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Migrant Remittances and Information Flows: Evidence from a Field Experiment

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Migrant Remittances and Information Flows: Evidence from a Field Experiment*

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Abstract

Do information flows matter for remittance behavior? We design and implement a randomized control trial to quantitatively assess the role of communication between migrants and their contacts abroad on the extent and value of remittance flows. In the experiment, a random sample of 1,500 migrants residing in Ireland was offered the possibility of contacting their networks outside the host country for free over a varying number of months. We find a sizable, positive impact of our intervention on the value of migrant remittances sent. Our results exclude that the remittance effect we identify is a simple substitution effect. Instead, our analysis points to this effect being a likely result of improved information via factors such as better migrant control over remittance use, enhanced trust in remittance channels due to experience sharing, or increased remittance recipients' social pressure on migrants.

JEL Codes: F22; J61; O15.
Keywords: information flows; international migration; migrant networks; remittances; randomized control trial.

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1. Introduction

Migrant remittances have grown substantially over the past decades, while showing remarkable resilience in the face of recent economic crisis around the world. The financial flows generated by international migrants are surpassing the national public budget resources of some developing countries, as well as the Foreign Direct Investment and Official Development Aid flows these countries receive. It is therefore of great interest to learn more about the determinants and consequences of such important international financial flows.[1]

One area of study crucial to understanding the determinants of migrant remittances concerns the relationship between migrants and their transnational networks, and how it affects migrant decisions to remit. Often, migrants are part of a transnational household that was separated by considerable geographic distance at the time of migration. Distance between migrants and their networks is likely to bring several consequences that may affect this relationship. For instance, this separation creates asymmetric information, in the sense that neither the migrant nor the network can accurately observe each others' actions. In particular, at most times, the network outside the immigration country cannot accurately know the migrant's occupation, earnings, or standard of living, while migrants cannot perfectly observe their networks' true needs and uses of any financial transfers received.

In this context, it becomes most relevant to examine the role of information flows between migrants and their network outside the country of immigration in determining migrant remittance behavior. One should note that the impact of these information flows on migrant transfers is eminently an empirical question. Indeed, one can conjecture about several possible mechanisms that could affect remittances in different directions. First, communication flows should contribute to an increase in the quantity and quality of information within transnational

[1] See Yang (2011) for a recent literature review on this topic.

households, thereby mitigating asymmetric information problems, which could increase or decrease migrant remittances depending on the direction of earlier informational deficiencies. Second, additional contact between migrants and their networks may stimulate the demand for remittances on the recipients' side, which would cause upward pressure on remittances. Third, the increased communication flows may lower the remittance costs and enhance trust in remittance channels due to experience sharing, which would likely increase remittance flows. A fourth mechanism could be that improved communication between migrants and their networks could actually substitute for remittances, in the sense that contacts by migrants may be interpreted as a form of attention and caring, a role that could alternatively be performed by remittances — in this instance, improved informational flows would have a negative impact on transfers sent by migrants.

In this paper, we examine the role of information flows between migrants and their networks abroad in determining remittance behavior. To do so, we design a randomized control trial under which we vary the magnitude of information flows between migrants and their transnational networks, by distributing international calling credit to a randomly selected treatment group. This field experiment is conducted on a random sample of 1,500 immigrants residing in the greater Dublin area in Ireland.

Our results show that the increased information flows that we generate experimentally have a significant and substantial role in raising the value of remittances sent to existing recipients. However, we find only modest support for the hypothesis that increased contact with non-remittance recipients positively affects the decision to remit to those individuals.

The role of information flows on remittance behavior has been previously examined in the existing migration literature. McKenzie, Gibson and Stillman (2013) describe survey evidence according to which migrants underreport their earnings when they contact their family members in their country of origin, in order to moderate their remittance requests and limit new immigrant arrivals. This finding is consistent with ours, but we further show using experimental evidence

that increasing the quantity and quality of information exchanges between migrants and their transnational networks increases the amount of remittance flows.

There are several recent papers on remittance-related strategic behavior by both migrants and their networks, when their relationship is characterized by asymmetric information. Ashraf, Aycinena, Martinez, and Yang (2011) find, in a randomized field experiment, that savings in migrant-origin households in El Salvador rise when migrants (in the US) are given new financial products that improve migrant control of savings in remittance-recipient households. Consistent with this finding, Batista, Silverman, and Yang (2013) use a lab-in-the-field experiment to show that urban individuals prefer to remit in kind (as opposed to in cash) in ways that express their preference to control recipient use of their transfers. Chen (2013) also finds evidence of non-cooperative behavior related to the use of household resources in migrant households. Finally, Ambler (2013) conducts a lab-in-the-field experiment confirming that remittance recipients use resources differently when migrants can monitor this use. All of this work is consistent with our finding that improving the quantity and quality of information flows, and hence diminishing asymmetric information problems, should increase remittance flows.

