

Transmission Of Information Within Transnational Social Networks: A Field Experiment

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A number of studies have shown that immigrants affect the investment decisions of individuals left behind in their native countries, but very little is understood about why or how this occurs. We draw on competing theories of herding and externalities to explain how information is transmitted through the social network and used by its recipients. We use data from a field experiment to test these theories. In the experiment individuals send information about risky decisions to others in their social network. We examine the conditions under which that information is impactful in influencing decisions in the home country. We find strong evidence that supports herding behavior. The results provide insight, explain and predict how immigration can affect investment decisions of those in the home country, and suggest policies to leverage existing immigration patterns to increase economic development abroad.

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An individual's social network, the set of people she knows, has been shown to predict a wide variety of economic and social behavior (Granovetter 1973; Granovetter 1975; Rosenblat and Mobius 2004; Allcott *et al.* 2007; Karlan *et al.* 2009; Leider *et al.* 2009). Previous research has demonstrated that individuals use social networks to collect information and to help them make decisions that affect their current consumption (Mobius *et al.* 2005), alleviation of poverty (Bertrand *et al.* 2000), and retirement welfare (Duflo and Saez 2002; 2003).

This research experimentally investigates the impact of information via social networks on financial decisions. We do so in the context of immigration. Several studies have shown that aggregate measures of the size of immigrant social networks impact aggregate investment decisions in the home country, including technology acquisition, diffusion of knowledge, human capital formation (Gibson and McKenzie 2011), institutions (Docquier and Marfouk 2006; Spilimbergo 2009; Docquier *et al.* 2011), gains from trade (Rauch 1999, 2001), and household investments (Yang 2008; Karlan and Mullainathan 2011; Ashraf *et al.* 2011). Immigration scholars have speculated about the causal mechanism for these findings; this paper provides direct evidence of these mechanisms.

We argue that the transmission of information within transnational social networks impacts investments in the native country. Immigrants in the destination country communicate information to individuals in the native country, individuals in the native country use this information when facing similar investment contexts at home.

But how might this information affect home-country behavior? One theory in immigration literature, *herding behavior* (e.g. Epstein 2002; Bauer, Epstein and Gang 2004; Epstein and Gang 2006) suggests that individuals at home imitate the

behaviors of others who had previously immigrated. Information about others' actions is most impactful when its source is a distant member of the transnational social network. This theory is consistent with the existence and persistence of ethnic enclaves. By copying others, individuals in the home country will emigrate when their net benefits are negative and end up clustering in enclaves in the long run as a mean for protection and survival, even when these enclaves negatively impact earnings, promote poverty and create a culture of isolation (e.g. Chiswick and Miller 1995; 2002; Cutler and Glaeser 1997; Bauer, Epstein and Gang 2002; Borjas 2006; Cuttler, Glaeser, and Vigdor 2007; McKenzie, Gibson and Stillman 2013).

Other research has suggested that these effects can be due to *positive externalities* (Massey and Espinosa 1997; Amuedo-Dorantes 2007). In this theory immigrants provide information to close members of their transnational social networks which influences the decisions of those who remain at home. This information can lower the expected costs of investments in education, businesses or technology, but it is more effective at doing so when its source is a close member of the social network. While there has been much speculation, previous research has provided no direct evidence for either of these theories.

We begin by modeling the decisions of individuals at home as decisions under risk (Sjaastad, 1962; Borjas, 1987; Woodland and Yoshida 2006). We use the differences and similarities of herding and externality theories to generate new predictions about the types of information that will be shared in the social network regarding these decisions. We then test these predictions using a field experiment with current Mexican immigrants and their home-based social network members. We examine the *supply of information* that current immigrants send to those at varying levels of social distance from themselves. We also elicit the *demand for information* which reflects preferences from those at home about the information they could potentially receive from current immigrants. We

further examine the impact of the information transmitted on subsequent risky decision-making in the home country. This design enables us to differentiate between the competing theories of herding and externality, and to identify potential reasons why immigration might affect investments in the home country.

Previous literature on the impact of peer effects on financial decision making has identified two types of information that may be relevant for risky decisions (Bertrand *et al.* 2000, Duflo and Saez 2002) and which we use in our experiment. The first is *decision* information. In our setting, this would involve observing current immigrants' actions before making one's own choice at home. The second is *advice*. In our setting, this would involve advice given from the current immigrant to the individual at home about the investment decision they were about to make. In our study, we will examine the effect of these two types of information as they are shared within the social network.

Our results indicate strong support for the herding theory of transmission of information. This theory predicts that immigrants and individuals at home are more likely to transmit (receive) decisions than advice to (from) distant members of their social network and this information will more strongly affect the final investments at home. Our results are consistent with these predictions, along with other predictions made by both theories.

This paper makes several important new contributions. First, while previous papers have examined the impact of social networks on a variety of behaviors in the *destination country* (e.g. consumption, Mobius *et al.* 2005; welfare programs take up rates, Bertrand *et al.* 2000; engagement in retirement plans, Duflo and Saez 2002; likelihood of emigrating, Munshi 2003; obtaining a job, Patel and Vella 2007; and getting higher wages, Amuedo-Dorantes 2007; Massey and Espinosa 1997), we are the first to examine the impact of transnational social networks on behaviors in the *home country*. Second, this study is the first to examine how typical information (i.e., decisions and advice) from one's social

network affects decisions under risk. Third, we are the first to examine the *mechanisms* through which social networks might affect investment decisions; externalities or herding. The results from this study contribute to our understanding of information transmission via social networks more generally, and have the potential to help us explain and predict when individuals will choose to invest in risky settings given the information they acquire from their social networks, even beyond the immigration domain.

This paper continues as follows. Section I discusses relevant literature on transmission of information within social networks, immigration, risky investments, and presents the predictions. Section II describes the experimental design and procedures using participants in the US and Mexico. Section III presents the experimental results. Section IV concludes.

I. Previous Literature and Predictions

This research combines three streams of research, which are reviewed briefly here. We begin with a discussion of other papers that have investigated the transmission of information along social networks. We then discuss the context and the setting in which we explore this transmission: immigration and the risky task we will use to model the investment decision. Finally, we introduce our hypotheses based on herding and positive externalities theories.

A. *Social Networks and Information*

An emerging literature in economics has documented the impact of social networks on economic decisions, including job search (Montgomery 1991), consumption (Abel 1990) and unemployment (Akerlof and Main 1980). More recently, four papers have investigated whether *information* might be a relevant mechanism through which social networks influence individual decisions.

Bertrand *et al.* (2000) examine the impact of social networks on participation in welfare programs. The authors hypothesize that individuals interact mainly with others who speak the same language. They show that as the frequency of welfare participation of other same-language individuals increases, the likelihood that a target individual will participate in welfare programs also increases. They further show that the effects of networks on behavior are weaker for participants who speak better English, reinforcing their conclusion that it is information transmitted via the network that influences actions.

Duflo and Saez (2002, 2003) examine the impact of social networks on employee's decisions to enroll in a retirement savings program. They randomly invite (and incentivize) employees to attend a benefit fair where the advantages of these accounts are explained. They find that other employees in the same department as the invited employee were significantly more likely to enroll in the savings program. The authors highlight information exchange in the social network as one potential mechanism through which this effect might occur, as well as a desire for conformity or herding.

