

WhatsApp Information Videos: Missing the Mark for Hard-to-Reach Vulnerable Populations?*

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Abstract

This study explores whether sending informational videos on public programs through WhatsApp is an effective strategy for increasing take-up rates among vulnerable populations, specifically in the context of a regularization program for undocumented Venezuelan forced migrants in Colombia. The study randomly assigned 1,375 qualified migrants to receive one of three informational videos or a control group. Results indicate that program take-up rates for individuals who received any video were 8 percentage points lower compared to the control group. Additionally, the study evaluated the effectiveness of Iterative-WhatsApp-Surveys (IWS) in collecting data from hard-to-reach populations and found that while IWS had low retention rates relative to in-person surveys, iterative contacts helped to reduce attrition and switching behaviors from non-response to response were common even after iterative contact attempts. The study highlights the challenges of using digital platforms to reach vulnerable populations.

JEL Classification: D72, F02, F22, O15, R23

Keywords: Refugees, Amnesties, program take-up.

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I INTRODUCTION

It is a widely recognized phenomenon that individuals who belong to vulnerable populations, including marginalized or impoverished groups, often display low levels of enrollment in public services that could potentially enhance their welfare (Currie, 2006). This is primarily due to the fact that access to public programs is not automatic, and applicants must satisfy stringent eligibility criteria to qualify, which imposes disproportionate costs and restrictions on socially disadvantaged individuals. Given this context, social media platforms like WhatsApp have emerged as a potential cost-effective solution to disseminate information about public programs and improve take-up rates. Despite the widespread use of WhatsApp, there is scant empirical evidence on its efficacy in enhancing treatment take-up among vulnerable populations.

This study addresses two broad questions: i) can the dissemination of information videos through WhatsApp effectively increase take-up rates of public programs among vulnerable populations that are hard-to-reach, and ii) what is the efficacy of iterative-WhatsApp-surveys in collecting data from these populations? Information videos transmitted through mobile phones can represent a cost-effective means of reaching a large number of vulnerable populations, particularly those who lack access to in-person outreach or distrust the government. Furthermore, data collection through WhatsApp may also represent an efficient method of connecting with highly mobile populations.

The Estatuto Temporal de Migrantes Venezolanos (ETPV), a ten-year regularization program, is the focal point of this study. The program is aimed at providing legal status and benefits to any Venezuelan forced migrant who arrived in Colombia before January 2021. As part of this program, a temporary protection permit (PPT) is issued to serve as an identification and migratory regularization document, thereby granting access to a broad range of services including healthcare, public, and financial services, as well as a work permit.

The registration period for the program commenced from May 2021 and continued until June 2022. Prior to the implementation of the ETPV program, our research team conducted qualitative studies to ascertain the reasons for the low uptake rates of similar past regularization programs offered by the Colombian government to Venezuelan forced migrants.¹ Our research identified three primary limitations that could impede program take-up rates, which have also been extensively recognized in the literature as barriers to the success of public programs in other contexts. These limitations include: (i) low program awareness ([Chetty et al. 2013](#), [Smeeding and O'Connor 2000](#)), (ii) lack of trust in the government due to potential legal problems arising in the legalization process, and (iii) lack of knowledge about the step-by-step application process, including confusion regarding program rules or incentives ([Liebman and Zeckhauser 2004](#)) and psychological aversion to program complexity or the “hassles” involved in claiming ([Bertrand et al. 2006](#)). These lessons provided insights that guided the design of our subsequent experiment.

In the experiment, we employed a randomized control trial design to investigate the impact of three different video treatments sent through WhatsApp on the uptake rates of the ETPV program among 1,375 undocumented Venezuelan forced migrants. The participants were randomly assigned to either a control group or one of the three treatment arms. Each treatment arm consisted of a video designed to target and address one or more of the three limitations identified in our qualitative study. In designing the videos for this study, the research team incorporated behavioral insights in an effort to enhance their effectiveness. Specifically, the team utilized the EAST methodology developed by the Behavioral Insights Team ([BIT 2014](#), [DellaVigna and Linos 2022](#)), which emphasizes the principles of making information *Easy*, *Attractive*, *Social*, and *Timely*.

Specifically, Video 1 was aimed at increasing program awareness and provided a detailed description of the principal benefits associated with the PPT permit, including the three-

¹Further details on this study can be found in [Ibáñez et al. \(2020\)](#).

step application process, simplicity of the program, low costs (it was free), and eligibility. The video was narrated by an actor who resembled a Colombian public officer. Video 2 was designed to increase trust in the program and presented the same information as Video 1 but was narrated by a vulnerable Venezuelan migrant with children who had already applied for the program. The narrator provided a personal account of their experience, highlighting the benefits of the PPT permit and emphasizing the legitimacy and safety of the program. Video 3, narrated by the same vulnerable Venezuelan as Video 2, provided detailed information on the step-by-step application process. The video aimed to reduce confusion and uncertainty by providing clear and concise information on the various requirements and procedures involved in the program application process.

We recruited undocumented Venezuelan forced migrants in-person in the departments of Magdalena and Atlántico on the Caribbean Coast of Colombia. These regions are characterized by a high concentration of migrants, according to the Colombian population census of 2018, and also have low rates of regularization and high levels of vulnerability. To ensure representativeness, the sample was collected from the largest urban center, Santa Marta, and surrounding areas. The program was advertised in areas frequently visited by Venezuelan migrants, and local community leaders were contacted to support the intervention by disseminating the creation of registration points in marginalized communities with a high concentration of undocumented migrants.

The study included individuals who met the following criteria: (i) born in Venezuela, (ii) aged 18 years or older, (iii) have internet access and WhatsApp, and (iv) had not scheduled an appointment to provide biometric data. It is noteworthy that we defined the biometric appointment as the key point in the application process to obtain the PPT permit, as it is the final step before receiving the document. Our goal was to identify the most vulnerable individuals who may not apply for the program without external support. We compared the characteristics of the individuals in our sample to those of

other national surveys of migrants and found that, as intended, our sample consisted of some of the most vulnerable migrants.

In the experiment, individuals in the treatment groups received the video through WhatsApp for the first time 2 months after initial registration and up to four times, with one week interval between contacts. At each contact the treated individuals received the video and a short survey. The control group only received the survey. If an individual reported that they had scheduled their biometric data appointment, they were no longer contacted. We then evaluate the effects of the videos in three main outcomes: registration for the program, initiation of the registration process without completion, and intention to register for the program.

The results of our study indicate that the videos had an adverse effect on the take-up rates of the program. Specifically, the receipt of any video led to a decrease in the probability of intending to register by 12.2 percentage points (p.p.), initiating the registration process by 7.7 p.p., and requesting the PPT permit by 8 p.p. When we examine the effects by type of video, we observe negative coefficients for all treatments. The effects are largest in absolute value for the video that provides detailed information on the step-by-step registration process.

Following the completion of the intervention, we conducted qualitative interviews with treatment recipients to gain insight into the lack of increase in take-up rates observed despite the provision of information videos. A number of potential drivers were identified as potential explanations for these results. First, it was suggested that literacy barriers may have played a role in the observed effects. Specifically, undocumented forced migrants face significant technology literacy barriers, which hinder their ability to fully understand the application process and can lead to confusion and a decrease in program take-up rates. Second, it was suggested that the complexity of the PPT application process may have been a contributing factor. The process requires extensive documentation

and includes multiple steps, which can prove challenging for undocumented migrants to navigate. This complexity can lead to frustration, confusion and ultimately reduced take-up rates. Third, limited engagement was identified as another potential barrier. The information videos lacked the level of interaction and engagement necessary to fully address the needs and concerns of undocumented forced migrants. This can result in a lack of trust in the program or misunderstandings about the application process, which can ultimately decrease program take-up rates. Four, the intervention may have crowded out other registrations alternatives. Some migrants mentioned that it was common for people to pay individuals of local cafes to submit their registrations to the program. It is possible that by giving details on the program individuals in the treatment group may have used these alternatives less, relative to the control group. Fifth, is WhatsApp distrust. Migrants stated that WhatsApp carries a risk of loosing personal information, as well as pointed that links sent through WhatsApp generate distrust because they usually redirect them to scams. Finally, is internet access. Participants pointed that in some cases they could not open the video because they did not have mobile network in their place of residence or did not have enough mobile data or Wi-Fi when they received the video and questionnaire links.

Overall, our results from the experiment suggest that while information videos may have some benefits, they may not be the most effective way to communicate important information about regularization programs to undocumented migrants. Interestingly, most of the barriers that were identified in this study are potentially relevant for other vulnerable populations in developing countries.

We also conducted an analysis on the effectiveness of iterative WhatsApp surveys (IWS) in collecting information to reach vulnerable populations, particularly undocumented forced migrants. Our study revealed five key findings. Firstly, we observed that the attrition rates were exceedingly high when transitioning from in-person interviews to What-

sApp surveys. In particular, when attempting to reach the 1,375 individuals who were initially interviewed in-person through WhatsApp, 50% of the sample was lost. Moreover, the attrition rate was substantially lower for the control group that did not receive any video, relative to those individuals who were treated with any video. Secondly, we found that attrition rates increased as more contacts were attempted. Thirdly, we found that individuals with lower levels of education, busier schedules, fewer social media accounts, and greater levels of government mistrust were more likely to be attrited by the IWS. Lastly, we observed a switching behavior from non-response to response in at least 20% of the sample. Our findings suggest that iterative WhatsApp surveys might not be particularly suited to get information for vulnerable populations that are hard-to-reach in developing countries. While iterative WhatsApp surveys may be a useful tool for gathering information in some contexts, they may not be the most efficient way to gather information from vulnerable populations in developing countries. Other methods, such as in-person interviews, focus groups, or community engagement activities, may be more effective in these contexts.

