions.



**Table 7.** Average amounts that can be received and retained by type B individuals conditioned to the transfers made by type A individuals

<i>Conditional amounts to be received and retained by type B individuals</i>	<i>Conditional amounts to be sent by type A individuals</i>					
	<i>50</i>	<i>100</i>	<i>150</i>	<i>200</i>	<i>250</i>	<i>300</i>
Amount received by B (Mexican pesos)	150	300	450	600	750	900
Amount retained by B (Mexican pesos)	87	179	261	336	462	500
Amount returned by B (Mexican pesos)	63	121	189	264	288	400
Amount received by B (%)	100	100	100	100	100	100
Amount retained by B (%)	58	60	58	56	62	56
Amount returned by B (%)	42	40	42	44	38	44
The rate of return of A conditioned to the return by B (%)	27	21	26	32	15	33

*Source:* Authors' own elaboration with data from the survey and the experiment.

**Table 8.** Personal characteristics of type B individuals that affect the amounts they returned to type A individuals

<i>Amount returned</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Amount returned</i>	<i>Coef.</i>	<i>Std. Err.</i>
Constant	200.121	103.647	Single	-44.343	30.824
e100	58.7192*	11.0406	Married	-34.424	25.983
e150	66.6246*	11.0405	Sec.& preparatory	-6.2898	20.670
e200	75.6552*	11.0231	Professional	.768326	25.572
e250	26.4700*	10.9922	Male	16.6898	18.252
e300	108.291*	10.9922	Bank	-22.11	23.124
Atenguillo	63.6100*	24.5036	Age	-6.3858	3.4267
Talpa	13.8867	23.8206	Age^2	.058499	.03274
La Laja	26.3640	23.0196	Family	-36.337*	16.967

**Table 8.** Personal characteristics of type B individuals that affect the amounts they returned to type A individuals (Cont.)

<i>Amount returned</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Amount returned</i>	<i>Coef.</i>	<i>Std. Err.</i>
Membership	63.1596*	28.2257	Friends	14.3464	16.630
Unemployed	24.3056	19.0153	Government	-8.8670	25.623
Observations	624				
Groups	105				
Wald chi2(22)	1249.05				

*Source:* Authors' own elaboration with data from the survey and the experiment. \*Significance level of at least 95%.

The estimation also considers other variables that include living location, active membership in Caja Mixtlán, bank account holding, level of education, civil status, age, frequency of visiting family and friends, and requiring assistance from government. Active partners of Caja Mixtlán<sup>3</sup> and individuals who live in Atenguillo returned higher amounts (63 Mexican pesos more). The individuals that reported visiting their relatives frequently returned 36 Mexican pesos less. Older people returned less up until a minimum, after which the amount of money returned increased.<sup>4</sup>

#### IV. Discussion and Future Research

Our experimental results highlight the interest that individuals show in acquiring specific information on the financial status and participation in social networks of other people with whom they may establish financial transactions. Just over 2/3 of the participants purchased the maximum number of five pieces of information. Only 6 per cent of the subjects decided not to buy any information. However, we have found no evidence that the information acquired had any impact on the amounts type A individuals sent to type B individuals. This result allows us to conclude that the acquisition of the pieces of information offered to the participants has

<sup>3</sup> We consider that active partners of Caja Mixtlán are those partners who attend the meetings organized by the authorities of Caja Mixtlán and make frequent use of the financial services offered by Caja Mixtlán.

<sup>4</sup> The level of significance of this variable is 10 per cent.

little impact on their financial decision making process; a process that is based on pre-existent levels of trust among the individuals who are immersed in vertical and horizontal social networks.

The broad support of the distribution of the transfers type A individuals send to type B individuals highlights the heterogeneity of individuals' preferences with respect to the agreements based on trust they wish to reach. At the same time, the degree of concentration around the range between 100 and 150 Mexican pesos provides us with a basis for further research. With respect to the behavior of type B individuals, we find a high degree of reciprocity compared with that found in studies of a similar nature conducted in developed countries. Preferences for reciprocity are fairly homogeneous. We also find that those individuals who meet with friends more often show greater trust. However, the individuals that frequently visit their relatives show a lower level of reciprocity. The active members of Caja Mixtlán show a greater level of reciprocity, which reinforces the perception that the cooperative plays a role in the formation of social networks in this community.

We can thus conclude that in locations where closed social networks prevail, financial transactions depend not only on economic variables but also on other variables such as the individual's level of trust, reciprocity and association. Another point is that, in communities like those involved in this study, the level of sophistication of the use of information when making financial decisions and of the diversity of financial instruments they use and, concomitantly, the degree of financial development, tends to be low. In general, the level of trust seems to be high, although preferences over trust are quite heterogeneous. Moreover, for the case of our experimental subjects, trust seems to overshadow the role of information acquisition while making financial decisions, because they seem interested in acquiring information but they do not use the information they purchase in their financial decision making, relying on pre-existent levels of trust they have in the individuals of their social group.