An additional strand of related literature emphasizes the importance of transaction costs and trust in the remittance channel as determinants of remittance flows. Aycinena, Martinez, and Yang (2012) conducted a Randomized Control Trial (RCT) among Salvadorian migrants in the Washington D.C. area, showing that lower remittance costs increased both the magnitude and frequency of remittance flows, while Batista and Vicente (2013) also present experimental evidence, for migrants in Mozambique, indicating that lower remittance costs, but also the availability of a more trustworthy mobile banking remittance channel, increase the magnitude and frequency of remittance flows. These results are also consistent with our findings, in the sense that increased communication flows may lower

remittance costs and enhance trust in remittance channels, due to experience sharing between migrants and their network.

Finally, the positive role of information flows on remittance behavior can also be related to better integration of migrants in their networks at the origin country. Chort, Gubert, and Senne (2012) and Batista and Umblijs (2013) emphasize how remittances are used as a reciprocation or insurance mechanism, from which migrants hope to benefit upon return to their home country. This idea is consistent with our findings, in the sense that improved contact between migrants and their networks at origin is likely to deepen migrants' integration in these networks, a mechanism that is complementary to remittances in this framework.[2]

In the remainder of the paper, Section 2 describes our experimental design and the identification strategy. Section 3 presents the data collection procedure, summary statistics, and a discussion of balance at baseline. Section 4 discusses the econometric model and the empirical results. Section 5 concludes.

2. Experimental design and identification strategy

In order to quantitatively assess the role of communication flows in determining the extent and value of remittance flows between migrants and their contacts abroad, we implement a randomized field experiment, which consists of distributing international calling credit to a randomly selected treatment group. The international calling credit could be used to contact any number outside of Ireland, either landline or mobile, with the objective of increasing the communication flows between immigrants in Ireland and their family and friends outside of Ireland. The cost of the international calling credit was about € 0.12 per minute and it was not disclosed to the participants.[3] However, the actual value of the calling credit to the

[2] A related branch of literature examines the role of networks and information on migration behavior. Notable recent examples of this line of work are McKenzie and Rapoport (2007), Beine et al. (2011), Aker, Clemens, and Ksoll (2012), Umblijs (2012), Elsner, Narciso, and Thijssen (2013), Farre and Fasani (2013) and Beam, McKenzie and Yang (2013).

[3] The international calling credit was provided by Swiftcall/Ninetel.

respondent could vary, depending on the destination country. For example, a phone call from Ireland to South Africa could cost between €1.12 and €1.26 per minute with the main Irish operator (Eircom), while the cost of a call to Poland was about €0.39 per minute.[4]

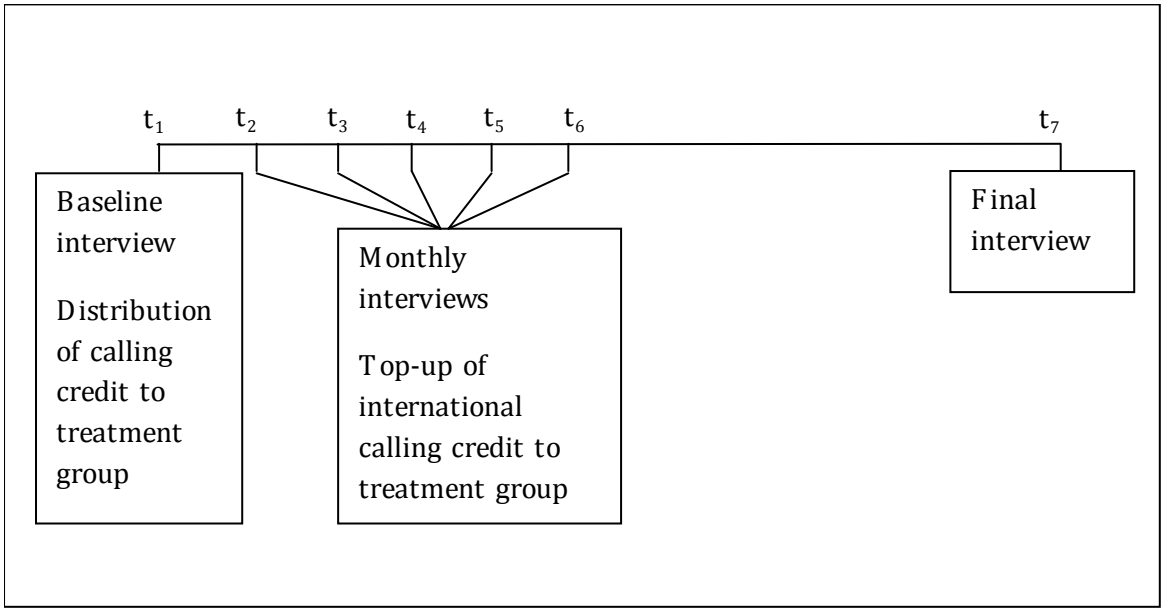
Participants in the experiment were randomly assigned to one of three groups. Respondents in *Treatment group 1* received 90 minutes of free international calling credit every month, for five months. Migrants in *Treatment group 2* received 90 minutes of free international calling credit for three months (every other month). Finally, one-third of the participants were assigned to the *Control group*. Differences in the remittance behavior between the treated and control groups will allow for identification of the intention-to-treat (ITT) effects of our intervention. Differences between the two treatment groups would arise as a result of the treatment frequency.