In a final experiment, Mobius *et al.* (2005) measure the social networks of students at a large private university. They distribute product samples to individuals in the social network, and measure the level of information and valuations for the products of the linked individuals. The authors distinguish between explicit information exchange in the network (which they call strong social learning and we link to advice in our experimental design), and observing others' consumption choices and drawing inferences about the product (which they call weak social learning and we relate to decisions in our experimental design).

Unfortunately, the previous literature has not controlled the *types* of information that might be transmitted in the social network (although Mobius *et al.* 2005 make a first attempt). Theoretical work has identified two types of information that

could be transmitted: *decision information* and *advice*. *Decision information* is information about the previous actions of others in one's network and their consequences, which can be used to infer one's best decision. Learning that someone is going to school, investing in a business, or actively saving are examples of decision information. *Advice* is a recommendation given by individuals in one's network about the decision, which may be accepted or rejected. For example, a member of your social network might advise you to acquire new technology for your business, to go to school, to work toward changing political institutions or to take other actions.

Of course, in the field, these two types of information may occur simultaneously. Certainly in the previous literature any or all of these types of information may be causing the effects noted. Our experimental design thus contributes to the literature on information in social networks by controlling and separately identifying the effects of these different types of information, and measuring their perceived value and actual impact.

B. *Immigration*

We investigate the question of information in networks in the context of immigration. In particular, we focus on the impact of information from immigrant social network on decisions to invest individual's home country resources.

Several studies show connections between aggregate immigrant social networks and aggregate investment decisions in the home country, including technology acquisition, diffusion of knowledge, human capital formation (Gibson and McKenzie 2011), institutions (Docquier and Marfouk 2006; Spilimbergo 2009; Docquier *et al.* 2011), gains from trade (Rauch 1999, 2001), and household

investments (Yang 2008; Karlan and Mullainathan 2011; Ashraf *et al.* 2011). However, these studies do not demonstrate what causes these relationships.

We model the investment decision in the home country as a decision under risk (Sjaastad, 1962; Borjas, 1987; Woodland and Yoshida 2006). When an individual at home decides not to invest (e.g. to keep same education level, to use existing technology, etc.), he faces a safe situation, where the outcomes are known. In contrast, when an individual at home decides to invest (e.g. to invest in human capital, to acquire new technology, to work toward changing political institutions, etc.), he faces risky situations, where the improving his welfare (e.g. obtaining employment, improving business profitability, etc.) and the extent of improvement are not certain,

We propose that information transmitted along social networks can reduce perceived risk and increase the likelihood of investing. If so, this would explain why increased emigration could increase investment and economic development in the home country. Our paper specifically asks what types of information individuals share, seek to receive, and use in these settings.

C. Positive Externalities, Herding and Predictions

In this section we generate testable predictions based on theories of positive externalities (e.g. Massey and Espinosa 1997; Munshi 2003; Amuedo-Dorantes 2007; Patel and Vella 2007) and herding behavior in immigration (e.g. Scharfstein and Stein 1990; Banerjee 1992; Bikhchandani et al. 1992; Welch 1992; Epstein 2002; Bauer, Epstein and Gang 2004; Epstein and Gang 2006) with respect to the supply, demand, and use of information under risk.

Herding theory (Scharfstein and Stein 1990; Banerjee 1992; Bikhchandani et al. 1992; Epstein 2002) is mostly based on Epstein (2002) immigration signaling model with two possible investments, one better than the other, where individuals

must decide which to choose. Individuals at home receive a private signal and a public signal (from members of the social network). The model generates two optima: one under a risky environment and another one under certainty. Under some parameterizations (that reflect a risky environment), individuals discount their private signals and copy current immigrants' decisions; specifically those made by members who are farther away in their social network. Under this set of parameters individuals at home prefer information about others' decisions (rather than advice) and value information from more distant social network members more highly, as it is likely to be further from their private signal and thus more informative.

Positive externalities theory (Munshi 2003) assumes that individuals at home engage in a cost-benefit analysis comparing their expected present value of income with and without a given investment. The calculation includes expected earnings, idiosyncratic features (e.g. risk preferences) of the individual, and the closeness of the social network member from which the information flows. The theory assumes that individuals at home acquire as much information as they can about possible investments from close members of their social network, generally from family members. This acquisition of information is costly. This theory predicts no differences in supply of or demand for information between different types of information, but that information from individuals close in the social network will be significantly more likely to be supplied and demanded and will be more highly relied upon than from those more distant.

Both theories have in common the social network and information components. The corresponding predictions of each theory vary depending on the degree of closeness of relationships and the type of information transmitted within these relationships. Thus, we design a 2x2 field experiment (Harrison and List 2004) to examine the supply of and demand for information, how it varies with the social network, and whether that variation is consistent with the predictions of these

theories. We compare two types of information (*decision, advice*), and two sources of information (*close or distant social contacts*). We break down these predictions into two levels: the transmission of information and the use of information. The former set of predictions are stated below.

Prediction 1 supporting Herding. —Decisions are more likely to be supplied and demanded than advice among farther members of the social network rather than among those close members.

Prediction 1 supporting Positive Externalities. —Both advice and decisions are equally likely to be supplied and demanded among close members of the social network. Less information will be supplied among more distant members of the social network.

In addition to the supply of and demand for information, our design allows us to examine the extent to which information is used in the individual's decision; that is, the extent to which the participants' decision is changed upon receipt of the information. Both theories assume that individuals at home make investment decisions based on current immigrants information. Under herding, this weight of information is higher when the source is a distant social network member and the type of information is decision. Under positive externalities, the weight of information in the subsequent investment is higher when the source of information is a member independent of the type of information. The corresponding second level of predictions are stated below.

Prediction 2 supporting Herding. —Individuals at home use more heavily decisions rather than advice from distant members in their social network. Individuals at home do not incorporate the decisions of close members.

Prediction 2 supporting Positive Externalities. —Individuals at home rely more heavily on any information coming from close members in their social network. As a result, individuals at home ignore information coming from more distant network members.

In sum, this paper combines and independently contributes to three research streams: social networks and information, immigration and economic development, and risk. We model the investment decision undertaken at home as a decision under risk, examine complementing types of information that individuals can send and receive about this decision to/from members of their transnational social network and identify their effects.

II. Experimental Design and Procedures

A. Participants

Our project involves a field experiment, using participants who are current Mexican immigrants to the U.S. and individuals in their social network still in Mexico. We first recruited 61 current immigrants in a large metropolitan city in the U.S. where we identified a cluster of Mexican immigrants who all came from a small town in Guanajuato, Mexico. As part of the session described below, we asked participants to identify members of their transnational social network who are currently living in their native town and who might like to participate in a similar experiment. We then travelled to Mexico, and contacted 122 individuals named by the current immigrants as members of their social network; one close and one distant contact for each U.S. participant. Of those 122 identified individuals, 95 participated in the experiment. This is a comparable sample size as previous work in the field using social networks (e.g. Karlan *et al.* 2009).

The experiments were conducted in Spring and Summer 2011. First, participants in the U.S. were recruited via pamphlets distributed and posted in a

Hispanic Community Center, popular Hispanic supermarkets and public places in their neighborhood. Interested participants called to make an appointment to participate in the study in Spanish. Sessions were run between 7 A.M. and 8 P.M. in the Hispanic Community Center, both during the week and on the weekends. This center was familiar to locals, safe, and in a central location in the neighborhood.