To have a better map of individuals' preferences on trust and reciprocity and of the impact of new information on their financial decisions and economic cooperation agreements, it is necessary to study other populations. For this reason, and given the differences in the level of development between rural and urban areas, we intend to apply this methodology in different regions within Mexico to capture the dynamic element in our idea about the relationship between financial development, trust and information acquisition.

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## **Appendix: Experimental Instructions**

The following is the verbatim translation (from Spanish into English) of the experimental instructions administered to subjects (the Spanish original is available from the authors upon request).

Script for the experimental sessions

- Mark starting time

### ***1. Introduction***

- Start thanking for the participation.
- Show disposition to clarify any doubt or question.
- Give payment of \$ 50 for agreeing to participate without any commitment.
- Indicate that participation is voluntary at all times.
- Inform that we are members of a research center at a University institution.
- Inform that we are not members of the Government or any political party.
- Inform that the study is only for academic purpose.
- Warn that the questions and their answers will not compromise their rights.
- Ensure that we guarantee the confidentiality of their responses.
- Point out that the questions have no correct or incorrect response.
- Point out that we are only interested in their decisions.
- Describe the study: This is a study about how people make decisions with money.
- Show the activity book, with which they can earn an additional amount of money.
- Ask whether they have any questions.
- Consent question: Can we start?

### ***2. Starting the activity book and warning about the comprehension of the instructions***

- Show the activity book.
- Inform that it is of our interest that they understand the instructions.
- Warn them that they can stop us if there is something unclear from the explanation.

### ***3. General description of the activity, of how the activity to be paid for will be chosen, and of how the payment will be made***

#### **Activity**

In this activity you will make decisions that involve other participants. This activity is done in pairs. The result of this activity will depend on decisions made separately and the decisions made by you and the other three participants of the study, whom we will call: B1, B2 and B3.

You will never know who these participants are. They will never know who you are. You may know some characteristics of these people before making your decision. To know some of these features (if desired) you may purchase them using the 50 pesos we gave you at the start. You will also know the decision made by any of these participants. However, you will know the latter at the end of the study, when you have already made all your decisions.

- Go to the end of the book and show the three boxes of decision.

#### ***4. Method of payment***

To pay you for this activity, one of your decisions will be randomly chosen using a dice. After you finish making your decisions, we will throw a dice:

- 1) If the number is 1 or 2, we will choose for your payment your decision related to participant B1.
- 2) If the number is 3 or 4, we will choose for your payment your decision related to participant B2.
- 3) If the number is 5 or 6, we will choose for your payment your decision related to participant B3.

[Check that the subject understood the procedure by asking the following question: For example, let's throw the dice. The number that appeared is \_ [The participant's answer], therefore the decision chosen for your payoff will be the one you made related to participant \_ [The participant's answer.]

Any side of the dice can occur. You will not know what the other participants' decisions are before throwing the dice.

Make your decision regarding each subject as if it is the one you are going to be paid for. Thus, if this participant is selected, you will have taken the decision that has seemed better. There is no right or wrong answer.

Do you have any question?

[If he/she has questions, explain again.]

[Explain using diagrams in pages 2 and 3.]

*Person A*

In this activity you are going to be a person A, and each of the other participants will be identified as persons B1, B2 and B3.

This page is only an example, but it is equal to the one in which you will have to mark your responses. We will begin our example explaining the activity with a person who we call simply person B.

You will start with \$300 pesos that our study is giving to you to decide how much of that money you want to send to person B. The money you send is multiplied by three, so that person B will receive three times the amount that you send. That is, for every \$1 peso you send to person B, the study will give \$2 additional pesos and, consequently, person B will receive \$3 in total.

Person B may return to you some, all or nothing of the money received, but the money that person B returns to you will not be multiplied.

Thus, you will win what you have saved from the initial \$300 plus what person B had decided to send you back.

Do you have any questions?

Now I am going to explain to you how you will tell us your answer and how we will know the response of person B. Here we have seven pictures, representing seven quantities you can send to person B.

[Show each picture and explain each of them.]

The first possibility is that you save the \$300 pesos and send nothing to person B. If you choose this option, person B would receive nothing and could therefore not return anything to you.

The second option that you have is to stay with \$250 and send \$50 to your partner. In that case, person B would receive \$150 ( $\$50 \times 3$ ) and your income would be \$250 plus what person B decides to return to you.

[Continue explaining likewise all options.]

[Speed and detail explanation depend on cognitive abilities of the participant.]