Upon completion of the baseline survey, participants were contacted by Computer-Assisted Telephone Interviewing (CATI) every month for a period of five months. The aim of the short (about 15 minutes in duration) monthly surveys was to gather information about remittance behavior, contacts with family and friends outside of Ireland, and the main topics of conversation. The monthly top-up of the international calling credit was also provided to the treatment group upon completion of the short monthly survey.

About six to nine months after the fifth monthly survey, the final round of the survey was conducted, with participants interviewed by CATI to elicit information about remittance behavior. Figure 1 outlines the timeline adopted for the various surveys and the intervention.

[4] http://www.eircom.ie/bveircom/pdf/Part2.1.pdf

Figure 1: Timeline



3. Data collection and summary statistics

3.1 Data collection

The data used in our analysis consist of a representative household sample of 1,500 immigrants[5], aged 18 years or older, residing in the greater Dublin area, who arrived in Ireland between the year 2000 and six months prior to the interview date. The baseline sample was collected between February 2010 and December 2011.

Survey activities were conducted by Amarach Research, a reputable survey company with experience conducting research surveys in Ireland, under the close supervision of the authors and their research team.

Eligibility requirements for survey respondents were set to maximize the probability that migrants still kept contacts outside of Ireland (hence the 2000 initial arrival threshold) but were already minimally established in Ireland (for at least six months) so that contacts with their networks abroad could provide useful

[5] Immigrants in our sample are defined as not being Irish or British citizens. British citizens were excluded due to the close historical ties between Ireland and Great Britain, which still entitle British citizens to vote at parliamentary elections, for instance.

information. Due to missing relevant information about eligibility for nine respondents, the final sample size is 1,491.

Random sampling was performed in the following way. First, 100 Enumeration Areas (EAs) were randomly selected out of the 323 Electoral Districts in the greater Dublin area. This selection was performed according to probability-proportional-to-size sampling, in which size is defined as the total number of non-Irish and non-British individuals residing in Ireland, according to the 2006 Census of Ireland. Second, 15 households were selected within each EA using a random route approach.[6] Finally, in the presence of more than one eligible respondent in the household, the individual respondent was randomly selected based on a next-birthday rule. In the absence of the designated respondent, an appointment was set up for a later date. According to the enumeration records, on average, the interviewers had to approach around 100 addresses to obtain one completed interview.

All enumerators were initially trained by the research team and were subsequently supervised by the survey company and, randomly, by members of the research team. Each enumerator had to complete an enumeration report, listing each address approached, the number of call-backs and the outcome of each visit. The enumeration reports were closely inspected and verified by the research team. If the randomization instructions were not followed, interviews had to be replaced.

[6] Each enumerator was given a map of the assigned EA and a pre-selected random starting address within the allocated EA. After a successful interview, enumerators were instructed to exit the house, turn left, count five houses down and approach this new address. A set of standard rules were given in the case of cross-roads, apartment buildings, and cul de sac. In the case of an absent household, interviewers were requested to call back to the address for a maximum of five times, at different times of the day and different days of the week. Each call-back was recorded on the interviewer's report. When an address was exhausted after five call-backs, or deemed ineligible, or in the case of a refusal, the interviewer followed predefined instructions in order to get the next address, namely the address next door to the left when exiting the house.

3.2 Descriptive statistics

Table 1 presents the distribution of the top seven nationalities in our baseline sample. Just over 19% of our sample is of Nigerian origin, while over 10% consists of migrants of Polish nationality. In total, the sample covers 101 nationalities. Table A1 in the Appendix presents the full list of nationalities.

Table 2 presents the summary statistics for a set of basic demographic characteristics of migrants for both treatment and control groups at baseline. The average participant age is 32 and a slight majority of respondents is female. About 42% of the respondents are married and the average length of stay in Ireland is five years. A large majority of respondents have parents living in the country of origin. Survey participants report a high degree of education, with about 70% having a post-secondary degree or higher, and 28% having a secondary school degree. About 75% of the respondents in our sample are employed, compared to 51.4% of the overall population in Ireland in 2011 (ILO). The net monthly income earned by surveyed individuals is around €1,200 per month, with an average of 23 working hours per week. About half of the respondents planned to return to their home country in five years or less at the moment of arrival. However, when asked about their current intentions to move away from Ireland, less than 40% of the respondents intended to leave the host country in the following five years.

The baseline survey also provides extensive information regarding the transnational network of migrants, namely the size of this network, the cost of keeping in contact with it, whether remittances are sent and, if so, the amount remitted. As shown at the bottom of Table 2, on average, respondents are in contact with two people living outside of Ireland and the monthly cost of contacting the network abroad is just below €40. About one-third of the participants in our sample send remittances, with a monthly amount of remittances averaging around €47 (and over €125 if we restrict to positive amounts only).

We do not find any evidence of statistically significant differences between control and treatment groups for any of the described variables at baseline.