Finally, for all the individuals recruited and contacted at each stage we explore the share of individuals who opened and reproduced the videos. We observe that the most successful treatment is the first contact, in which more than 90 percent of individuals opened and reproduced more than half of the video. Moreover, individuals who are contacted more times click less on the video and reproduce the video fewer times, possibly due to fatigue or their prior familiarity with the information. We also find that the reproduction rates are lower for the videos in which a Venezuelan migrant from the community serves as the narrator, as opposed to the first treatment that was narrated by an actor resembling a Colombian public officer. Interestingly, having a narrator who is more familiar to migrants and can speak about their own experiences did not seem to increase interest in the information.

Contribution to literature: This paper presents a novel contribution to the literature on public program take-up rates and their determinants. Prior studies have identified information asymmetry (Daponte et al. 1999, Bartlett and Hamilton 2004, Bettinger et al. 2012, Armour 2018), as well as the high cost of learning about program eligibility and application procedures, as major obstacles to enrollment (Chetty et al. 2013). Misinformation also contributes to low take-up rates, creating confusion about eligibility criteria and discouraging individuals from navigating the complexity of application rules (Bhargava and Manoli 2015, Armour 2018, Finkelstein and Notowidigdo 2019). Previous studies have also identified lack of attention (Madrian and Shea 2001) and procrastination (Karlán et al. 2016) as significant barriers to accessing benefit programs. In contrast, our study goes beyond this established literature by examining the role of information in an environment with high government distrust, which is particularly relevant in developing countries where trust in government institutions is generally low.² We also advance this research field by assessing the efficacy of using WhatsApp videos as a tool to increase public program take-up rates in vulnerable populations that are hard-to-reach.

This study also contributes to the growing body of literature examining the impact of informational interventions on individuals' economic decisions.³ Despite previous research exploring the effects of clear program information on public program take-up rates, the results have been mixed. While some studies have shown that such interventions can increase take-up rates (Daponte et al., 1999; Saez, 2009; Jones, 2010; Bhargava and Manoli, 2015; Finkelstein and Notowidigdo, 2019; Michael Hotard and Hainmueller, 2019; Domurat et al., 2021), others have demonstrated that one-time informational interventions are not sufficient (Bettinger et al., 2012; Manoli and Turner, 2014; Guyton et al., 2016). Moreover, some studies have even found that the impact of information can be negligible or even lead to lower take-up rates, depending on the population (Mastrobuoni, 2011;

²For instance, according to data from The Americas Barometer by the LAPOP Lab, Latin American countries exhibit low approval ratings of local governments.

³For a comprehensive review of the literature, see Currie (2006).

[Bettinger et al., 2012](#); [Seira et al., 2017](#); [Allcott and Greenstone, 2017](#); [Armour, 2018](#); [Hainmueller et al., 2018](#)). Recent research has suggested that online and mobile technologies may be effective in reducing information asymmetries for individuals with a high level of technology literacy ([Arteaga et al., 2022](#)), but their effects on the general population may be negligible ([Bahety et al., 2021](#)). Building on this literature, our study provides new evidence on the effect of iterative information sent through WhatsApp on the take-up rates of vulnerable and hard-to-reach populations. However, our findings suggest that such programs may not be effective in delivering information to this subset of individuals.

Our work also contributes by evaluating the effectiveness of iterative WhatsApp surveys in reaching vulnerable populations that are hard-to-reach. Relatively new studies have concluded that online technologies could be an effective low-cost alternative to collect information when recipients have certain level of technology literacy and in zones which are inaccessible through war, conflict, or diseases ([Beam 2023](#), [Heywood et al. 2022](#)). Our study contributes to this discussion by documenting that online surveys thorough social media might not be effective way in collecting information for vulnerable populations that are hard-to-reach and have trust issues such as undocumented forced migrants.

II COLOMBIAN CONTEXT

II. A The PEP Program

The Venezuelan exodus has emerged as one of the most pressing forced migration crises, with more than 4.6 million migrants displaced abroad as of 2022. Colombia has emerged as the principal recipient of migration inflows, and has maintained a compassionate stance toward migrants, offering them full mobility and a number of regularization programs to enable irregular migrants (those lacking proper migration documents) to formalize their status within the country. One of the most extensive initiatives in this regard was implemented in 2018, when the Colombian government provided nearly half a million Venezuelan irregular migrants the opportunity to formalize their migration documents,

obtain a job permit, access safety nets (including comprehensive education and health services for applicants and their families), gain access to the financial sector, and validate their educational credentials from Venezuela. The program, referred to as the *Permiso Especial de Permanencia* (PEP), granted these benefits to migrants for a period of two years, and opened a pathway for them to become permanent residents of Colombia in the long-term. The PEP program had significant impacts on the welfare of migrants, including positive effects on labor income, access to public programs, bank account ownership, and health outcomes (Ibáñez et al. 2022 and Urbina et al. 2023).⁴ Despite the generosity of the program, only around 60 percent of the migrants who were offered it actually applied and received the benefits. Ibáñez et al. (2020) documented that the reasons for migrant's failure to register included a lack of awareness about the program (on how to apply and the program's eligibility requirements), a lack of trust in the Colombian government, and registration bottlenecks.

II. B The ETPV program

In light of the imminent expiration of the PEP program in 2020, the Colombian government opted to scale the regularization of Venezuelan migrants, in a program referred to as the *Estatuto Temporal de Migrantes Venezolanos* (ETPV), which sought to extend the period of eligibility for benefits. Specifically, the ETPV offers a 10-year regularization program to Venezuelan migrants who arrived in Colombia prior to January 2021 (refer to Figure A.1 for a timeline description). The application process entailed several sequential steps, beginning with the registration on an online census known as the *Registro Unico de Migrantes Venezolanos*. Supporting documents, such as medical certificates, grade reports, labor certificates, or property rental agreements, among others, had to be uploaded, indicating proof of arrival to Colombia before January 31st, 2021. Additionally, a Venezuelan ID

⁴Previous research on the effects of the PEP program on hosting communities has explored its impacts on labor market outcomes, and found negligible effects (Bahar et al. 2021); local crime rates, which showed an increase in reports of sexual abuse and domestic violence from Venezuelan migrants (Ibanez et al. 2020); firm development, which resulted in the creation of new mom-and-shop businesses (Bahar et al. 2023); and political outcomes, which showed no observable changes in host voting behavior (Rozo et al. 2023).

document, such as a cedula, passport, or birth registration, was required to substantiate the applicant's Venezuelan origin, along with a photo ID. Subsequently, applicants were required to schedule an in-person appointment, where their biometrics were recorded. Upon completion of the in-person appointment, a permit or visa was granted virtually, and three months later, the physical document known as the *Permiso por Proteccion Temporal* (PPT) was issued to the migrant. The window for registration and attendance of the biometric appointment occurred between May 2021 and June 2022. The complete process is delineated in Figure A.2.

The temporary protection permit (PPT) serves as both an identification and migratory regularization document, providing the migrant with a broad range of benefits, including regular legal status, work permits, access to public health, pension system, education, childcare, financial sector, COVID-19 vaccination, and the potential to validate professional diplomas. Moreover, the PPT allows migrants to enter and exit the country without restriction and serves as proof of permanence in Colombia to fulfill the time requirement for obtaining a residence visa. According to the Colombian migration agency, *Migracion Colombia*, as of October 2022, 2,471,437 Venezuelan migrants had completed the online RUMV census (see Figure A.3 for their geographical distribution).

III THE INTERVENTION

III. A Rationale

Our research team undertook a qualitative investigation to explore the factors that hindered Venezuelan forced migrants from registering for the PEP program.⁵ We identified three key barriers that impeded participation in the program, namely: (i) inadequate awareness of the program; (ii) lack of trust in the government due to possible legal complications that could arise during the legalization process; and (iii) insufficient information on program application procedures (including confusion regarding program rules)

⁵For a comprehensive analysis of the primary findings, please refer to Ibáñez et al. (2020).

and reluctance towards the complexity and difficulties associated with program application. The intervention aimed to overcome these barriers and increase participation in the ETPV program by providing relevant information through cost-effective platforms that could enable the potential scalability of this intervention.

III. B Design

To investigate the effectiveness of the intervention in increasing take-up of the ETPV program among Venezuelan irregular refugees, we randomly assigned a total of 1,375 eligible individuals into four groups of equal size, consisting of one control group and three treatment arms.⁶ The three treatment arms involved the dissemination of a video through WhatsApp, each addressing specific barriers to enrollment, such as lack of program awareness, distrust in the government, and step-by-step details on the program application to reduce registration difficulties.

The intervention design was based on the EAST methodology developed by the Behavioral Insights Team ([BIT 2014](#)), which emphasizes the principles of making information easy, attractive, social, and timely. We designed the videos to simplify the information about benefits, eligibility criteria, and the application process to make it easy to understand. The videos were made more attractive through the use of engaging graphic designs, pop-ups, and images, while a financial incentive was included to encourage viewership⁷. To incorporate the social principle, the videos informed migrants that others in their community had successfully applied to the regularization program.⁸ We also applied the timely rule by strategically timing the messages to reach individuals when they were most receptive, based on insights from previous research with the Venezuelan migrant population.