What we will ask you to do is to decide how much money you want to send to your partner (\$ 0, \$ 50, \$ 100, \$ 150, \$ 200, \$ 250 or \$ 300).

When sending money to different partners, the quantities that you send to each partner B1, B2 or B3 can be equal or different. It is your decision.

To indicate your decision of how much you have decided to send to each partner you must enclose in a circle the corresponding answer. You must choose only one option; the one you like the best.

[Make a graphical demonstration.]



For example, suppose that I am a person A (like you) and I want to send \$100 to person B. Then I would circle this option.

It is very important that you notice that the money you earn for this activity will depend on how much money you keep and on how much money your partner, person B, will return to you.

Now, how are we going to know who your partner is and how much money he has returned?

I brought with me a list with the decisions of other people who have already participated in the study. These people played the role of person B. When you finish answering and we select the corresponding partner, then I will pull out the list and look for the decision of the selected person.

You will not know what the responses from those people are before you make your own decisions; you will not know who your final partner is because the person's name is not mentioned in the list.

Once you know the chosen partner we will open the list to see how much money he/she returned.

[Give the explanation using the corresponding pages.]

And how can we know what he/she responded? This page is an example of the sheet that person B responded. The page has seven amounts he/she responded and they correspond to the seven drawings you have on your answer sheet.

Just as you do not know at this time what your partner decided, when person B responded he/she didn't know how much money you had sent him/her. Then person B had to say, for each quantity that you can send him/her, how much money he/she would return. Thus, for any amount you decide to send, we will know how much money will be returned.

[Make a graphical explanation.]

For example, suppose that I am a person B and that I say: "If my partner, person A, does not send me anything, then I don't receive anything and I cannot return anything" (This is why \$0 is already written with a gray circle.)

Then I would go to the next option and would say "If person A sends me \$50, I would receive \$150 ( $\$ 50 \times 3$ ) and then return you, say, \$ 100".

Then I would go to the next option and would say "If person A sends me \$ 100, I would receive \$300 ( $\$ 100 \times 3$ ) and then return you, say, \$ 200".

[Go ahead with the example, using the quantities \$ 200, \$ 300 and \$400 for the following three decisions.]

Now, imagine that you sent to person B the amount of \$100 used in the example, and that this person is selected for your payment. Let's imagine

that we open the list and see that person B responded as in this example.

What would have happened? How much money would your partner have returned to you?

If you look carefully, this person B said that if person A sent him \$100 he or she would return \$200. Then how much would you win? \$400: the \$200 you saved originally plus the \$200 that person B returned.

And how much does person B win? \$100: \$300 that he/she received minus the \$200 that returned (remember that person B had received \$300, because the \$100 that person A sent would have been multiplied by 3).

Do you have any questions? Remember that person B can return what he or she wants: some, all or nothing of what you sent.

[Write new examples on the same pages.]

[The second example is mandatory, but others depend on whether the participant seems to need them.]

For example, person B might return nothing. [Explain what would happen.] Or he/she could have returned \$0, \$50, \$100, \$150, \$200, etc. Is it clear?

Now, remember that these are only examples. You can choose to send to any of the partners (participants B1, B2 and B3) the amount you prefer within these seven options; and your partners (participants B1, B2 and B3) can give you back what they want to.

[Switch to the worksheet of partners' features.]

### *Buying features' information*

Before making your decisions you may know some information about some features of these people. You can choose up to five characteristics of them. The features that you may know of these people are the following: his/her age, gender, whether he/she is married, his/her level of education, his/her employment status, his/her income, whether he/she has any of the following goods: phone, cell phone, refrigerator, heating gas, television, video or DVD player, washing machine, vehicle, microwave oven, Sky or cable; whether owns his/her home; whether he/she has a bank account; whether he/she helps the cooperative; whether he/she lives or not in the same town.

If you are interested in knowing some of these features, you simply tell me and I will give you this information for each of your partners. Each feature has a cost of 10 pesos, which may be paid using the 50 pesos we gave you at the beginning. You can purchase 5, 4, 3, 2, 1, or 0 characteristics of your partners.

For example, if you decide to know his/her gender, I will give you the information whether the person B1 is a woman or a man, whether the person B2 is a woman or a man and whether the person B3 is a woman or a man. This information will cost 10 pesos. Similarly, any other information you want to know will cost 10 pesos.

I am going to ask, before we move on, to make your decisions marking with an X the features you want to know about these people.

[Given the chosen features, fill the characteristics of these people sheet.]

We will then turn the page and I am going to ask you to enclose the amount of money you want to send to each of your partners in a circle. Let's start with the B1 couple. We will then move to the B2 and finally the B3 couple. Remember that you can only choose one for each pair.

[Perform the payment procedure.]

We now come to the payment procedure.

- Mark the end time

*Source:* Authors' own elaboration.