4. Estimation strategy

In order to estimate the effect on remittance behavior of increased information flows between migrants and their network outside of the host country, we focus on two main dependent variables - the probability of remitting (extensive margin) and the value of monthly remittances (intensive margin). The design of the RCT and multiple-round survey we conducted allows us to estimate the effect of the treatment in two ways. First, we adopt a single difference approach by analyzing the post-intervention data (rounds 2 to 7 of the survey) and we estimate the following specification:

$$Y_{it} = \beta_0 + \beta_3 T_i + \boldsymbol{X_i}'\boldsymbol{\delta} + \vartheta_t + \varepsilon_{it} \quad (1)$$

where Y_{it} is either an indicator variable taking the value 1 if the migrant remits and 0 otherwise, or the amount of monthly remittances sent by respondent i at time t, where t is the time of the intervention period (round 2 to round 7 of the survey). $\boldsymbol{X_i}$ is a vector of individual baseline characteristics: age, employment status, marital status, gender, number of individuals regularly contacted abroad, average monthly cost of calling network abroad, post-secondary education, whether the parents of the respondent are alive and live outside of Ireland, number of years in Ireland, continent of origin, and enumeration area fixed effects. Finally, ϑ_t represents survey round fixed effects.

Given the availability of pre-intervention data on outcome variables from the baseline survey, we also use a difference-in-differences approach and estimate the following specification:

$$Y_{it} = \beta_0 + \beta_1 T_i + \beta_2 post_t + \beta_3 T_i * post_t + \boldsymbol{X_i}'\boldsymbol{\delta} + \vartheta_t + \varepsilon_{it} \quad (2)$$

where $post_t$ is an indicator variable that takes the value 1 for post-intervention period (rounds 2 to 7) and 0 for the pre-intervention period (round 1). $Y_{it,}$ $\boldsymbol{X_i}$ and ϑ_t

are defined as before. As a further robustness check, we estimate a difference-in-differences specification with individual fixed effects (δ_i):

$$Y_{it} = \beta_2 post_t + \beta_3 T_i * post_t + \delta_i + \vartheta_t + \varepsilon_{it} \quad (3)$$

where the impact of increased communication flows is captured by the β_3 coefficient.

In both specifications, we are interested in identifying the intention-to-treat effect, i.e. the impact of the treatment T_i on remittance behavior variable Y_{it}, which is given by the coefficient β_3. Regular least squares estimates are used to estimate β_3. Standard errors are always clustered at the enumeration area level.

5. Econometric results

5.1 Exogenous variation in communication flows

We begin the empirical analysis by showing that the experimental intervention effectively increased communication flows between migrants and their network abroad. Table 3 reports the impact of the treatment on the extent of the information flows. The monthly CATI interviews reported information about the number of individuals contacted abroad, number of calls made, and conversation topics the migrant discussed with his/her transnational network in the month prior to the interview.[7] On average, respondents in the treatment group contact more people, make a greater number of calls and talk about a larger number of topics regarding both Ireland and the country of residence of the contact person. Overall it seems that the international calling credit was effective in increasing the communication flows between migrants and their network abroad.

[7] These conversation topics include the level of wages, opportunities to find a job, cost of living, regulation for foreign migrants, unemployment benefits and other social benefits, health care system, education system, and taxes both in Ireland and in the country of residence of the contact person.

5.2 Effect on remittances

Table 4 shows differences in average remittance behavior between treatment and control groups using the monthly follow-up survey data. The difference in remittance behavior between groups is positive and statistically significant in various dimensions: a 20% higher share of respondents in the treatment group sends remittances, the value of remittances is more than 50% higher for treated than for control migrants, and the number of remittance recipients is nearly 25% larger.

We investigate further the relationship between increased communication flows and remittances. Table 5 reports the results of the single difference estimation of specification (1) for the extensive margin, i.e. the probability of remitting, using a linear probability model. The dependent variable in this specification is an indicator variable that takes the value 1 if the respondent sends monthly remittances and 0 otherwise. We find that the treatment has a positive and statistically significant impact on the probability of remitting; treated migrants are 5.3% more likely to remit than respondents in the control group — an effect that is robust to the inclusion of demographic and communication controls, as well as survey round fixed effects. The estimated coefficient is still statistically significant, although only at a 10% level, when we introduce enumeration area fixed effects (column 4) and continent of origin fixed effects (column 5).

The strongest results in our analysis arise when we analyze the impact of the increased communication flows on the value of monthly remittances. Column (1) of Table 6 presents the effect that providing additional free calling credit to individuals in the treatment group has on the value of monthly remittances. This impact is positive and highly statistically significant; treated migrants increase the amount of monthly remittances sent to their transnational network by about €40. Adding demographic and communication controls in column (2) slightly increases the magnitude of the treatment impact, without changing its statistical significance. In columns (3)-(5) we progressively add survey round fixed effects (column 3), enumeration area fixed effects (column 4), and continent of origin fixed effects

(column 5). Treated migrants are still found to remit more than respondents in the control group; the average treatment effect in the specification with all controls and fixed effects included is about €45, as shown in column (5).

Overall, we conclude that the increased communication flows produce a strong, significant increase in the amount of remittances sent (intensive margin) and also a smaller increase in the probability of remitting (extensive margin).

5.3 Two treatments

As described in Section 2, the two treatment groups in the experimental intervention differ only in the frequency of the calling credit top-up. Migrants in Treatment group 1 received a monthly calling credit top-up, for a total of five months. Respondents in Treatment group 2 received a calling credit top-up every other month, for a total of three times over five months.

Table 7 reports the results of the estimation of equation (1) differentiating between the two treatments. Both treatments have a statistically significant impact on the amount of remittances, with an estimated average treatment effect between €32 and €39 for treatment 1 and between €45 and €50 for treatment 2, depending on the specification.