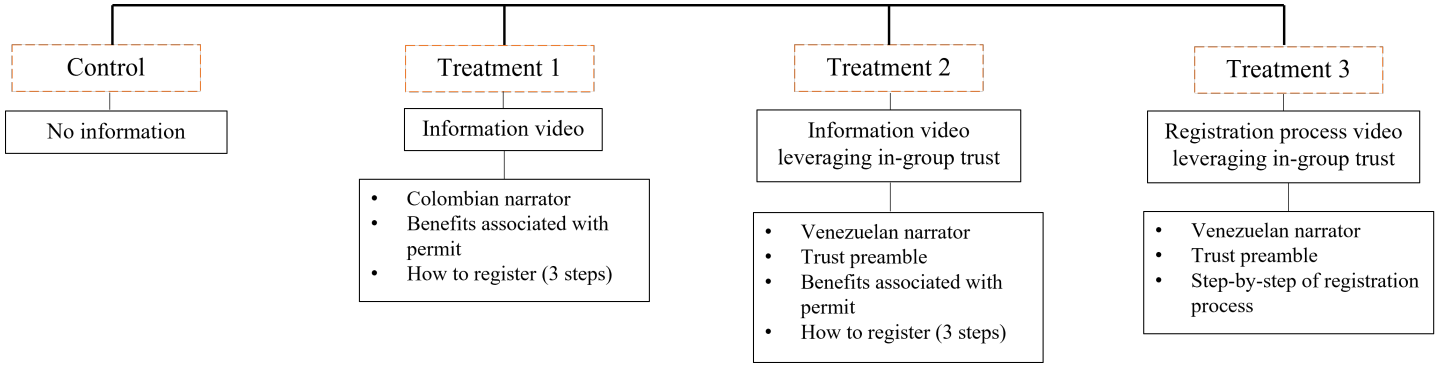
⁶Our initial plan was to recruit 4,180 eligible but unregistered Venezuelan irregular refugees. However, in the field, we were only able to identify and include 1,375 individuals who wanted to participate in the experiment and were undocumented in Colombia, leading to a revision of our pre-analysis plan to reflect the new sample size and estimation strategy.

⁷The value of the incentive was of 10,000 Colombian pesos

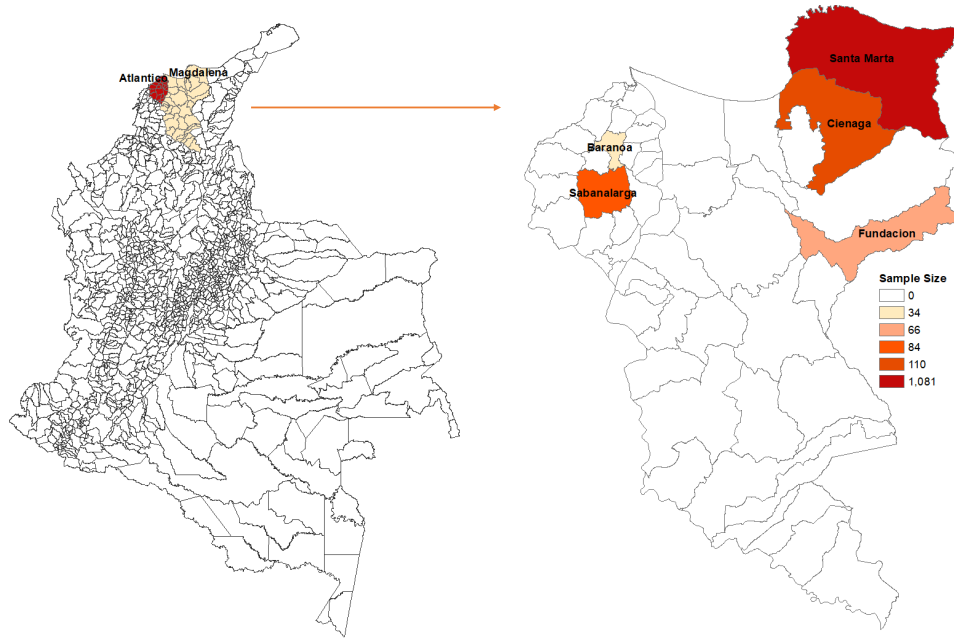
⁸Social norm insights have proven successful in changing individual behaviors ([Allcott 2011](#), [Far 2017](#), [Donna et al. 2007](#)).

Video 1 featured a Colombian actor who portrayed a public officer and provided clear and concise information on program eligibility, costs, and application process (information video). Video 2, narrated by a Venezuelan forced migrant, mother of two kids, who had successfully applied for the program, provided the same information as in treatment 1 but also included anecdotal evidence about their experience applying for the program to build trust and empathy (trust video). Finally, Video 3, which had the same Venezuelan narrator as Video 2, went into more detail about the registration process by presenting a step-by-step guide on how to submit the application online (step-by-step video). The researchers utilized the scripts provided in Appendix [V](#).

Figure 1. The intervention



Panel A. Treatment Arms



Panel B. Geographic Location

Notes: The map on the left depicts the departments where the experiment was carried out, and the map on the right the cities and the sample size of the intervention.

III. C Recruitment and eligibility

In partnership with IPA Colombia, we recruited experiment participants in the department of Magdalena and Atlántico where there is a large presence of migrants and a higher vulnerability of the migrant population (according to the Colombian population census of 2018). The sample was collected to be representative of Santa Marta, one the largest

urban centers, and rural areas, which included individuals located in Ciénaga, Sabana Larga, Fundación and Baranóa (see Panel B of Figure 1). We did not recruit individuals in Barranquilla given implementation costs. The program was advertised in areas that were known to be visited by Venezuelan migrants upon our conversations with migrant organizations, public officials, and members of the community. We mapped those areas and subsequently contacted local community leaders in these places. With their support we opened registration points for the intervention in marginalized communities with a large presence of undocumented migrants. Local leaders helped us in building trust in the intervention in local communities by offering information about the IPA and the researchers involved in the project. We made several modifications in our data collection process to increase trust and boost response rates of undocumented migrants. Two of the most important were that we shared findings of previous related research on the impacts of regularization programs with local leaders and mentioned we were working in a new research project to understand how to support Venezuelan migrants more effectively and we worked with Venezuelan enumerators to increase trust.

In collaboration with IPA Colombia, we sought to recruit participants for our experiment in the departments of Magdalena and Atlántico, which are characterized by a large population of migrants and a higher level of vulnerability among this population, according to the 2018 Colombian population census. To ensure a representative sample, we included individuals located in both urban and rural areas. Specifically individuals where located in Santa Marta, one of the largest urban centers in the region, as well as in Ciénaga, Sabana Larga, Fundación, and Baranóa (refer to Panel B of Figure 1).⁹

The program was advertised in areas frequented by Venezuelan migrants, based on our consultations with migrant organizations, public officials, and members of the community. We mapped these areas and established registration points for the intervention in marginalized communities with a large presence of undocumented migrants, with the

⁹It should be noted that we did not include individuals in Barranquilla due to implementation costs.

support of local community leaders. These leaders played an instrumental role in building trust in the intervention among local communities by providing information about the IPA and the researchers involved in the project.

The study's eligibility criteria were carefully defined to ensure that individuals were eligible for the program and that they were vulnerable. Specifically, the study recruited Venezuelan migrants who were of legal age (18 years or older), residing in any of the selected municipalities, undocumented, and arrived to Colombia before Jan, 1 2021. Additionally, participants had to have access to a phone with WhatsApp. The final sample consisted of 1,375 individuals who met these criteria and agreed to participate in the study.

Table 1 presents descriptive statistics for the sample, providing important insights into the characteristics of the participants. The sample was predominantly composed of young individuals, with an average age of 33.4 years. The majority of the participants were female, accounting for approximately 68% of the sample. Furthermore, most participants reported having minors in their care, with an average of two minors per participant. Individuals in our sample also had low income, with an average monthly income of 250,000 Colombian pesos, which represents 20% of the minimum wage in Colombia. Importantly, nearly all participants reported having no access to health services, highlighting a significant challenge for this population. However, the majority of participants reported having access to the internet for at least half a day, which initially suggested that mobile-based interventions could be a viable approach for reaching this population.

Table 1. Sample Characterization

	Average	SD	Min	Max	N
Age	33.444	11.286	18.00	75.00	1,375
Male [=1]	0.316	0.465	0.00	1.00	1,312
Ed. Level: Primary or Less [=1]	0.191	0.393	0.00	1.00	1,375
Ed. Level: General or diversified school [=1]	0.585	0.493	0.00	1.00	1,375
Ed. Level: Technical school or more [=1]	0.224	0.417	0.00	1.00	1,375
Number of household members	4.682	1.964	0.00	14.00	1,074
Number of minors in charge	2.005	1.419	0.00	8.00	1,289
Personal Income	249,714	250,796	0.00	1,700,000	1,032
Health regime: Subsidized healthcare [=1]	0.053	0.224	0.00	1.00	1,073
Health regime: Contributory healthcare [=1]	0.005	0.068	0.00	1.00	1,073
Health regime: None [=1]	0.942	0.233	0.00	1.00	1,073
Activity spent the most time: Working [=1]	0.461	0.499	0.00	1.00	1,263
Activity spent the most time: Looking for a job [=1]	0.191	0.393	0.00	1.00	1,263
Activity spent the most time: Studying [=1]	0.005	0.069	0.00	1.00	1,263
Activity spent the most time: Doing house chores [=1]	0.324	0.468	0.00	1.00	1,263
Trust in Colombian Government	4.27	1.04	1.00	5.00	1,311
Internet Access: none or less than 1 hour [=1]	0.119	0.323	0.00	1.00	1,215
Internet Access: 1 to 4 hours [=1]	0.213	0.410	0.00	1.00	1,215
Internet Access: All or half of the day [=1]	0.668	0.471	0.00	1.00	1,215
Personal use WhatsApp [=1]	0.766	0.424	0.00	1.00	1,375
Family use WhatsApp [=1]	0.186	0.389	0.00	1.00	1,375
Public use WhatsApp [=1]	0.048	0.214	0.00	1.00	1,375
Facebook or Instagram account [=1]	0.533	0.499	0.00	1.00	1,375
Twitter account [=1]	0.007	0.086	0.00	1.00	1,074
E-mail account [=1]	0.074	0.263	0.00	1.00	1,074
Social desirability index	2.281	1.400	0.00	4.00	1,375

We conducted a comparative analysis of our sample of Venezuelan migrants with those surveyed in recent Venezuelan migrant surveys, including the 2021 Labor Force Surveys (Gran Encuesta Integrada de Hogares, GEIH) and the 2020 Venezuelan Refugee Panel Survey (VenReP) of migrants without any migratory permit. The GEIH is a comprehensive survey that regularly samples households in Colombia to collect data on the labor force and demographic characteristics of individuals, including Venezuelan migrants. The VenReP study, on the other hand, is a representative sample of documented and undocumented migrants who arrived in Colombia between January 2017 and December 2018.