Second, participants in Mexico were recruited door-to-door because a U.S. contact had named them as a member of their transnational network. The field team searched for the named individuals' addresses in the town and made sure to invite only one individual per household who both was named by the current immigrant and most closely matched the U.S. contact (same gender and closest in age). Participants in Mexico participated in the experiment in several rooms in a local hotel between 8 A.M. and 9 P.M., which we transformed into small classrooms similar to the classrooms in the U.S. Hispanic Center. This hotel is located in the center of the town, is the only hotel in the town, and is well known to all residents.

Each session in the U.S. and Mexico was run one-on-one and lasted about two hours. One decision was chosen at random for payment; the average earnings were \$60, equivalent to one day's average wage earnings of this population. We transformed the payoffs to Mexican pesos using a Purchasing Power Parity Index based on a basket of goods that are available at both sites (Henrich *et al.* 2010).

A detailed socio-demographic composition of both samples can be seen in Table I below. Given the recruitment procedure in Mexico, the Mexico participants were similar to the participants in the U.S. in terms of age and gender. Thus, both samples are 46% female, and on average, 40 years old in the U.S. and 35 years old in Mexico. On average, participants in the U.S. have 6 years of education while the participants in Mexico have 8 years.

[Insert Table I Here]

B. Tasks

In the experiment, each participant in the U.S. and Mexico made decisions on a series of identical tasks. In both countries, participants faced a series of gambles. In these tasks, we allow for the sharing of information: current immigrants in the U.S. could send information to individuals in their social network in Mexico. We charged one dollar for sending information to each member of the social network (family member, friend). We similarly charged the purchasing power equivalent of one dollar (2 pesos and 50 cents) to the participants in Mexico for each piece of information they requested from their social network contact. The experimental design also includes other incentivized tasks (a risk preference elicitation from Eckel and Grossman [2002] and a time preference elicitation), and an individual interview on immigration experiences and attitudes. At the end of the sessions, we randomly selected one task for payment. The experimental instructions are designed pictorially for a low-literacy population and can be found in the appendix in Figures A.1. All the instructions were verbal, in Spanish, and followed a scripted protocol, which is available upon request.

i. Information Setting: Risk

Our primary focus is on risky investments. Our experimental task is based on Charness and Gneezy (2003). Participants have \$25 and can decide how much to keep and how much to invest in a risky investment. Money the participant invests has a 50 percent chance of tripling, and a 50 percent chance of being lost (Charness and Gneezy 2003 have a multiplier of 2.5). This task produces a continuous measure of risk preferences; individuals invest between \$0 and \$25.

We operationalize this experiment by showing the participant a bag that contains two cards. One card has writing on it and the other card says \$0. If we

pay this task at the end of the session, the participant draws one card from the bag. If she draws the card with writing on it, then she triples the invested money. If she draws the card with \$0 on it, then she loses the invested money. She keeps any money she did not put in the risky option. Figure A.1. in the appendix graphically depicts the risky choice facing the participants.

Many decisions that result in economic development in underdeveloped countries are risky (e.g. Sjaastad 1962, Borjas 1987, and Woodland and Yoshida 2006). The individual can keep their \$25 (e.g. keep the same education level, keep same technology for their company, ...), or invest in a riskier option (e.g. invest in human capital, invest in physical capital, ...). The riskier option provides a chance at a better outcome, but also a chance at a worse outcome. We use this task as a vehicle for the transmission of information along the social network.

ii. Sources and Types of Information Available for Transmission

In addition to completing the risky task itself, experimental participants in the U.S. can send information to members of their social networks about the task described above, and experimental participants in Mexico can receive information about the task. We measure the information supplied and demanded as one of our dependent variables.

Demand of Information (Receiving information in Mexico): Subjects were invited to participate in our experiments in Mexico because they were named by a U.S. participant as a member of their social network. After making each investment decision independently, Mexico participants had the option to purchase information about the investments. This information was known to be sent by the U.S. participant who named them.

First, Mexico participants made an unformed decision in a risky gamble described above. This provides us with a baseline measure of their initial decision without any information. Next, Mexico participants had the option to pay to receive information which might reduce the perceived risk they face. We use a

between-subjects design. Thus each Mexico participant could purchase only one type of information throughout the experiment. Mexico participants knew that this information was sent by a member of their social network in the U.S. It is important to clarify that no participant in the U.S. mentioned anything about the experiments to any participant in Mexico. The experimental project was a complete surprise to everyone in Mexico.

We use a simple mechanism to measure value for information. We asked Mexico participants to pay \$1 (2 Mexican pesos and 50 cents) per each unit of information they wished to receive out of their \$20 (50 pesos) show-up fee. We chose \$1 as it approximates the cost of a 20-minute phone call between the U.S. and Guanajuato. Information was only provided if the Mexico participant paid. Our measure of demand for information will be the proportion of individuals at home who choose to pay for each type of information.

For those in Mexico assigned to the *decision* information treatment, participants were told the investment decision of their U.S. contact. For example, they might be told that their U.S. contact invested \$15 in the risky option. For those in Mexico assigned to the *advice* treatment, participants were provided advice offered by their U.S. contact (as in Schotter and Sopher 2007). U.S. participants sent a message to their contact, advising them on how much to invest in the risky option. For example, they might advise their contact to invest \$0 in the risky gamble. The decision to send information (decision or advice) and the information sent is elicited *before* the current immigrant knows about the outcome of their gamble. This avoids confounding the immigrant's income level (winning or losing the gamble) with their decision or advice. The source of the information factor (*i.e., family or friend*) follows a between-subject design for the participants in Mexico.

If the Mexico participant demanded the information, they received a single type. They then had the opportunity to make a second decision (given the

information) for the same task. Comparing the first and second decisions allows us to identify the extent to which individuals used the information they receive. If the participant did not pay for the information, they did not make a second decision.

At the end of the experiment, we chose one task at random for payment. Any uncertainty was resolved, and the decision that individuals made was implemented.

Supply of Information (Sending Information from the U.S.): Participants in the U.S. made decisions in the risky gamble as described above. They were then presented with one type of information (again, in a between-subject design), and had the option to send this information to multiple members of their social network, a close member (family member) or a distant member (friend). Thus, the source of the information factor (i.e., family and friend) follows a within-subject design for the participants in the U.S. For those in the decision information treatment, participants were able to communicate their decision to their social network members. For those in the advice treatment, participants were able to send one piece of advice to each of their social network members: invest \$X in the risky option. They send the same decision or advice to their family and friends.

A detailed summary of the timeline and experimental tasks during the field work is found in Table II below.

[Insert Table II Here]

C. Hypotheses

The theoretical predictions from Section I generate several testable hypotheses for our experimental design. The first level of predictions addresses the transmission of information per se: what type of information immigrants

(individuals at home) supply (demand) and to (from) whom. These predictions lead to the following first level of Hypotheses.