Columns (3) and (4) report the impact of the two treatments on the probability of remitting. The two treatments increase the probability of sending remittances, although the effect is no longer significant once we add the control variables and the set of fixed effects.

The lower panel of Table 7 reports the test of equality of the coefficients of the two treatments; we cannot reject the null hypothesis that the two coefficients are equal in any of the specifications, for either the intensive or the extensive margin. We therefore conclude that there is no statistically significant difference between the two treatments and proceed by evaluating the joint impact of the two treatments in the remainder of the analysis.

5.4 Difference-in-differences estimation

The analysis presented so far made use of the post-intervention data, i.e. survey rounds 2 to 7. Using the baseline survey allows us to also adopt a difference-in-differences estimation strategy. Column (1) of Table 8 reports the estimation results for the specification detailed in equation (2). The estimated ITT effect (the coefficient on the interaction between the treatment and the post-intervention indicator) takes a positive and statistically significant value; treated migrants send €43 more remittances than the control group. Column (2) presents the specification outlined in equation (3), i.e. a difference-in-differences specification with individual fixed effects, in addition to the survey round fixed effects already included in column (1). The estimated coefficient of interest keeps a similar positive magnitude with statistical significance at the 5% significance level. Columns (3) and (4) replicate the analysis for the extensive margin. We do not find any statistically significant impact of the treatment on the probability of remitting.

We summarize by stating that the treatment had a strong effect on the intensive margin, while its impact on the extensive margin appears less robust. In the next section, we analyze some of the possible mechanisms at play.

6. Robustness checks

6.1. Is it just a substitution effect?

Are migrants simply substituting the decreased costs of calling with remittances? In order to tackle this potential alternative explanation of our findings, we make use of the baseline information on the average monthly cost of calling. Column (1) in Table 9 reports a single-difference specification similar to equation (1), which now also includes the interaction between the treatment indicator and the monthly average cost of calling.[8] The results hold when we control for this interaction term: treated migrants are found to remit more than migrants in the

[8] The monthly average of the cost of calling is included in the list of communication controls used in all regression specifications.

control group and the estimated coefficient is still statistically significant at the 5% level, while the interaction term between the treatment and the communication costs is not statistically significant. Columns (2) and (3) present the results of the difference-in-differences estimation with the interaction terms with the communication costs, with and without individual fixed effects (columns 2 and 3 respectively). Besides the positive impact of the treatment on the value of monthly remittances, it is worth noting that the triple interaction term between the treatment, the average communication costs and the after intervention indicator is negative and statistically significant at the 1% level. The greater the communication costs between migrants and their network abroad, the lower the impact of the treatment on the value of monthly remittances. This result holds again when we control for individual fixed effects in column (3). We can therefore refute a substitution effect between the decreased costs of communication elicited by the experiment and remittance behavior.

A similar pattern emerges in the analysis of the impact of the treatment on the extensive margin. Treated migrants are about 8% more likely to remit, once we control for the interaction between the treatment and the average cost of calling, as can be seen in column (4). The estimated coefficient is positive and statistically significant at the 5% level. This result also holds when we consider the difference-in-differences analysis and we control for individual fixed effects.

6.2 Interpretation of the findings

The increased communication flows might improve migrant's control over remittance use and enhance trust in remittance channels due to experience sharing. If this were the case, we would expect treated migrants who are regularly employed and who have higher income to send more remittances — the assumption being that these individuals are more likely to have the financial liquidity to send more remittances should they wish to do so. The next two tables test this hypothesis and focus on the interaction between the employment status dummy and the treatment

indicator (Table 10) and, as a further robustness check, the interaction between income and the treatment indicator (Table 11).

The estimation results confirm the hypothesis: treated migrants who are employed tend to remit more, while no effect is found on the probability of remitting. A similar result emerges when we consider the interaction with the income variable. The larger the earned income, the larger the increase in the amount of money remitted by treated migrants. Again, no effect is found on the probability of remitting.

6.3 Follow up surveys and attrition

Migrants are mobile by definition and given the length of the project,[9] selective attrition could be a cause of concern. Respondents in the treatment group received international calling credit at the end of the baseline survey and upon completion of short phone surveys. We therefore anticipated a higher dropout rate in the control group relative to the treatment group.[10] A higher dropout rate in the control group is indeed confirmed by the attrition analysis presented in Table 12. About 50% of the respondents in Treatment group 1 dropped out, compared to 51% of Treatment group 2 and 56% of the control group. The difference in the dropout rates between Treatment group 1 and the control group is statistically significant for each round of the survey. However, the difference in dropout rates between Treatment group 2 and the control group is only (marginally) statistically different in the last round.

To exclude the possibility of selective attrition, we evaluate the difference between treatment and control dropouts relative to the set of observable variables presented in the descriptive statistics. We focus on the participants who dropped out after the first round of the survey. The results of this analysis are presented in

[9] More than one year went by between the first baseline and last follow-up interviews.

[10] In order to counter dropout rates, we provided incentives to participate in the project by offering five lottery prizes with a €100 value and a final lottery prize of €500 that were highly advertised by the enumerators.