Our analysis, as presented in Table 2, indicates that, as intended, migrants in our intervention are the most vulnerable of all according to measures of income and access to

health services. This is in line with our intentions of going to Magdalena and Atlántico (where migrant vulnerability rates are extremely high) and reaching the most vulnerable undocumented migrants who may not have information on the program or may face other challenges to register for the regularization program.

Table 2. Sample Comparability

	Intervention (1)	GEIH (2)	VenRep (3)	Mean Difference P-value	
				ETPV vs. GEIH (4)	ETPV vs. VenRep (5)
Age	33.444 (11.286)	33.250 (11.810)	32.836 (10.882)	0.640	0.105
Male [=1]	0.316 (0.465)	0.441 (0.497)	0.400 (0.490)	0.000	0.000
Years of education	4.581 (2.051)	7.814 (4.028)	13.043 (2.862)	0.000	0.000
Total income (Log)	0.205 (0.186)	0.542 (0.268)	0.354 (0.213)	0.000	0.000
Health regime: Subsidized [=1]	0.053 (0.224)	0.195 (0.397)	0.016 (0.127)	0.000	0.000
Health regime: Contributory [=1]	0.005 (0.068)	0.097 (0.295)	0.009 (0.095)	0.000	0.169
Health regime: None [=1]	0.942 (0.233)	0.708 (0.455)	0.974 (0.158)	0.000	0.000
Unemployed [=1]	0.191 (0.393)	0.083 (0.276)	0.304 (0.460)	0.000	0.000
Observations	1,375	1,792	2,317	3,167	3,692

Notes: The first column presents the mean and standard deviation for the sample of this study. Column (2) the mean and standard deviation for the Venezuelans who answered the Colombian Labor Force Survey of December of 2021, known as Gran Encuesta Integrada de Hogares, GEIH. Column (3) the mean and standard deviation for the undocumented Venezuelans surveyed in the Venezuelan Refugee Panel Survey of 2020. Columns (4) and (5) present the p-value for the mean difference between samples.

III. D Successful randomization

We examine the internal validity of our experiment in Table 3, which reports the balance test results for the baseline covariates across treatment and control groups. Our findings indicate that there are no statistically significant differences in the observed characteristics between the two groups. In addition, the global significance test suggests that the randomization achieved balance between the treatment arms. These results provide support for the internal validity of our experimental design, and lend confidence to our ability to estimate the causal effect of the intervention on the outcomes of interest.

Table 3. Successful Covariate Balance by Treatment Type

	Control	Information Video	Trust Video	Step-by-step Video	Any Video	P-value			
						(1)-(2)	(1)-(3)	(1)-(4)	(1)-(5)
	(1)	(2)	(3)	(4)	(5)				
Panel A. General Characteristics									
Age	33.130 (11.151)	32.607 (10.847)	32.797 (10.840)	35.251 (12.113)	33.551	0.533	0.691	0.017	0.548
Male [=1]	0.302 (0.460)	0.333 (0.472)	0.298 (0.458)	0.329 (0.471)	0.320	0.386	0.920	0.455	0.533
Ed. Level: Primary or Less [=1]	0.210 (0.408)	0.199 (0.400)	0.165 (0.372)	0.187 (0.391)	0.184	0.722	0.129	0.445	0.277
Ed. Level: General or diversified school [=1]	0.625 (0.485)	0.560 (0.497)	0.620 (0.486)	0.535 (0.499)	0.572	0.082	0.891	0.016	0.081
Ed. Level: Technical school or more [=1]	0.164 (0.371)	0.240 (0.428)	0.214 (0.411)	0.278 (0.449)	0.244	0.013	0.092	0.000	0.002
Number of household members	4.567 (1.972)	4.596 (1.913)	4.768 (1.875)	4.798 (2.098)	4.720	0.865	0.224	0.193	0.271
Number of minors in charge	2.075 (1.387)	2.022 (1.474)	1.950 (1.396)	1.968 (1.423)	1.980	0.634	0.251	0.333	0.293
Personal Income (Sin*)	9.961 (5.671)	9.553 (5.938)	9.329 (5.984)	9.918 (5.789)	9.595	0.425	0.218	0.933	0.387
Health regime: Subsidized healthcare [=1]	0.052 (0.223)	0.077 (0.267)	0.040 (0.196)	0.043 (0.202)	0.053	0.244	0.485	0.599	0.954
Health regime: Contributory healthcare [=1]	0.000 (0.223)	0.004 (0.061)	0.004 (0.060)	0.012 (0.107)	0.006	0.322	0.326	0.077	0.197
Health regime: None [=1]	0.948 (0.223)	0.919 (0.273)	0.957 (0.204)	0.946 (0.227)	0.940	0.187	0.626	0.926	0.666
Activity spent the most time: Working [=1]	0.439 (0.497)	0.455 (0.499)	0.444 (0.498)	0.506 (0.501)	0.468	0.683	0.890	0.089	0.358
Activity spent the most time: Looking for a job [=1]	0.210 (0.408)	0.192 (0.395)	0.187 (0.391)	0.172 (0.378)	0.184	0.570	0.465	0.221	0.295
Activity spent the most time: Studying [=1]	0.006 (0.078)	0.010 (0.098)	0.000 (0.000)	0.003 (0.057)	0.004	0.614	0.166	0.601	0.680
Activity spent the most time: Doing house chores [=1]	0.323 (0.468)	0.327 (0.470)	0.346 (0.476)	0.299 (0.458)	0.324	0.919	0.540	0.506	0.976
Observations	347	341	345	342	1,028	688	692	689	1,375

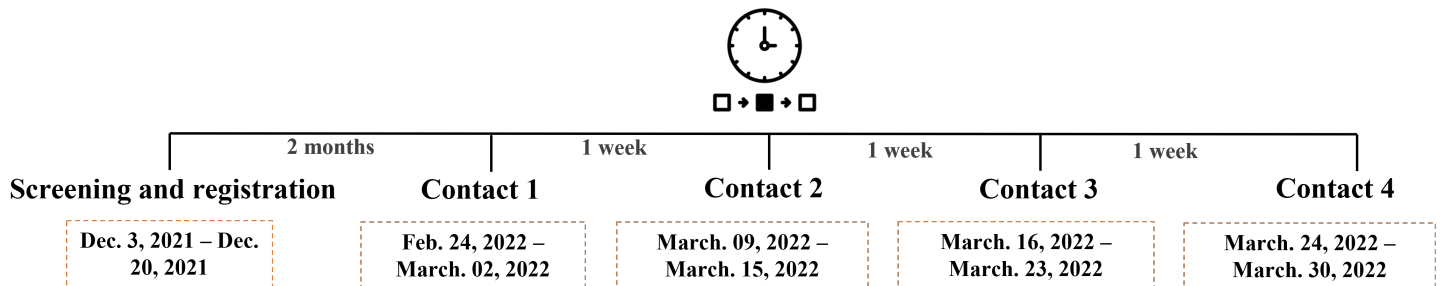
Table 4 (cont'd). Successful Covariate Balance by Treatment Type

	Control	Information Video	Trust Video	Step-by-Step Video	Any Video	P-value			
						(1)-(2)	(1)-(3)	(1)-(4)	(1)-(5)
	(1)	(2)	(3)	(4)	(5)				
<i>Panel B. Trust</i>									
Trust in Colombian Government (SD)	4.341 (0.963)	4.273 (1.053)	4.204 (1.068)	4.256 (1.079)	4.244	0.384	0.082	0.285	0.141
<i>Panel C. Access to Social Media</i>									
Internet Access: none or less than 1 hour [=1]	0.088 (0.284)	0.125 (0.331)	0.111 (0.314)	0.153 (0.361)	0.129	0.145	0.350	0.014	0.053
Internet Access: 1 to 4 hours [=1]	0.259 (0.439)	0.178 (0.384)	0.228 (0.420)	0.184 (0.388)	0.197	0.016	0.373	0.026	0.021
Internet Access: All or half of the day [=1]	0.653 (0.477)	0.697 (0.460)	0.661 (0.474)	0.663 (0.473)	0.674	0.246	0.829	0.790	0.501
Personal use WhatsApp [=1]	0.795 (0.404)	0.754 (0.432)	0.774 (0.419)	0.740 (0.439)	0.756	0.191	0.493	0.084	0.133
Family use WhatsApp [=1]	0.170 (0.376)	0.202 (0.402)	0.177 (0.382)	0.196 (0.397)	0.192	0.277	0.814	0.380	0.372
Public WhatsApp [=1]	0.035 (0.183)	0.044 (0.205)	0.049 (0.217)	0.064 (0.246)	0.053	0.526	0.336	0.072	0.177
Facebook or Instagram account [=1]	0.516 (0.500)	0.537 (0.499)	0.557 (0.498)	0.523 (0.500)	0.539	0.585	0.284	0.843	0.457
Twitter account [=1]	0.007 (0.086)	0.007 (0.086)	0.004 (0.060)	0.012 (0.107)	0.007	0.988	0.546	0.623	0.998
E-mail account [=1]	0.086 (0.281)	0.066 (0.249)	0.069 (0.254)	0.078 (0.268)	0.071	0.390	0.459	0.729	0.415
Social desirability index	0.009 (1.016)	0.017 (0.979)	0.045 (0.974)	-0.072 (1.030)	-0.003	0.917	0.631	0.302	0.848
Observations	347	341	345	342	1,028	688	692	689	1,375