H1 supporting Herding. —Under this hypothesis we derive two predictions based on our experimental design. First, the main prediction is that friends would be more likely to transmit and receive decisions than advice. Second, we anticipate that Mexico participants will not be equally likely to receive advice and decisions from family members in the U.S. More advice availability for family supports herding because it gives more information to one side of the social network, family. Given the proximity of close members (family) in the social network, there is no reason to provide decisions to them because they are able to predict or observe those decisions. However, advice contains experience, learning processes, and provides guidance from someone who might have a higher social status than the receiver of the advice (i.e. Mexicans back home usually perceive current immigrants in the U.S. as heroes). In fact, Mexico participants should demand fewer decisions than advice from family members who live in the U.S.

H1 supporting Externalities. —We also formulate two predictions linked to the topic of externalities. First, we hypothesize that participants are equally likely to transmit or receive decisions and advice. Second, guided by the notion of externalities, we also predict that participants would be more likely to supply information to and demand information from family rather than friends. This will generate external benefits from the social network.

The second level of hypotheses specified below focuses on how individuals will use the various types of information they receive:

H2 supporting Herding. —We anticipate that Mexico participants will be more influenced by their friends' decisions than their family's and will not be influenced by advice from any party.

H2 supporting Externalities. —We expect that Mexico participants will use information more intensively when it is originated by family (vs. friends); we also expect Mexico participant to rely equally on advice and decision information.

III. Results

In this section we investigate the impact of the types and sources of information on the transmission and use of information. Our analysis has two subsections based on our two levels of hypotheses. First we analyze the supply and demand of information. Second we analyze the use of information in decision-making. For each of these, we first present descriptive statistics, followed by regression analysis using individual level data to test the corresponding hypotheses formulated in Section II.

A. Supply and Demand of Information

Supply of Information (Sending Information to Mexico): In Figure I below, we compare the likelihood of sending advice or decisions to social network members in Mexico. We observe clear differences across the four treatments. As shown in the figure below, the percentages of individuals sending decisions (advice) to family and friends are 73 percent (87 percent) and 77 percent (61 percent), respectively. Immigrants were thus 16 percent (14 percent) more likely to send decisions (advice) to friends (family) compared to advice (decisions) ($p < .05$) which supports herding theory. Beyond the simple difference across treatments, we are interested in the total effect, or the difference-in-difference effect, in order to test the first level of hypotheses. The difference-in-difference estimation is identified by comparing differences in sending information between friends (16 percent) and family (-14 percent) across decisions and advice, where each individual's own family decision is used as a control for its friend decision.

A basic difference-in-difference estimation is 16 percent minus the negative of 14 percent. This value indicates that immigrants are 30 percent more likely to provide decisions instead of advice to friends than to family. We present the statistical inference of this result below.

[Insert Figure I Here]

To more formally test hypothesis 1 (*H1*) we use the following Probit model specified in equation (1) to analyze the effects of the experimental treatments on the individual's transmission of information.

$$(1) \quad P(\text{Information}_{ij}=1|x) = \Phi(\beta_0 + \beta_1 \text{Decision}_i + \beta_2 \text{Friend}_i + \beta_3 \text{Decision}_i \cdot \text{Friend}_i + \Gamma \vec{X} + \varepsilon_{ij})$$

The dependent variable captures immigrants likelihood of providing information to individuals back home in Mexico, and assigns the value of one if the immigrant paid for sending the information under a respective treatment, zero if otherwise. The independent variables of interest are dichotomous variables for the randomized experimental factors. The variable *Decision_i* takes the value of one if a current immigrant is facing the treatment in which has the opportunity to send his own investment decisions, and a value of zero when assigned to the treatment to send advice to Mexico participants. The variable *Friend_i* is assigned a value of one if a current immigrant is under the treatment in which has the option to send information to a friend, a value of zero if the treatment gives the option of sending information to family. In addition, the empirical model also includes the interaction term *Decision_i·Friend_i* to test our first hypothesis because its corresponding coefficient is the difference-in-difference effect we described above.

The control variables in \vec{X} include socio-demographic characteristics including gender, age, number of children under 18 years old, years of education, income in

dollars, whether the participant is a current home owners, marital status, legal status, number of trips to the U.S. while undocumented, individual's perception of how difficult is to live in the U.S., and level of inexact or erroneous information received about living in the U.S. as a potential immigrant. ε_{ij} is the error term. We present average marginal effects that are consistent with the sign and level of significance of coefficients. Standard errors are clustered by individual.

Table III below presents the results. Specification (1) is without control variables and Specification (2) includes them. Our results are robust to the inclusion of control variables, and with other specifications (i.e. logit). We observe effects that are qualitative consistent across both specifications, although the statistical significance varies. The Akaike Information Criteria (AIC) for the reduced model, specification (1) is 140.61 while for the complete model, specification (2), is 127.03. This leads us to conclude that the complete model, specification (2), has more explanatory power and carries more information than specification (1). Thus we concentrate on the specification (2) results.

[Insert Table III here]

Our first main prediction of the first level of hypotheses H1, consistent with herding, suggests that participants are more likely to provide decisions instead of advice to more distant social network members (i.e. friends) rather than family. We test this hypothesis through the difference-in-difference estimation measured by β_3 , which is the coefficient of the interaction term $Decision_i \cdot Friend_i$. Consistent with our first hypothesis under herding, this coefficient estimate is positive, (we reject H1 supporting Externalities). The probability of sending information to friends in comparison to family members in the home country increases by 30 percent when current immigrants are able to send their own decisions instead of advice ($p = 0.001$).

Our second prediction in H1, consistent with herding, is that current immigrants are less likely to provide decisions than advice to family members and send less advice to friends than to family members. This predicts that β_1 and β_2 will be negative. We confirm this second prediction in favor of herding and reject the second prediction in H1 in favor of externalities. Results in Table III show that the probability of sending information to individuals in the home country decreases by 20 percent (β_1) when current immigrants are able to send their own decisions instead of advice to family members ($p = 0.047$). The probability of sending advice decreases by 26 percent (β_2) when the recipient is a friend instead of a family member ($p = 0.001$). Current immigrants are not equally likely to provide advice and decisions to family members or friends.

The supply of information also corroborates herding behavior. Current immigrants provide more of their own decisions to friends than any other combination of source and type of information. Based on the first level of hypotheses presented in Section II.C., we thus confirm H1 supporting herding and reject H1 supporting externalities.¹

Demand of Information (Receiving Information in Mexico): Overall, 80 percent of the Mexico participants paid for and received information. Figure II shows consistent differences in the likelihood of paying for receiving advice or

¹ In addition to the main variables of interest, we observe a few significant impacts of the control variables on the transmission of information. The likelihood of sending information declines by 4 percent with an extra year of education ($p = 0.001$), thus confirming that current immigrants with more education might not have a higher perception of risk than the actual gamble. In this sense, when facing a gamble where the outcomes and probabilities of it are well-known, immigrants with higher levels of education consider that sending information does not solve any uncertainty about the investment decision. Being undocumented increases the probability of sending information by 21 percent ($p = 0.015$), and an extra trip a participant crossed the border while being undocumented also increases the likelihood of sending information by 1 percent ($p = 0.001$). These two sets of results imply that being exposed to more risk lead participants to share more information in a risky environment.

decisions from family or friends living in the U.S. The percentage of decisions (advice) demanded from family and friends are 46 percent (91 percent) and 88 percent (79 percent), respectively. Mexico participants were thus 9 percent (45 percent) more likely to pay for receiving decisions (advice) from friends (family) rather than advice (decisions) which again supports the predictions of herding theory ($p = 0.148$; $p < .01$). As before, we are interested in the difference-in-difference effect (9 percent minus the negative of 45 percent). This estimation indicates that Mexico participants are 54 percent more likely to pay for receiving decisions instead of advice from friends in the U.S. than from family in the U.S. The statistical inference of this result is below.