Table 13. We find no evidence of selective attrition, as the difference between the control group and each of the treatment groups is never statistically significant, apart from one (marginal) instance. These results are reassuring in terms of the validity of the analysis.

7. Concluding Remarks

Our results show that improving communication flows between migrants and their networks abroad may promote more migrant remittances. In particular, we identify a significant positive increase in the value of remittances sent (which nearly doubles relative to baseline) as a result of experimentally subsidizing communication between migrants and their networks outside of the immigration country. However, we however find only a relatively small (about 25% relative to baseline) increase in the probability of migrants in our sample sending remittances to a larger number of individuals in their network.

Even though our research design did not explicitly test for the mechanisms underlying this finding, our analysis shows that we can confidently exclude that the remittance effect we identify is a simple substitution effect, whereby those with higher subsidized communication costs increase their remittance flows by more. Indeed, we find that larger remittance responses are associated with individuals who are employed and earn higher incomes. This evidence is consistent with the idea that the observed increase in remittances is not a consequence of relaxed budget constraints due to subsidized communication costs, but rather a likely result of improved information - perhaps due to better migrant control over remittance use, enhanced trust in remittance channels due to experience sharing, or increased remittance recipients' social pressure on migrants. While additional research is necessary to distinguish the different mechanisms potentially at play, we believe this paper achieves an important first step in showing in a rigorous experimental way, that information flows do play a role in determining migrant behavior.

The findings of our work highlight the importance of investment in technology that increases the reach and efficiency of communication flows. In addition to other beneficial effects already documented in the literature, such an investment may be valuable to developing countries with substantial emigration stocks, as there may be increased remittances flowing back to these migration countries of origin.

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Table 1: Country of birth of foreign-born individuals in sample.

Nigeria	19.52%
Poland	10.87%
India	6.10%
South Africa	4.83%
Romania	4.23%
Brazil	3.62%
Philippines	3.09%

Table 2: Characteristics of respondents

Variable	*Treatment*	*Control*	*Difference*
	Mean	Mean	T-C (S.E.)
Age	32.80	32.20	0.60 (0.436)
Female	0.55	0.52	0.03 (0.03)
Married	0.42	0.42	0.00 (0.03)
Years in IRL	5.37	5.29	0.09 (0.15)
College	0.69	0.72	-0.03 (0.03)
Secondary	0.28	0.27	0.01 (0.02)
Employed	0.75	0.76	-0.01 (0.02)
Number of children	0.96	0.88	0.08 (0.07)
Parents living in CO	0.84	0.83	0.01 (0.02)
Net monthly income (in Euro)	1,165	1,193	-28 (63.94)
Number of. working hours per week	22.94	24.32	-1.38 (0.96)
Intended to return in 5 years or less at arrival	0.51	0.53	-0.02 (0.02)
Currently intends to return in 5 years or less	0.38	0.36	0.03 (0.03)
Number of individuals contacted abroad	2.29	2.19	0.10 (0.07)
Monthly communication costs (in Euro)	38.75	35.48	3.27 (2.32)
Remitted in previous year	0.36	0.32	0.04 (0.03)
Value of monthly remittances in previous year (in Euro)	47.79	47.62	0.17 (7.68)

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 3: Effect of treatment on communication flows (monthly data)

	Treatment Mean	*Control* Mean	*Difference (S.E)* T-C
Number of individuals contacted abroad	2.84	2.45	0.38*** (0.08)
Nr. of calls per month	17.21	14.71	2.48** (0.91)
Nr of topics talked about per month - host country issues	3.92	2.91	1.01*** (0.14)
Nr of topics talked about per month - abroad country issues	3.97	3.00	0.97*** (0.13)

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 4: Effect of the treatment on remittance behavior (monthly data)

	Treatment Mean	Control Mean	Difference T-C (S.E.)
Remittances sent (indicator variable)	0.26	0.22	0.04*** (0.014)
Value of monthly remittances (in Euro)	71.09	45.96	25.13*** (8.81)
Number of remittance recipients	0.41	0.33	0.08*** (0.03)

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

Table 5: Extensive margin Single difference

	(1)	(2)	(3)	(4)	(5)
VARIABLES	*Monthly remittances – indicator variable*				
Treatment	0.053**	0.055**	0.052**	0.048*	0.043*
	[0.022]	[0.022]	[0.022]	[0.025]	[0.025]
Demographic and Communication Controls	No	Yes	Yes	Yes	Yes
Round FE	No	No	Yes	Yes	Yes
EA FE	No	No	No	Yes	Yes
Continent FE	No	No	No	No	Yes
Observations	2702	2639	2639	2639	2639
Adjusted R-squared	0.003	0.010	0.016	0.043	0.052

*** p<0.01, ** p<0.05, * p<0.1. Demographic and communication controls include employment status, age, post-secondary degree or college dummy, whether parents are alive and live abroad, gender, number of contacts abroad, average monthly cost of calling, length of stay in Ireland. Standard errors are clustered at the enumeration area level.