III. E Data collection: iterative-WhatsApp-surveys (IWS)

Subsequent to the in-person registration and randomization of participants, we utilized WhatsApp to initiate contact with each individual up to a maximum of four times, but in some cases fewer, in order to administer surveys. Specifically, we only recontacted those individuals who had failed to respond to previous surveys or who had not successfully completed the registration process for the PPT during earlier contacts. We defined successful completion of the registration to the PPT as either applying for or attending the biometrical appointment, although it is worth noting that the appointment itself was necessary to finalize the application process. However, due to the backlog in government processing times, appointments were often scheduled beyond the time window of our last point of contact. As such, we have assumed that any individual who applied for the appointment had completed the registration process. Notably, it is the act of requesting the appointment itself that the informational videos seek to facilitate. The surveys were conducted in accordance with the timeline presented in Figure 2.

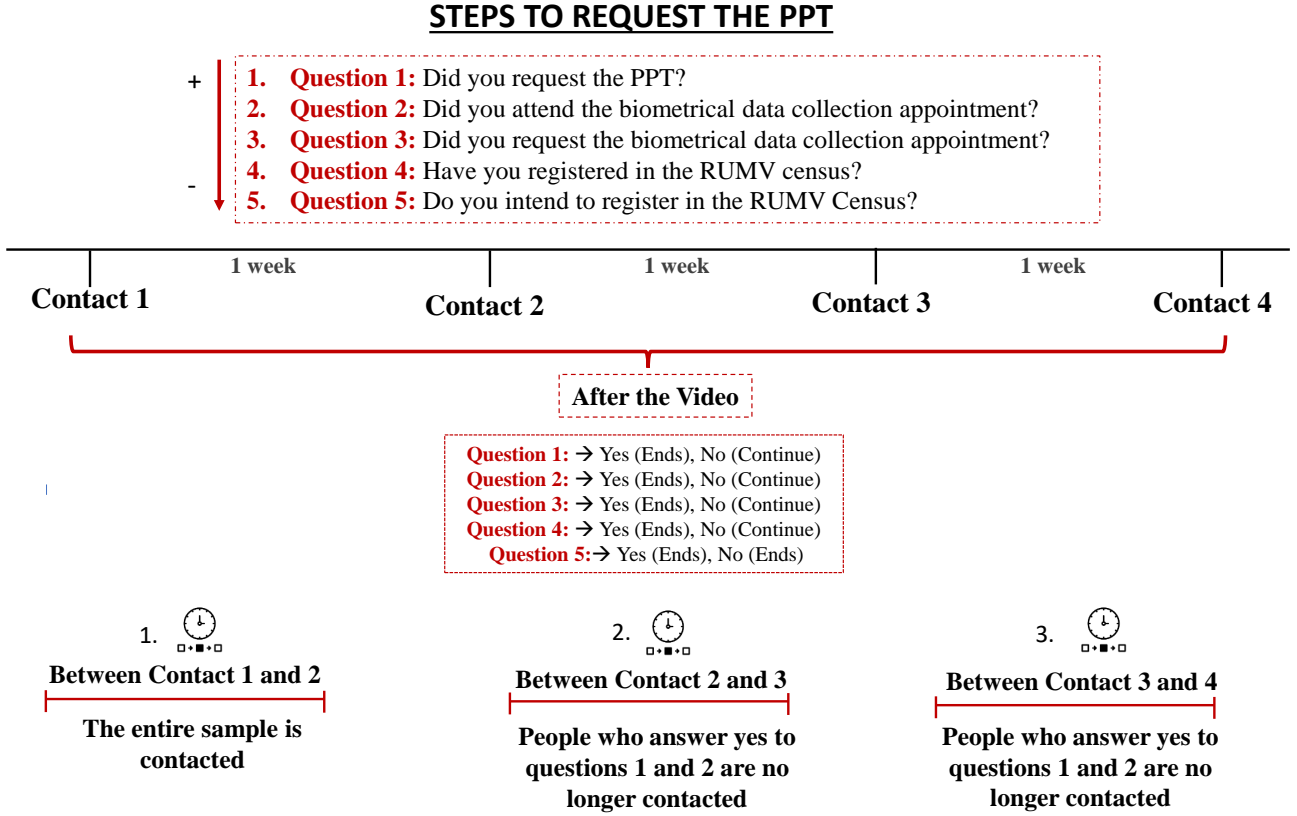
Figure 2. Iterative-WhatsApp-Survey Collection



he WhatsApp surveys administered in this study consisted of a maximum of five questions, but possibly less, focusing on different stages of the PPT application process, namely: (i) receipt of the PPT permit, (ii) attendance of the biometrical appointment, (iii) request for the biometrical appointment, (iv) initiation of the RUMV registration, and (v) intention to register. If a respondent indicated that they had already received the PPT in question (i), they were not contacted again and subsequent questions were not posed as completion

of all previous stages could be inferred. Similarly, if respondents replied in the affirmative to question (ii), they were not contacted further and the remaining questions were not asked, as successful completion of all prior steps could be assumed. This sequential approach was followed to query stages (i) through (v) only if the respondent had answered negatively to all preceding questions. The detailed procedure is illustrated in Figure 3.

Figure 3. Iterative WhatsApp Survey Structure



III. F Results: negative effects of the videos on take-up rates

We estimate the effects of the interventions on three outcomes: intentions to register for the PPT, started registration (indicated by 1 if the individual started the RUMV registration), and actual registration to the PPT program (indicated by 1 if the individual requested, attended the biometric appointment, or received the PPT). Covariate information was collected at screening, and the primary outcome information corresponds to the

last WhatsApp contact with the individual in our sample.

To estimate the effects of the program, we employ a standard ordinary least squares (OLS) specification for all individuals in our study, given by the following equation:

$$Y_i = \alpha + \beta_1 \text{Information}_i + \beta_2 \text{Trust}_i + \beta_3 \text{Step-by-Step}_i + \varepsilon_i \quad (1)$$

where i stands for individual, Y for the outcomes, and Information, Trust, and Step-by-Step, represent the three treatment arms. We also evaluate the effectiveness of the three videos in the outcomes variables pooling all the treatments together to maximize power (as amended in the pre-analysis plan). Note that β_1 , β_2 , and β_3 recover the effects of each of the treatment arms.

Table 4 presents the empirical results of the intervention, utilizing the last recorded response of each individual in our study.¹⁰ Panel A reports the results of the pooled regression for all treatment arms, while Panel B presents the estimates for the specification outlined in equation 1. Surprisingly, we find negative effects of the videos on all three outcomes that we examine. Specifically, Panel A shows that receiving a video reduced the intention to register by 12.2 percentage points (p.p.) (column 3), the probability of starting the registration process by 7.7 p.p. (column 2), and the likelihood of requesting the PPT by 8 p.p. (column 1).¹¹ Interestingly, individuals in the control group registered for the program after the registration for the experiment (when no one had registered before the intervention was implemented), and their mean registration rate was 53.8%. Therefore, the treatment resulted in a reduction of 15.09% in the PPT take-up rates relative to the control group's mean.

When we disaggregate the effects by type of treatment in Panel B, we observe negative impacts for all the estimated coefficients, albeit with less precision. However, the effects

¹⁰It should be noted that out of the 1,375 individuals registered in the experiment, we have excluded 245 individuals from the sample who did not respond to any of the four WhatsApp surveys.

¹¹The results are robust to multiple hypothesis testing as indicated by the q-values reported in brackets.

are largest and always significant for the outcomes of intentions to register and the video that provides detailed information on the Step-by-Step registration process.

Table 4. Intervention Effects on PPT Take-up Rates (Responses from Last Contact)

Indicator Variables	Request PPT (1)	Start Registration Process (2)	Intention to Register (3)
<i>Panel A. General Effect</i>			
Any Video	-0.080** (0.034)	-0.077** (0.034)	-0.122*** (0.030)
q-values	[0.015]	[0.015]	[0.001]
R-squared	0.005	0.005	0.015
<i>Panel B. Dissagregated Treatment Effect</i>			
β_1 : Information	-0.060 (0.041)	-0.057 (0.041)	-0.103*** (0.036)
β_2 : Trust	-0.065 (0.041)	-0.069* (0.041)	-0.098*** (0.036)
β_3 : Step-by-Step	-0.117*** (0.042)	-0.108** (0.042)	-0.168*** (0.037)
R-squared	0.007	0.006	0.019
Control Group Mean	0.538	0.585	0.826
Observations	1,130	1,130	1,130

Notes: Dependent variables: (i) Request PPT is an indicator [=1] if the individual reported having requested the PPT, attended or requested the biometrical appointment in the last survey contact. (ii) Start Registration Process is an indicator [=1] if the individual reported to have started the RUMV Census in the last survey contact. (iii) Intention to register is an indicator [=1] if the individual reported having the intention to start the RUMV census in the last survey contact. The experiment had 1,375 individuals registered. This table excludes from the sample the 245 individuals that did not answer any of the four WhastApp surveys. *** significant at the 1%, ** significant at the 5%, and * significant at the 10%.