[Insert Figure II Here]

We follow a similar approach to the Probit specification in equation (1) used for the previous analysis on the supply of information, with a few differences. The main difference is that the dependent variable is the likelihood of demanding information from current immigrants in the U.S., and assigns the value of one if the Mexico participant paid for receiving the information under the corresponding treatment, and a value of zero if otherwise. The treatment variables (i.e. $Decision_i$, $Friend_i$, $Decision_i \cdot Friend_i$) take the value of one if the Mexico participant is in the Decision, Friend or the combination of these two conditions. The last difference is that the control variables in \vec{X} do not include the variables on the immigrant experience.

We present the statistical inference for the demand of information in Table IV below. Specification (3) is without control variables and Specification (4) includes them. Our results are robust to the inclusion of control variables and other specifications (i.e. logit). The AIC of both specifications (AIC₃= 94.30 and

AIC₄= 93.14) indicate specification (4) is preferred. Thus we focus on specification (4) for our interpretation of the results.

[Insert Table IV here]

The first main prediction from H1 in Section II.C., consistent with herding, implies that Mexico participants are more likely to pay for receiving decisions instead of advice from friends rather than family in the U.S. As stated above, we expect this difference-in-difference effect to be positive (β_3 , the coefficient of the interaction term $Decision_i \cdot Friend_i$). In fact, the magnitude and significance of the overall difference comparing the probability of paying for receiving decisions versus advice from friends instead of family members is 73 percent ($p = 0.001$). This substantial result reinforces the presence of herding behavior and also rejects the main prediction in H1 supporting externalities.

Our second prediction in H1 supporting herding is that the demand of information should separately favor advice instead of decisions from family members and refuse advice from friends. According to this second prediction, β_1 and β_2 will be negative. In Table IV above we confirm this prediction as the probability of paying for receiving information decreases by 61 percent (β_1) when decisions are available instead of advice from family members in the U.S. ($p = 0.001$). We also find that the probability of paying for receiving advice decreases by 24 percent (β_2) when its source is a friend instead of a family member in the U.S. ($p = 0.030$). We again find evidence that confirms H1 supporting herding and invalidates H1 supporting externalities.

The demand for information analysis again supports the predictions of herding behavior. Potential immigrants seek to learn about friends' decisions in comparison to other combinations of available information.²

The coefficient's signs of the supply of and demand for information results are consistent, thus clearly confirming herding as a motivation for the transmission of information. The next analysis concentrates on the use of the information in impacting decisions.

B. How Information Affects Decision-Making

The extent to which the information received via the social network influences the decisions ultimately made is vital to demonstrating and explaining the impact of immigration on economic development in the home country. Our individuals in Mexico first made a choice, then had the opportunity to purchase information and, if purchased, had the opportunity to make a second (different) choice. Among those who purchased information (N=76) we observe that 40 percent did not change their initial decision, 31.58 percent reduced their investment, and 27.63 percent increased their investments. As expected, participants change their decisions more than 50% of time in all settings when they demand information ($p = 0.001$).

However, this analysis does not reflect the content of the advice or decision received and the extent of its impact. We follow previous research in calculating

² Additionally, we observe the impact of a few control variables on the demand of information. The likelihood of receiving information declines by 20 percent if the participant is single ($p = 0.036$), 2 percent with an extra year of education ($p = 0.006$), and 0.6 percent with a year of age. The likelihood increases marginally with income ($p = 0.005$). However, the likelihood increases by 49 percent if the perception of difficulty of living in the U.S. increases ($p = 0.002$) and 39 percent if the participant has had previous U.S. immigration experience. Both results imply that knowing the living conditions under which the current immigrants sent the information leads Mexico participants to receive the information they sent about the risky task.

the Weight of Information (WOI), defined in equation (2) below (Gino, Sang and Croson 2009).

$$(2) \quad WOI = \frac{|Second\ Decision - First\ Decision|}{|Information - First\ Decision|}$$

This variable reflects how much participants' second decision is affected by the information they receive, compared with their first decision. The WOI has a lower bound at zero when the second decision equals the first decision.³ Higher values of WOI, specially the value of 1, indicate that participants change their investment decisions based on the received information

Figure III below show the types of investment changes specified in the variable WOI. The numerator is the actual change and the denominator is the suggested change given the information received. The correlation between the suggested and actual changes is 42 percent (Spearman Rank $p = 0.001$). By comparing the suggested and actual changes, we observe that some but not all participants are influenced by the information ($p = 0.001$). The majority of participants, 58 percent, received a positive suggested change (a recommendation to be more risky than they previously were). Out of this percentage, 45 percent implemented such a positive actual change. However, 36 percent do not change their decisions and 18 percent invested less than what the information suggested. Participants who received a negative suggested change (a recommendation to be less risky than they previously were) (39 percent) implement it 50 percent of the time, 46.6 percent of the time they do not change their decision and only 3 percent of the time they invest in the opposite direction of a negative suggestion.⁴

[Insert Figure III here]

³Note that when the information received equals the first decision, the WOI is undefined. We eliminated only two instances when this occurred.

⁴Only 3 percent of participants received information that does not suggest a change in their decisions, 50 percent of the time they do not change their decisions, 50 percent of the time they invest less than what they previously did and the information suggested.

In Table V below we present the following Tobit model to analyze the extent to which the experimental treatments lead people to weight the information as we show in Figure III. We test the second hypothesis (*H2*) with this specification (5) and we use the same independent variables of the probit model specified in equation (1). However, the dependent variable in this case is the weight of information of equation (2).

[Insert Table V here]

As in the previous probit specifications we concentrate on the overall effect of the experimental treatments measured by the difference-in-difference effect of β_3 , the coefficient of the interaction term $Decision_i \cdot Friend_i$. We expect this coefficient to be positive under *H2 supporting Herding*. This supports the second hypothesis which is predicted by herding behavior, as participants mostly incorporate decisions from friends into their own decisions rather than any other type of information coming from other source. The results in Table V indicate that the weight of information increases by 1.93 if a Mexico participant receives decisions from friends compared to any other type of combination in information ($p= 0.041$). This is additional support for herding behavior.

The second hypothesis under herding also relies on the assumption that the weighting of information should be different across types and sources of information. We thus expect β_1 and β_2 , to be negative. Our results support one of these predictions. Mexico participants rely less on decisions than advice from family members ($\beta_1 = -1.620$, $p = 0.039$), and hardly rely less on advice from a friend than a family member ($\beta_2 = -0.717$, $p = 0.126$). The type of information is also important, only a friend's decision have an impact on one's own. These results present continued evidence for herding behavior mechanisms.