Table 6: Intensive margin Single difference

	(1)	(2)	(3)	(4)	(5)
VARIABLES	*Value of monthly remittances*				
Treatment	38.082***	40.759***	42.048***	45.389**	44.562**
	[14.160]	[14.683]	[14.945]	[18.387]	[17.869]
Demographic and Communication Controls	No	Yes	Yes	Yes	Yes
Round FE	No	No	Yes	Yes	Yes
EA FE	No	No	No	Yes	Yes
Continent FE	No	No	No	No	Yes
Observations	2702	2639	2639	2639	2639
Adjusted R-squared	0.003	0.014	0.014	0.028	0.038

*** p<0.01, ** p<0.05, * p<0.1. Demographic and communication controls include employment status, age, post-secondary degree or college dummy, whether parents are alive and live abroad, gender, number of contacts abroad, average monthly cost of calling, length of stay in Ireland. Standard errors are clustered at the enumeration area level.

Table 7: Treatment 1 vs. Treatment 2

VARIABLES	(1) *Value of monthly remittances*	(2)	(3) *Monthly remittances – Indicator variable*	(4)
Treatment 1	31.892**	39.335**	0.056**	0.038
	[15.047]	[19.368]	[0.025]	[0.027]
Treatment 2	45.443**	50.487**	0.049*	0.047
	[21.139]	[23.071]	[0.027]	[0.031]
Demographic and Communication Controls	No	Yes	No	Yes
Round FE	No	Yes	No	Yes
EA FE	No	Yes	No	Yes
Continent FE	No	Yes	No	Yes
Test of equality (p-value)	0.5485	0.6241	0.7758	0.7492
Observations	2702	2639	2702	2639
Adjusted R-squared	0.003	0.038	0.003	0.052

*** p<0.01, ** p<0.05, * p<0.1. Demographic and communication controls include employment status, age, post-secondary degree or college dummy, whether parents are alive and live abroad, gender, number of contacts abroad, average monthly cost of calling, length of stay in Ireland. Standard errors are clustered at the enumeration area level.

Table 8: Difference-in-differences

VARIABLES	(1) *Value of monthly remittances*	(2)	(3) *Monthly remittances – dummy variable*	(4)
Treatment* Post	42.522**	38.541**	0.016	0.029
	[16.338]	[16.702]	[0.031]	[0.034]
Post	-29.499	-1.218	-0.043	-0.175***
	[27.019]	[15.823]	[0.046]	[0.038]
Treatment	-2.227		0.025	
	[8.094]		[0.025]	
Demographic and Communication Controls	Yes	No	Yes	No
Round FE	Yes	Yes	Yes	Yes
EA FE	Yes	No	Yes	No
Continent FE	Yes	No	Yes	No
Individual FE	No	Yes	No	Yes
Observations	4089	4160	4089	4160
Adjusted R-squared	0.033	0.006	0.098	0.048
Number of id		1473		1473

*** p<0.01, ** p<0.05, * p<0.1. Demographic and communication controls include employment status, age, post-secondary degree or college dummy, whether parents are alive and live abroad, gender, number of contacts abroad, average monthly cost of calling, length of stay in Ireland. Standard errors are clustered at the enumeration area level.

Table 9: Cost of calling

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Value of monthly remittances			*Monthly remittances - dummy*		
Treatment	57.656**	-5.415		0.079**	0.011	
	[22.460]	[13.525]		[0.031]	[0.041]	
Treatment* Post		66.454***	58.377***		0.088**	0.091**
		[19.097]	[19.807]		[0.041]	[0.046]
Treatment*Avg. cost of Calling*Post		-1.221***	-1.057**		-0.004**	-0.003*
		[0.382]	[0.489]		[0.001]	[0.002]
Treatment* Avg. cost of Calling	-0.734	0.115		-0.002*	0.001	
	[0.518]	[0.428]		[0.001]	[0.002]	
Post		-31.424	5.511		-0.049	-0.187***
		[27.179]	[9.264]		[0.046]	[0.032]
Avg. cost of calling	0.335	0.558**		0.002	0.003***	
	[0.451]	[0.272]		[0.001]	[0.001]	
Demographic and Communication Controls	Yes	Yes	No	Yes	Yes	No
Round FE	Yes	Yes	Yes	Yes	Yes	Yes
EA FE	Yes	Yes	No	Yes	Yes	No
Continent FE	Yes	Yes	No	Yes	Yes	No
Individual FE	No	No	Yes	No	No	Yes
Specification	Single difference	DID	DID	Single difference	DID	DID
Observations	2639	4089	4108	2639	4089	4108
Adjusted R-squared	0.038	0.034	0.005	0.054	0.104	0.048
Number of id			1458			1458

*** p<0.01, ** p<0.05, * p<0.1. Demographic and communication controls include employment status, age, post-secondary degree or college dummy, whether parents are alive and live abroad, gender, number of contacts abroad, length of stay in Ireland. Standard errors are clustered at the enumeration area level.