To ensure the robustness of our estimates and account for potential biases arising from the different number of contacts and response rates, we re-estimate our main equation (1) using responses only from the first WhatsApp survey. Table 5 presents the results of this analysis. Interestingly, the effects of the program remain negative and are even larger in magnitude than those reported in Table 4.¹² Consistent with our previous findings, the largest effects are observed for the outcome of intentions to register and for the treatment that offers more detailed information on the step-by-step registration process.

Specifically, Panel A of Table 5 indicates that receiving a video reduced the intentions to register by 17.8 percentage points (p.p.) (column 3), the probability of starting the registration process by 10.7 p.p. (column 2), and of requesting the PPT by 9.4 p.p. (column

¹²We use the same sample size as in Table 4 as the first contact maximizes the number of observations.

1).

Table 5. Intervention Effects on PPT Take-up Rates (Responses from First Contact)

Indicator Variables	Request PPT (1)	Start Registration Process (2)	Intention to Register (3)
<i>Panel A. General Effect</i>			
Any Video	-0.094*** (0.027)	-0.107*** (0.030)	-0.178*** (0.032)
q-values	[0.001]	[0.001]	[0.001]
R-squared	0.010	0.011	0.027
<i>Panel B. Dissagregated Treatment Effect</i>			
β_1 : Information	-0.069** (0.033)	-0.095** (0.037)	-0.151*** (0.039)
β_2 : Trust	-0.080** (0.033)	-0.061 (0.037)	-0.139*** (0.039)
β_3 : Step-by-Step	-0.135*** (0.034)	-0.169*** (0.038)	-0.248*** (0.039)
R-squared	0.014	0.018	0.035
Control Group Mean	0.274	0.365	0.786
Observations	1,130	1,130	1,130

Notes: Dependent variables: (i) Request PPT is an indicator [=1] if the individual answered to have attended or requested the biometrical appointment in the first contact. (ii) Start Registration Process is an indicator [=1] if the individual reported to have started the RUMV Census in the first contact. (iii) Intention to register is an indicator [=1] if the individual reported to have the intention to start the RUMV Census in the first contact. *** significant at the 1%, ** significant at the 5%, and * significant at the 10%.

III. G What explains the negative effects of the intervention?

After the intervention was finalized, we called several individuals that participated in our experiment and carried out qualitative semi-structured interviews to attempt to understand why take-up rates did not increased with the information videos. Six explanations came up as potential drivers of the observed effects.

1. Technology literacy barriers: Undocumented forced migrants face technology literacy barriers. Mobile information videos assume a certain level of literacy and familiarity with technology that may not be present in vulnerable populations. This made it difficult for them to understand the videos that were describing a process to be executed online, leading to confusion and frustration, which could have led to a decrease in program take-up rates. For example, many of the experiment participants did not had an email account and had no knowledge of how to receive a confirmation email that was needed to complete the registration process for the PPT

permit.

2. Complexity of application process: the application process for the PPT includes multiple steps and requires documentation, which proved to be difficult for undocumented migrants to follow and provide. This led to confusion and frustration, and ultimately could have reduced the take-up rate of the program.
3. Limited engagement: information videos lack the level of interaction and engagement necessary to fully address the needs and concerns of undocumented forced migrants. This can result in a lack of trust in the program or misunderstandings about the application process, ultimately leading to a decrease in program take-up rates.
4. Crowding out of other registrations alternatives: some migrants mentioned that it was common for people to pay individuals of local cafes to submit their registrations to the program. It is possible that by giving details on the program individuals in the treatment group may have used these alternatives less, relative to the control group.
5. WhatsApp distrust: Undocumented migrants stated that WhatsApp is a private platform in which they should not receive information from public entities, since it carries a risk of losing personal information, as well as pointed that links sent through WhatsApp generate distrust because they usually redirect them to scams.
6. Internet barriers: Participants pointed that in some cases they could not open the video because they did not have mobile network in their place of residence or did not have enough mobile data or Wi-Fi when they received the video and questionnaire links.

Overall, our results from the experiment suggest that while information videos may have some benefits, they may not be the most effective way to communicate important and

complex information to undocumented forced migrants.

IV EFFECTIVENESS OF ITERATIVE-WHATSAPP-SURVEYS (IWS)

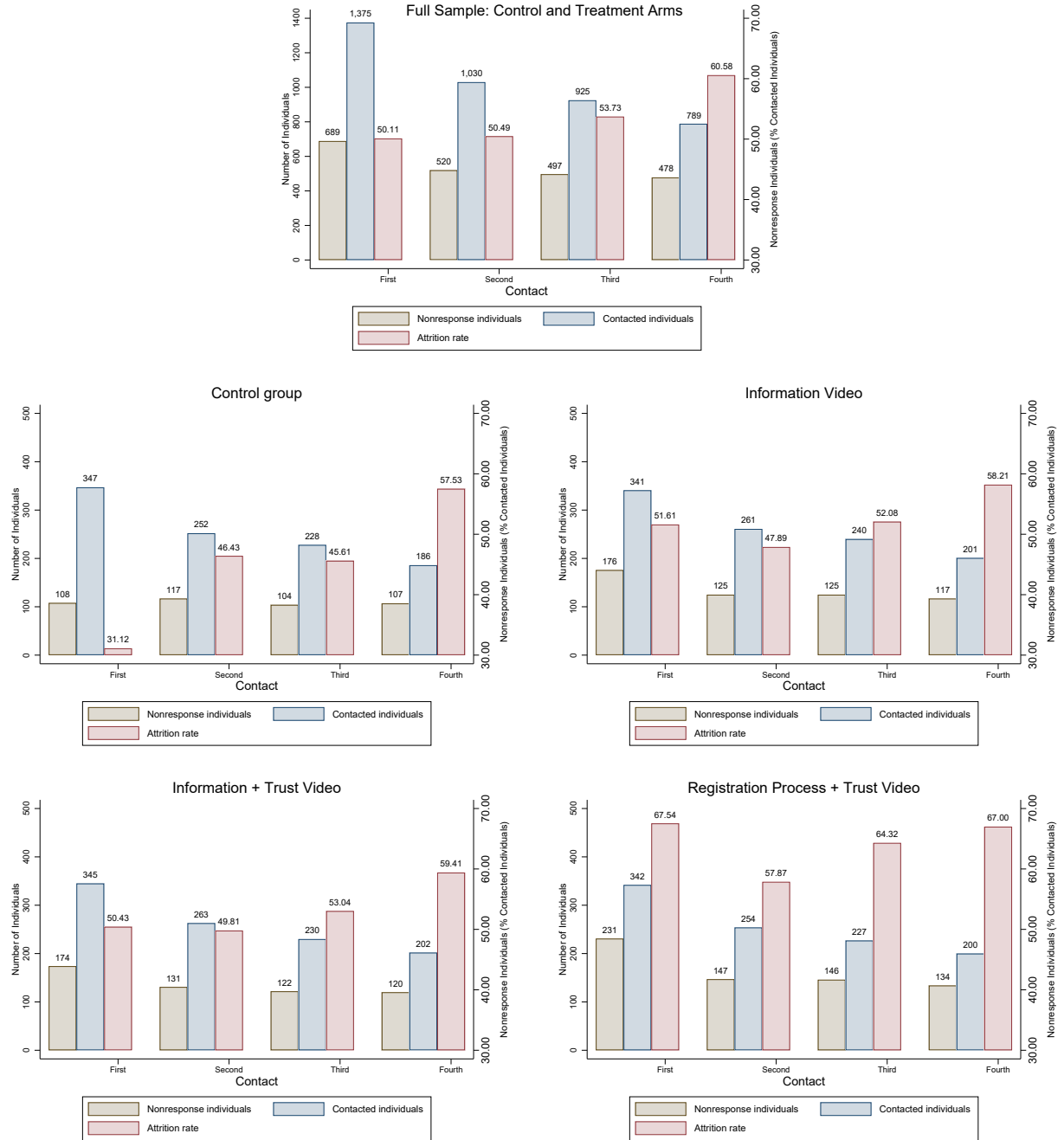
In this section we examine the effectiveness of IWS to collect data of vulnerable populations that are hard-to-reach. In this case study, we used IWS to collect data and send information videos to undocumented forced migrants. This group is notoriously hard to reach due to their precarious situation and lack of visibility to public authorities. In addition, our qualitative study revealed that undocumented migrants in Colombia often harbor a distrust of public institutions and are wary of surveys due to past experiences of fraudulent activity.

IV. A Attrition when switching from in-person to WhatsApp surveys

Attrition rates when switching from in-person to WhatsApp surveys are extremely high. The findings in Figure 4 highlight that attrition rates were extremely high when transitioning from in-person interviews to WhatsApp surveys. The figure shows that half of the sample was lost at the first contact stage of the study when attempting to reach the 1,375 individuals who were previously registered and interviewed in-person.

The video interventions may have contributed to higher attrition rates. The attrition rate varies across the different treatment arms and the control group. Notably, the control group, which did not receive any video intervention, had a lower attrition rate of 31.12% compared to those who were exposed to the information video (51.61%), the information video narrated by a Venezuelan [trust video] (50.43%), and the video that provided a detailed explanation of the registration process narrated by a Venezuelan migrant [step-by-step video] (67.54%). These findings suggest that the video interventions may have contributed to higher attrition rates, which could be due to the additional time and effort required to watch and engage with the videos.