IV. Conclusions

Evidence at the aggregate level suggests that the proportion of immigrants from a given country is correlated with that country's economic development (Docquier and Marfouk 2006; Spilimbergo 2009; Docquier *et al.* 2011; Gibson and McKenzie 2011). However, we have only minimal knowledge of the mechanisms through which this effect operates. We suggest one mechanism for this result; information communicated through the social network between current immigrants and individuals at home. Two theories describe why individuals might supply and demand information, yet offer different predictions for different types of information (advice, decisions) and from different sources (close or distant social network members).

We tested the predictions of each theory with a field experiment (Harrison and List 2004) with Mexican immigrants in the U.S. and their social networks in Mexico. We demonstrate that herding behavior best organizes the results involving the supply of and demand for information, and the use of information. The essential element behind this end is that the immigrants and their friends prefer to transmit and receive, respectively, only investment decisions. Herding behavior also best describes the way that information is used: recipients mostly imitate friends' investment decisions.

All research has limitations, and ours is no exception. We focus our study only on first-hand information transmission; from the current immigrant to individual at home. Information may also be transmitted among individuals at home. Future work might seek to understand what information is re-transmitted, and how second-hand information transmission of information might affect investment decisions and drive or suppress economic growth.

In addition, while the decision in our setting is an actual investment it is relatively low-stakes. Future work (likely more empirical than experimental)

could explore transmission of information in settings where recipients are making higher-stakes risky investments.

Our results contribute to our knowledge of how the transmission of social information happens within social networks (Bertrand et al. 2000; Duflo and Saenz 2002, 2003; Mobius, Niehaus and Rosenblatt 2005) in a new, policy-relevant, setting. The results offer insights into how policymakers in the home country and international entities might design informational campaigns to encourage (or discourage) investment by individuals left behind. We believe that the deeper theoretical and practical understanding of the transmission of information in immigration settings can improve development outcomes in the native country.



V. Appendix

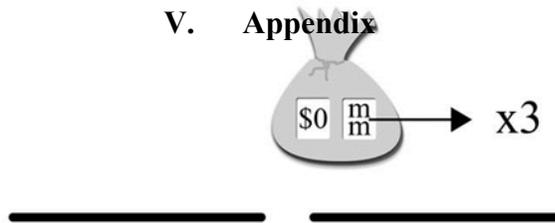


FIGURE A.1. EXPERIMENTAL INSTRUCTIONS

Notes: We use this picture to show our low literacy population how to invest money in two different accounts. The script says: "For this activity you have \$25. Out of the \$25 you will decide how much you wish to keep and how much you wish to put in a risky option. There is a half chance that you will win and that the money you put

in will triple. There is a half chance that you will lose and you will lose the money you have put in. We have a bag that contains two cards. One card says mm and the other card says \$0. You will draw one card from the bag without looking. If you draw the card with mm on it, then you win and you triple your money. If you draw the card with \$0 on it, then you lose and you lose your money.”

REFERENCES

- Abel, A. B. 1990. Asset prices under habit formation and catching up with the joneses. *American Economic Review*, 80(2), 38-42.
- Akerlof, G. A., & Main, B. G. M. 1980. Unemployment spells and unemployment experience. *American Economic Review*, 70(5), 885-893.
- Alcott, H., Karlan, D., Mobius, M., Rosenblat, T., & Szeidl, A. 2007. Community size and network closure. *American Economic Review* 97 (2), 80-85.
- Amuedo-Dorantes, C., & Mundra, K. 2007. Social networks and their impact on the earnings of Mexican migrants. *Demography* 44(4), 849-63.
- Anderson, L., & Holt, C. 1997. Information Cascades in the Laboratory. *American Economic Review*, 87(5), 847-862.
- Ashraf, N., Aycinena, D., Martinez, C., & Yang, D. 2015. Savings in Transnational Households: A Field Experiment among Migrants from El Salvador. *Review of Economics and Statistics*, 97(2), 332-351.

- Banerjee, Abhijit V. 1992. A simple model of herd behavior. *Quarterly Journal of Economics*, 107(3), 797-817.
- Bertrand, M., Luttmer, E. F. P., & Mullainathan, S. 2000. Network effects and welfare cultures. *Quarterly Journal of Economics*, 115(3), 1019-1055.
- Bikhchandani, S., Hirshleifer, D. & Welch, I. 1992. A theory of fads, fashion, custom, and cultural change in informational cascades. *Journal of Political Economy*, 100(5), 992-1026.
- Camerer, C., & Weber, M. 1992. Recent developments in modeling preferences: Uncertainty and ambiguity. *Journal of Risk and Uncertainty* 5, 325-370.
- Candelo, N., Croson, R. & Eckel, C. 2012. Are immigrants risk loving? CBEES working paper.
- Charness, G. & Gneezy, U. 2003. Portfolio choice and risk attitudes: an experiment. *Economic Inquiry*, 48(1), 1465-7295.
- Chiswick, B., & Miller, P. 1996. Ethnic networks and language proficiency among immigrants. *Journal of Population Economics* 9, 19-35.
- Docquier, F., & Marfouk, A. 2006. International Migration by Education Attainment, 1990–2000. In *International Migration, Brain Drain and Remittances*, ed. Ozden and Schiff. New York, NY: Palgrave Macmillan.
- Docquier, F., Lodigiani, E., Rapoport, H., & Schiff, M. 2011. Emigration and Democracy, World Bank Policy Research Paper No 5557, January.
- Duflo, E., & Saez, E. 2002. Participation and investment decisions in a retirement plan: The influence of colleagues' choices. *Journal of Public Economics*, 85(1), 121-148.

- Duflo, E., & Saez, E. 2003. The role of information and social interactions in retirement plan decisions: Evidence from a randomized experiment. *Quarterly Journal of Economics*, 118(3), 815-842.
- Eckel, C. C., & Grossman, P. J. 2002. Sex differences and statistical stereotyping in attitudes toward financial risk. *Evolution and Human Behavior*, 23(4), 281-295.
- Ellsberg, D. 1961. Risk, ambiguity, and the savage axioms. *Quarterly Journal of Economics*, 75(4), 643-669.
- Gino, F., Shang, J. & Croson, R. 2009. The impact of information from similar or different advisors on judgment. *Organizational Behavior and Human Decision Processes*, 108, 287–302.
- Gibson, J., & McKenzie, D. 2012. “The Economic Consequences of “Brain Drain” of the Best and Brightest: Evidence from Five Countries. *Economic Journal* 122 (560), in press.
- Granovetter, M. S. 1973. The strength of weak ties. *American Journal of Sociology*, 78(6), 1360.
- Granovetter, M. S. 1975. *Getting a job: A study of contacts and careers*. (Second ed.) University of Chicago Press.
- Hanson, G. H. 2006. Illegal immigration from Mexico to United States. *Journal of Economic Literature* 44(4), 869-924.
- Hanson G.H., & Woodruff, C. 2003. *Emigration and Educational Attainment in Mexico*. Mimeo, University of California, San Diego.
- Harrison, G., & List, J. 2004. Field experiments. *Journal of Economic Literature* 42(4), 1009-1055.