Table 10: Interaction with Employed dummy

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	*Value of monthly remittances*			*Monthly remittances - Indicator*		
Treatment*Employed		54.413***	57.024***		-0.034	-0.037
*Post		[20.105]	[21.670]		[0.043]	[0.056]
Treatment*Post		2.357	-5.430		0.042	0.059
		[12.648]	[13.438]		[0.045]	[0.054]
Treatment*Employed	36.761	-13.736		-0.015	0.004	
	[26.655]	[16.272]		[0.047]	[0.043]	
Treatment	16.827	7.872		0.054	0.023	
	[16.801]	[13.700]		[0.044]	[0.042]	
Employed	11.042	14.772		0.067	0.075**	
	[20.040]	[13.976]		[0.044]	[0.031]	
Post		-29.538	5.511		-0.043	-0.187***
		[27.105]	[9.264]		[0.046]	[0.032]
Specification	Single difference	DID	DID	Single difference	DID	DID
Demographic and Communication Controls	Yes	Yes	No	Yes	Yes	No
Round FE	Yes	Yes	Yes	Yes	Yes	Yes
EA FE	Yes	Yes	No	Yes	Yes	No
Continent FE	Yes	Yes	No	Yes	Yes	No
Individual FE	No	No	Yes	No	No	Yes
Observations	2639	4089	4160	2639	4089	4160
Adjusted R-squared	0.038	0.034	0.005	0.052	0.098	0.043
Number of individuals			1473			1473

*** p<0.01, ** p<0.05, * p<0.1. Demographic and communication controls include employment status, age, post-secondary degree or college dummy, whether parents are alive and live abroad, gender, number of contacts abroad, length of stay in Ireland. Standard errors are clustered at the enumeration area level.

Table 11: Interaction with Income

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	*Value of monthly remittances*			*Monthly remittances - Indicator*		
Treatment*Income		0.035*	0.036*		-0.000	-0.000
*Post		[0.019]	[0.019]		[0.000]	[0.000]
Treatment*Post		-1.807	-9.567		0.015	0.026
		[15.442]	[16.857]		[0.040]	[0.047]
Treatment*Income	0.041**	0.001		0.000	0.000	
	[0.018]	[0.007]		[0.000]	[0.000]	
Treatment	-8.274	-3.847		0.013	0.021	
	[18.593]	[12.075]		[0.038]	[0.037]	
Income	-0.003	0.003		-0.000	0.000	-0.003
	[0.008]	[0.007]		[0.000]	[0.000]	[0.008]
Post		-14.237	5.477		-0.187***	-0.198***
		[16.738]	[9.817]		[0.036]	[0.033]
Specification	Single difference	DID	DID	Single difference	DID	DID
Demographic and Communication Controls	Yes	Yes	No	Yes	Yes	No
Round FE	Yes	Yes	Yes	Yes	Yes	Yes
EA FE	Yes	Yes	No	Yes	Yes	No
Continent FE	Yes	Yes	No	Yes	Yes	No
Individual FE	No	No	Yes	No	No	Yes
Observations	2445	3771	3829	2445	3771	3829
Adj. R-squared	0.040	0.036	0.006	0.058	0.109	0.052
Number of individuals			1343			1343

*** p<0.01, ** p<0.05, * p<0.1. Demographic and communication controls include age, post-secondary degree or college dummy, whether parents are alive and live abroad, gender, number of contacts abroad, length of stay in Ireland. Standard errors are clustered at the enumeration area level.

Table 12: Attrition

		Control	*Treatment 1*	*Difference to Treatment 1*	*Treatment 2*	*Difference to Treatment 2*
		Mean				
Dropout	3 rounds	0.56	0.51	0.05*	0.51	0.05
				(0.03)		(0.03)
Dropout	4 rounds	0.67	0.60	0.07**	0.63	0.04
				(0.030)		(0.03)
Dropout	5 rounds	0.74	0.65	0.09***	0.71	0.03
				(0.03)		(0.03)
Dropout	6 rounds	0.78	0.70	0.08***	0.75	0.02
				(0.03)		(0.03)
Dropout	7 rounds	0.89	0.82	0.07	0.85	0.04
				(0.02)***		(0.02)*

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

Table 13: Analysis of the dropouts

Variable	*Control*	*Treatment 1*	*Difference to Treatment 1*	*Treatment 2*	*Difference to Treatment 2*
	Mean				
Age	32.35	32.40	-0.04 (0.70)	33.27	-0.92 (0.71)
Female	0.54	0.58	-0.04 (0.04)	0.52	0.02 (0.04)
Married	0.37	0.40	-0.02 (0.04)	0.43	-0.05 (0.04)
Years in IRL	5.27	5.39	-0.12 (0.24)	5.47	-0.20 (0.25)
College	0.70	0.68	0.02 (0.04)	0.67	0.03 (0.04)
Secondary	0.28	0.29	-0.01 (0.04)	0.29	-0.01 (0.04)
Employed	0.77	0.75	0.02 (0.04)	0.76	0.00 (0.04)
Nr. Children	0.83	0.95	-0.12 (0.11)	0.85	-0.03 (0.10)
Parents living in CO	0.80	0.83	-0.03 (0.03)	0.86	-0.06* (0.03)
Monthly Net Income	1,237.21	1,172.48	64.73 (100.96)	1,227.738	9.48 (104.56)
Nr working hours	25.18	23.63	1.55 (1.52)	23.98	1.20 (1.59)
Intentions to stay for less than 5 years at arrival	0.53	0.51	0.02 (0.04)	0.49	0.04 (0.04)
Current intention to return in 5 years or less	0.39	0.39	-0.00 (0.04)	0.38	0.01 (0.04)

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