Figure 4. Attrition Rate by Type of Treatment: Full sample



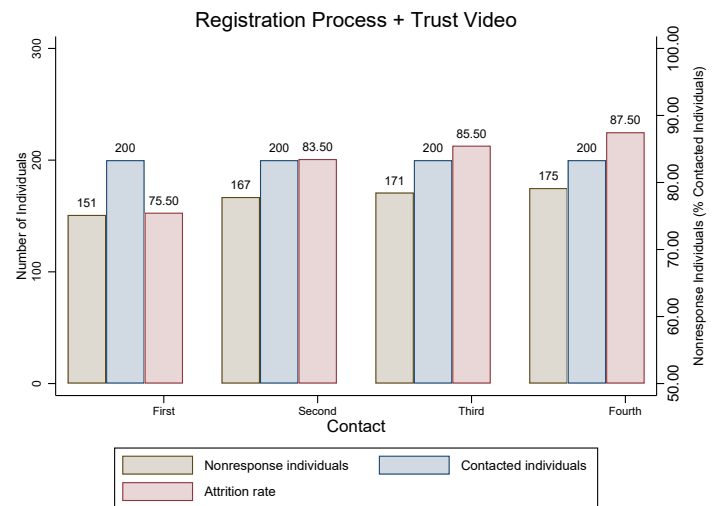
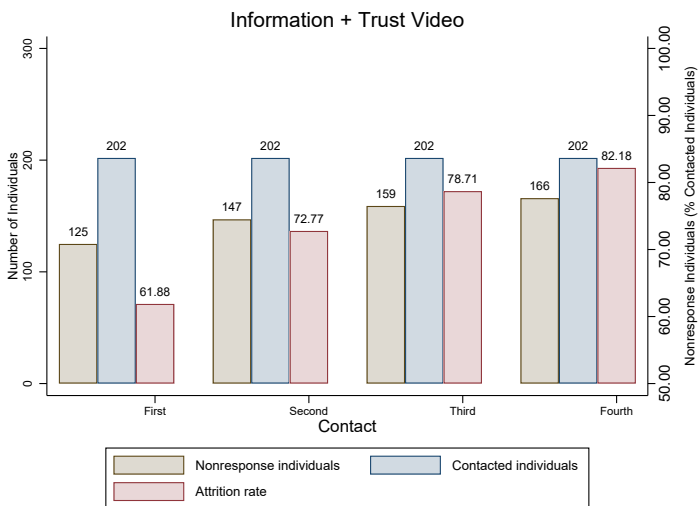
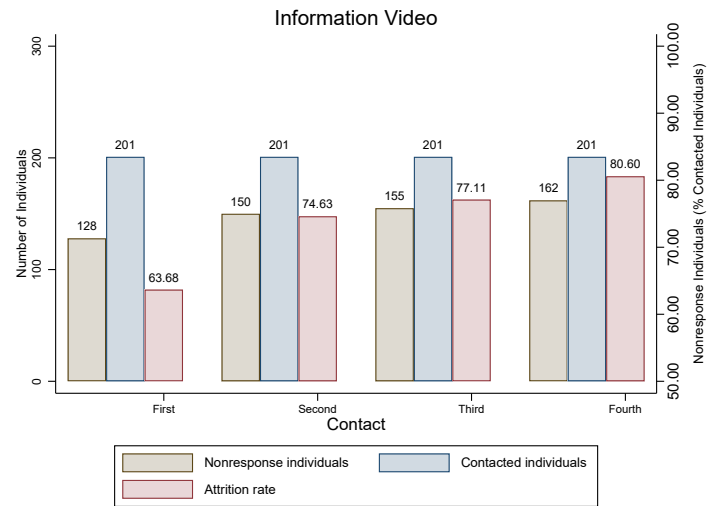
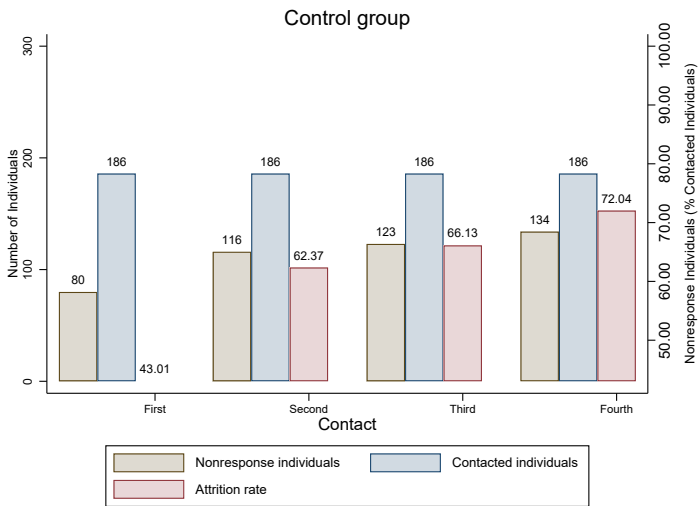
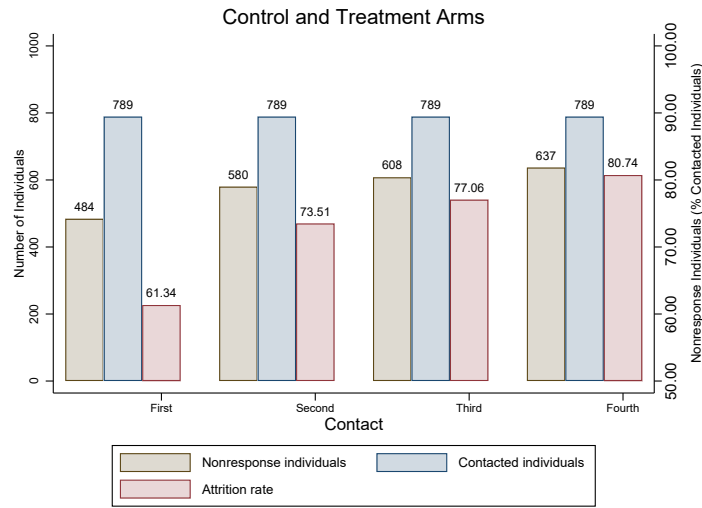
IV. B Lessons from individuals contacted four times through IWS

In this subsection, we focus on a subsample of 789 individuals who were contacted at most four times, while stopping contact with individuals who reported having already applied for the PPT. This approach was taken to maintain a constant sample size and en-

sure the comparability of treatment effects across groups. It is noteworthy that we did not observe any statistically significant differences in the sociodemographic characteristics collected between the full recruited sample of 1,375 individuals and the reduced sample of 789 individuals contacted all four times through WhatsApp, as illustrated in Table B.1. The only exception is the social desirability scale.

When keeping the sample size fixed attrition rates grow as more contacts are attempted. To be specific, we divided the 789 individuals who were contacted four times into treatment groups and examined their attrition rates, as presented in Figure 5. The results suggest that individuals in the control group had the lowest attrition rates compared to those in the treatment arms. Moreover, the treatment arm that provided a step-by-step explanation of the online registration process had the highest attrition rates. In all figures attrition rates increase as more contacts are attempted.

Figure 5. Attrition Rates by Treatment Assignment
Individuals Contacted Four Times



Individuals who are less educated, busier, with less social media accounts, and who mistrust the government tend to be attrited by the IWS. We present a comprehensive analysis of attrition rates in Table 6. The table displays the results of four regression models, each of which regresses a binary variable that takes the value of one if the individual did not respond to the WhatsApp survey at the first, second, third, or fourth contact, respectively, on a rich set of covariates. The results indicate that individuals with lower levels of education, individuals who spend more time working or looking for a job, individuals who have higher levels of mistrust toward the Colombian government, individuals without a Facebook or Instagram account, and individuals with a lower social desirability index were more likely to drop out of the sample. These findings are consistent with the results obtained from the analysis conducted on the complete survey, as reported in Table ??.

Table 6. Characterizing Attrition for Individuals Contacted Four Times

	Attrited Individual [=1]			
	First Contact (1)	Second Contact (2)	Third Contact (3)	Fourth Contact (4)
Age	0.001 (0.002)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)
Male [=1]	0.054 (0.051)	0.011 (0.046)	0.051 (0.044)	0.066 (0.041)
Ed. Level: Primary or Less [=1]	0.160** (0.079)	0.056 (0.071)	0.039 (0.068)	0.029 (0.063)
Ed. Level: General or diversified school [=1]	0.022 (0.070)	-0.019 (0.063)	-0.022 (0.061)	-0.021 (0.056)
Number of household members	0.008 (0.012)	0.004 (0.011)	0.004 (0.011)	0.005 (0.010)
Number of minors in charge	0.001 (0.017)	0.010 (0.016)	0.008 (0.015)	0.003 (0.014)
Personal Income (Sin*)	-0.006 (0.005)	-0.003 (0.004)	-0.004 (0.004)	-0.004 (0.004)
Health regime: Subsidized healthcare [=1]	0.200 (0.297)	-0.185 (0.267)	-0.159 (0.258)	-0.083 (0.239)
Health regime: None [=1]	0.297 (0.284)	-0.223 (0.256)	-0.203 (0.247)	-0.139 (0.228)
Activity spent the most time: Working [=1]	0.264 (0.169)	0.394*** (0.152)	0.302** (0.146)	0.226* (0.136)
Activity spent the most time: Looking for a job [=1]	0.114 (0.171)	0.337** (0.154)	0.267* (0.148)	0.170 (0.137)
Activity spent the most time: Studying [=1]	0.103 (0.381)	0.098 (0.342)	0.007 (0.330)	0.382 (0.306)
Activity spent the most time: Doing house chores [=1]	0.111 (0.168)	0.289* (0.151)	0.196 (0.146)	0.160 (0.135)
Trust in Colombian Government (SD)	-0.017 (0.022)	-0.024 (0.020)	-0.035* (0.019)	-0.029* (0.018)
Internet Access: 1 to 4 hours [=1]	-0.039 (0.090)	0.044 (0.081)	0.049 (0.078)	0.054 (0.073)
Internet Access: All or half of the day [=1]	-0.079 (0.084)	-0.003 (0.076)	-0.010 (0.073)	0.015 (0.068)
Personal use whatsapp [=1]	-0.021 (0.088)	-0.063 (0.079)	-0.042 (0.076)	0.006 (0.070)
Family use whatsapp [=1]	0.061 (0.093)	0.028 (0.084)	0.042 (0.081)	0.080 (0.075)
Facebook or Instagram account [=1]	-0.043 (0.046)	-0.081* (0.041)	-0.062 (0.040)	-0.090** (0.037)
Twitter account [=1]	0.343 (0.285)	0.201 (0.256)	0.193 (0.247)	0.199 (0.229)
E-mail account [=1]	0.002 (0.084)	0.027 (0.076)	-0.004 (0.073)	-0.025 (0.068)
Social desirability index	-0.025 (0.025)	-0.032 (0.023)	-0.027 (0.022)	-0.037* (0.020)
R-squared	0.067	0.065	0.061	0.061
Observations	579	579	579	579
Mean Value Dependent Variable	0.613	0.735	0.771	0.807

Notes: *** significant at the 1%, ** significant at the 5%, and * significant at the 10%.