- Jasso, G., Massey, D., Rosenzweig M. & Smith, J. 2006. "The New Immigrant Survey 2003 Round 1 (NIS-2003-1) Public Release Data."
<http://nis.princeton.edu>.
- Karlan, D., Mobius, M., Rosenblat, T., & Szeidl, A. 2009. Trust and social collateral. *Quarterly Journal of Economics*, 124(3), 1307-1361.
- Knight, F. H. 1921. *Risk, uncertainty and profit*. New York: Kelley and Millman.
- Leider, S., Möbius, M. M., Rosenblat, T., & Do, Q. 2009. Directed altruism and enforced reciprocity in social networks. *Quarterly Journal of Economics*, 124(4), 1815-1851.
- McKenzie, D., Gibson, J., & Stillman, S. 2013. A Land of Milk and Honey with Streets Paved with Gold: Do Emigrants have Over-optimistic Expectations about Incomes Abroad?, *Journal of Development Economics*, 102, 116-127.
- McKenzie, D., & Rapoport, H. 2007. Network Effects and the Dynamics of Migration and Inequality: Theory and Evidence from Mexico. *Journal of Development Economics*, 84, 1-24.
- Massey, D. S., & Espinosa, K. 1997. What's driving Mexico-U.S. migration? A theoretical, empirical and policy analysis. *American Journal of Sociology* 102, 939-99.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. 2001. Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415-444.
- Mobius, M. M., Niehaus, P., & Rosenblat, T. S. 2005. Social learning and consumer demand. Unpublished manuscript from
<http://trosenblat.surveyor.nber.org/papers/Files/ConsumerDemand/draft.pdf>
- Montgomery, J. 1991. Social networks and labor-market outcomes: Toward an economic analysis. *American Economic Review* 81, 1408-1418.

- Munshi, K. 2003. Networks in the modern economy: Mexican migrants in the U.S. labor market. *Quarterly Journal of Economics*, 118(2), 549-599.
- Plott, C. R., & Zeiler, K. 2005. The willingness to pay-willingness to accept gap, the "endowment effect," subject misconceptions, and experimental procedures for eliciting valuations. *American Economic Review*, 95(3), 530-545.
- Rauch, J., & Trindade, V. 2002. Ethnic Chinese Networks in International Trade. *Review of Economics and Statistics* 84, 116–30.
- Rosenblat, T. S., & Mobius, M. M. 2004. Getting closer or drifting apart?. *Quarterly Journal of Economics*, 119(3), 971-1009.
- Scharfstein, D. & Stein, J. 1990. Herd Behavior and Investment. *American Economic Review*, 80(3), 465-479.
- Schotter, A., & Sopher, B. 2007. Advice and behavior in intergenerational ultimatum games: An experimental approach. *Games and Economic Behavior*, 58(2), 365-393.
- Spilimbergo, Antonio. 2009. Foreign Students and Democracy. *American Economic Review* 99 (1), 528–43.
- Sjaastad, L. A. 1962. The costs and returns of human migration. *Journal of Political Economy*, 70(s5), 80.
- U.S. Census. 2010. U.S. American Fact Finder. U.S. Census Bureau, <http://factfinder.census.gov>
- Wasserman, S., & Faust, K. 1994. *Social network analysis: Methods and applications*. Cambridge University Press.
- World Bank. 2011. *Migration and Remittances Factbook 2011*. Washington, DC.
- Yang, D. 2011. Migrant Remittances. *Journal of Economic Perspectives*, 25(3),

129-152.

TABLE I—COMPARISON OF SAMPLES

Variable	Supply-Dallas		Demand-Mexican Town	
	Mean	Std. Err.	Mean	Std. Err.
Observations	61		95	
Information	75%		80%	
Friend	50%		63%	
Decision	49%		41%	
Friend Decision	25%		27%	
Female	46%	0.06	46%	0.05
Single	56%	0.06	52%	0.05
Age*	40.77	1.60	35.46	1.59
Undocumented	41%		n.a.	
Own House**	31%	0.05	81%	0.04
Children	1.34	0.23	1.09	0.15
Education^	6.85	0.40	8.18	0.53
Income**	35991.80	3384.50	2677.48	389.30

** Significant at the 1 percent level.

* Significant at the 5 percent level.

^ Significant at the 10 percent level.

TABLE II—TIMELINE OF EXPERIMENTS IN THE FIELD

Place	Dallas (First Phase)	Mexico (Second Phase)
Type of Participant	Immigrant from Mexico	Participants in Mexico
Order of Tasks during the Experimental Session	<ol style="list-style-type: none"> 1. Name social network in Guanajuato: identify as family or friends 2. Invest in risky task 3. Decide to pay to send information (or not), generate information 	<ol style="list-style-type: none"> 1. Invest in risky task 2. Decide to pay to receive information (or not) from current immigrant (family or friend) through experimenter, if information is received 3. Invest in risky task again only if the individual paid to receive the information

TABLE III— SUPPLY OF INFORMATION (SENDING INFORMATION TO MEXICO)

Dependent Variable	1 Pay for Sending Information, 0 Otherwise			
	(1)		(2)	
Independent Variables	Marginal Effects		Marginal Effects	
Decision	-0.155	(0.117)	-0.206*	(0.104)
Friend	-0.258**	(0.078)	-0.267**	(0.072)
Friend x Decision	0.291**	(0.096)	0.308**	(0.087)
Female			-0.029	(0.089)
Age			-0.001	(0.004)
Children			0.012	(0.023)
Education			-0.048**	(0.001)
Income			0.001	(0.000)
Own House			-0.174^	(0.094)
Single			0.058	(0.090)
Undocumented			0.219*	(0.090)
U.S. Trips			0.013**	(0.003)
U.S. Difficult			-0.031	(0.115)
Inexact Information			-0.034	(0.044)
Observations	122		122	
AIC	140.61		127.03	

Probability of minimizing loss	0.001
Wald test**	14.12

Notes: Robust standard errors in parentheses and estimated through delta method.

** Significant at the 1 percent level.

* Significant at the 5 percent level.

^ Significant at the 10 percent level.

TABLE IV— DEMAND OF INFORMATION (RECEIVING INFORMATION FROM THE U.S.)

Dependent Variable	1 Pay for Receiving Information, 0 Otherwise			
	(3)		(4)	
Independent Variables	Marginal Effects		Marginal Effects	
Decision	-0.390**	(0.113)	-0.610**	(0.142)
Friend	-0.151	(0.105)	-0.246*	(0.113)
Friend x Decision	0.497**	(0.144)	0.730**	(0.156)
Female			0.059	(0.066)
Age			-0.006^	(0.003)
Children			0.016	(0.032)
Education			-0.025**	(0.009)
Income			0.001**	(0.001)
Own House			-0.103	(0.092)
Single			-0.209*	(0.099)
U.S. Permission			0.391**	(0.139)
U.S. Difficult			0.492**	(0.162)

Observations	95	95
AIC	94.30	93.14
Probability of minimizing loss		0.560
Wald test**		12.41

Notes: Robust standard errors in parentheses and estimated through delta method.

** Significant at the 1 percent level.

* Significant at the 5 percent level.

^ Significant at the 10 percent level.

TABLE V— WEIGHT OF INFORMATION (IMPACT OF INFORMATION ON INVESTMENT DECISIONS)

Dependent Variable: Weight of Information	
Independent Variables	(5) Coefficients
Friend	-0.717 (0.462)
Decision	-1.620* (0.767)
Friend x Decision	1.937* (0.927)
Control Variables	Yes
Observations	74
P-seudo R ²	0.125
AIC	174.31
Left Censored (0)	30
Right Censored (1)	23

Notes: Robust standard errors in parentheses.

** Significant at the 1 percent level.

* Significant at the 5 percent level.

^ Significant at the 10 percent level.

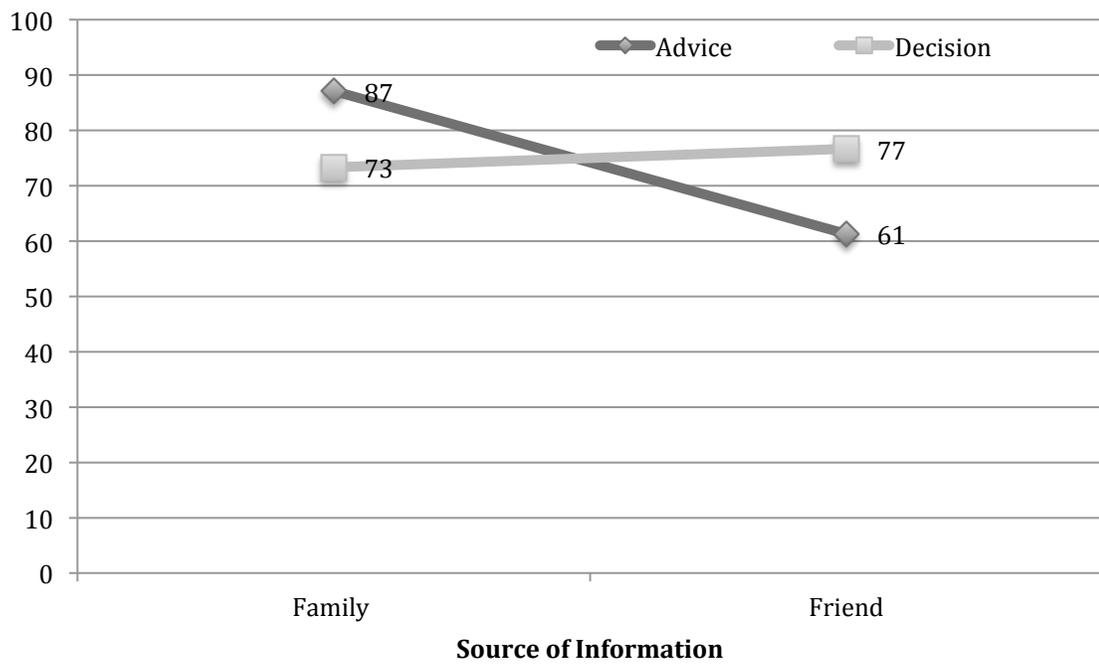


FIGURE I. LIKELIHOOD OF SENDING INFORMATION UNDER EACH EXPERIMENTAL TREATMENT

Notes: This figure displays the percentage of participants in the U.S. who sent information in each experimental treatment.

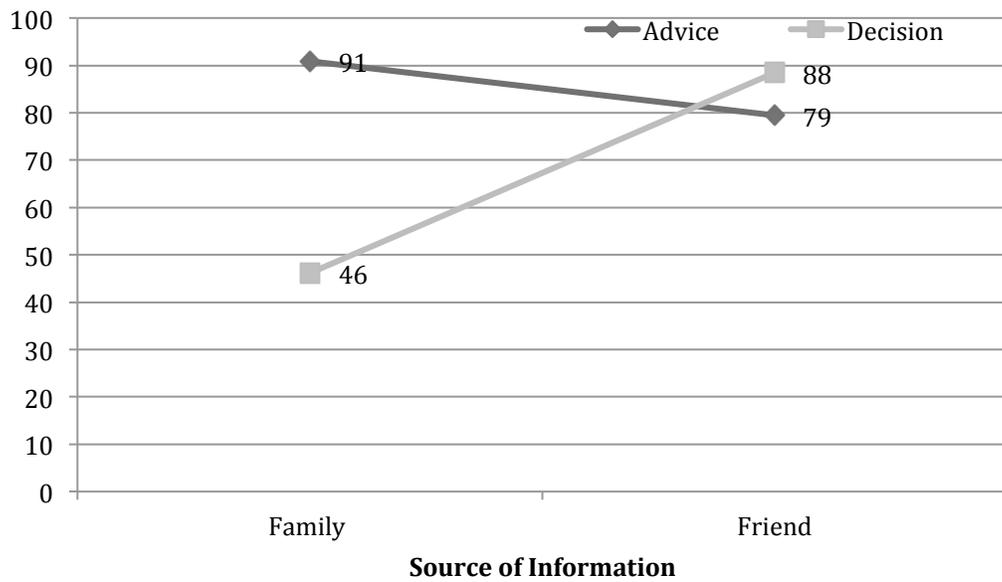


FIGURE II. LIKELIHOOD OF RECEIVING INFORMATION UNDER EACH EXPERIMENTAL TREATMENT

Notes: This figure displays the percentage of participants in Mexico who demanded information in each experimental treatment.

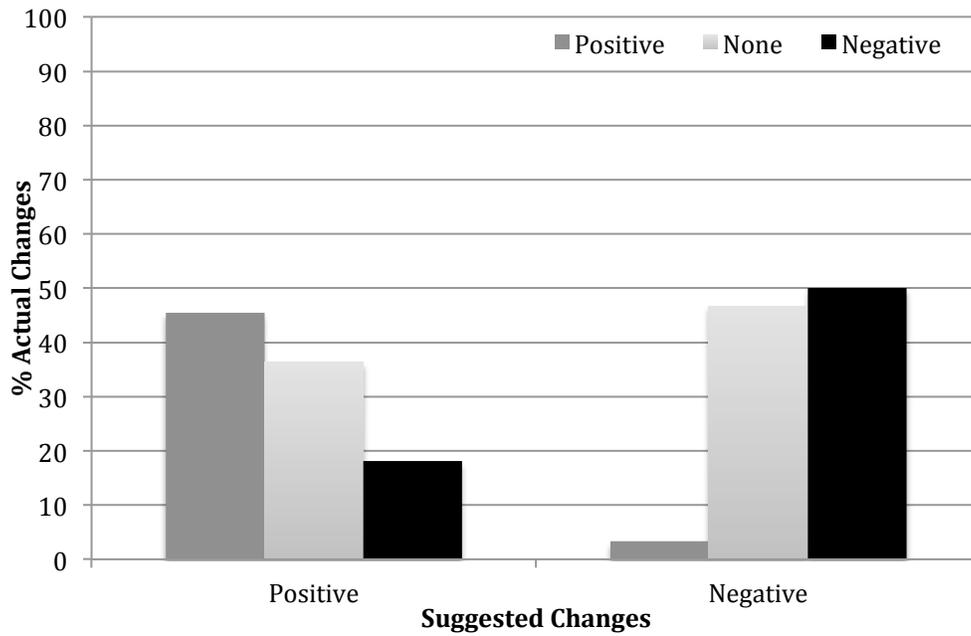


FIGURE III. LIKELIHOOD OF ACTUAL INVESTMENT CHANGES GIVEN SUGGESTED CHANGES

Notes: This figure displays the percentage of actual investment changes given the suggested changes. The suggested changes refer to the difference between the initial decision and the information (advice or decision). The actual change is the difference between the first and second investment decisions.