Nearly 40% of individuals contacted four times never responded to any of the IWS. We present the distribution of possible outcomes of contact in Table 7, categorized by the various cases that could have arisen. The table on the left delineates the 16 possible cases that could have occurred. In this table, a value of “0” indicates that the individual was contacted but did not respond to the survey, while a value of “1” indicates that the individual was contacted and responded to the survey. Notably, we observe that a large majority of individuals who were contacted after the in-person screening process failed to respond to any of the WhatsApp surveys. Furthermore, only about 20 percent of the individuals responded to all of the surveys.

Switching behaviors from non-response to response was observed in at least 20% of the sample. Table 7 reveals a key finding that there are individuals across all possible response scenarios, implying that repeated contact attempts may prove worthwhile even if the individual has not previously responded, as there remains a chance of eliciting a response. To this end, we conducted an exercise combining the possible number of responses for each individual, as detailed on the right side of Table 7. Our analysis indicates that 39.39% of the sample never responded to any of the WhatsApp surveys, whereas 14.87% responded only once, 13.21% responded twice (comprising 7.2% consecutive and 5.97% non-consecutive responses), 13.22% responded three times (8.77% consecutive and 4.45% non-consecutive responses), and 19.31% responded to all contact attempts.

Table 7. Distribution of Possible Contact Combinations

Possible Contact Cases	Number of Individuals	(% of Total)
0 0 0 0	310	39.29
0 0 0 1	22	2.79
0 0 1 0	15	1.90
0 0 1 1	22	2.79
0 1 0 0	30	3.80
0 1 0 1	24	3.04
0 1 1 0	20	2.53
0 1 1 1	41	5.20
1 0 0 0	50	6.34
1 0 0 1	15	1.90
1 0 1 0	8	1.01
1 0 1 1	23	2.92
1 1 0 0	15	1.90
1 1 0 1	13	1.65
1 1 1 0	29	3.68
1 1 1 1	152	19.26
Total	789	100

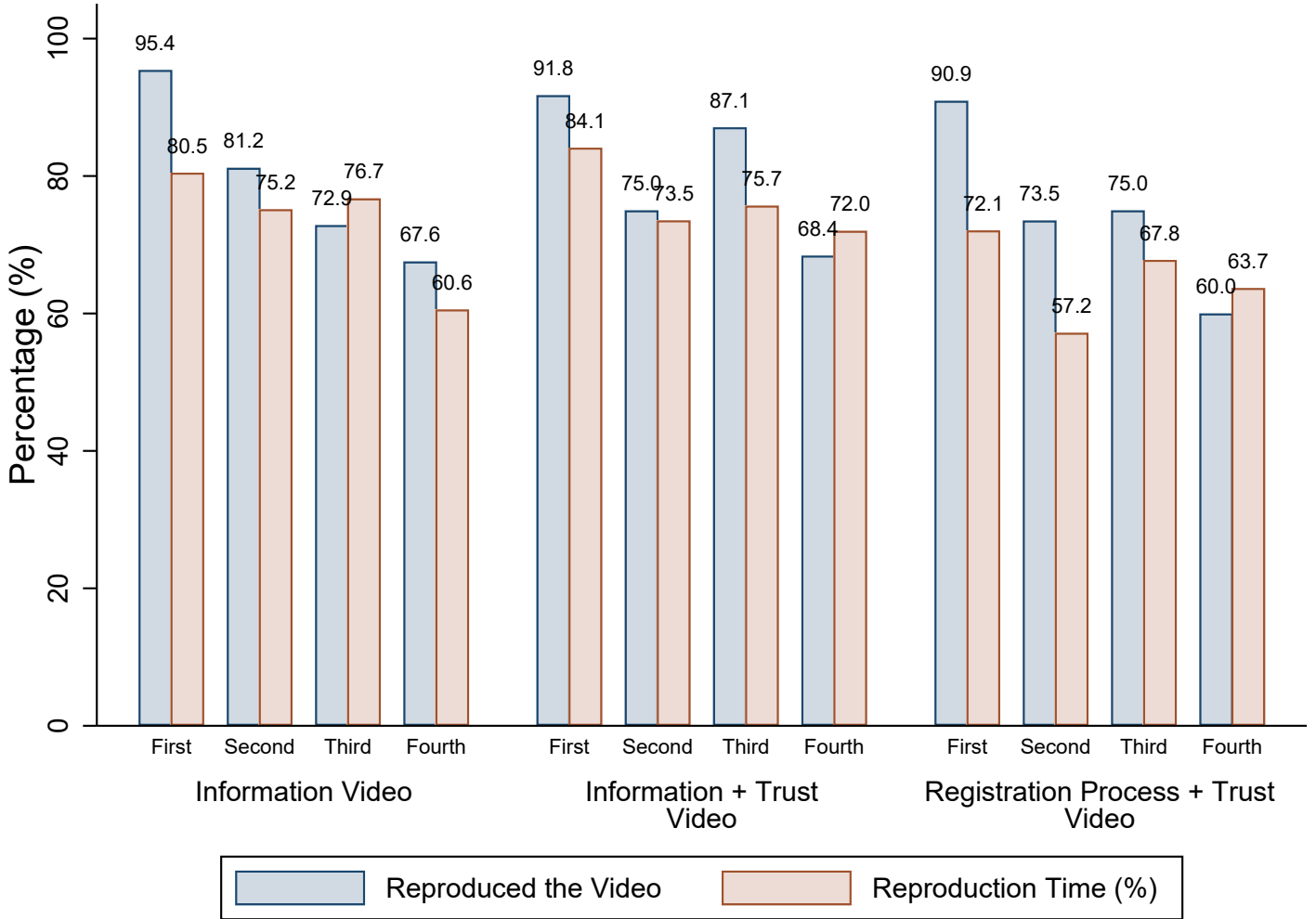
Successfully Reached Possible Combinations	Number of Individuals	(%)
Never	310	39.29
One Time	117	14.82
Two Consecutive Times	57	7.22
Two Non-Consecutive Times	47	5.95
Three Consecutive Times	70	8.87
Three Non-Consecutive Times	36	4.56
Always	152	19.26
	789	

Notes: In the table on the left “0” corresponds to the individuals who were contacted but did not answer the survey and “1” to the individuals who were contacted and completed the survey.

IV. C Success of video reproduction

We present the proportion of individuals who opened and reproduced the video by treatment type for all individuals recruited and contacted at each stage in Figure 6. Our analysis reveals three notable trends. Firstly, the treatment that yielded the highest success rate was the initial contact, where over 90% of individuals opened and reproduced more than half of the video. Secondly, as individuals were contacted more times, their engagement with the video decreased, which could be attributed to fatigue or a prior understanding of the video content. Thirdly, the reproduction rates were lower for videos in which a Venezuelan migrant from the same community narrated the video, in contrast to the first treatment that featured an actor resembling a Colombian public officer. This implies that having a narrator with personal experiences that are more familiar to migrants did not generate additional interest in the video content.

Figure 6. Video Reproduction by Treatment Arm



Notes: The percentage is calculated over the treated sample contacted in each of the treatment arms. The treated sample for the first contact corresponded to 750 individuals, for the second contact to 257 individuals, for the third contact to 176 individuals, and for the fourth contact to 105 individuals.

V DISCUSSION

In this paper we describe the results of an experiment that was carried out in Colombia with the purpose of increasing take-up rates of a regularization program offered to undocumented Venezuelan forced migrants in 2021. We recruited and screened in-person 1,375 individuals who had not applied for the permit and randomly assigned them to three treatment arms and a control group. Each of the treatment arms offered informa-

tion about how to apply to the regularization program but they were targeting different issues. The first video aimed at solving information issues. The second video aimed to increase trust. The third video aimed at increasing trust and solve bottlenecks by offering more detailed information in a step-by-step description of the process. The experiment was successful in randomizing individuals to the different groups.

Surprisingly, we document that all treatments had detrimental effects on the PPT take-up rates. Qualitative semi-structured interviews were conducted with experiment participants, and six potential explanations emerged for the lack of effectiveness of the videos. These included technology literacy barriers, the complexity of the application process, limited engagement, crowding out of other registration alternatives, WhatsApp distrust, and internet barriers. Overall, our results from the experiment suggest that while information videos may have some benefits, they may not be the most effective way to communicate important information about regularization programs to undocumented migrants. Alternative methods such as in-person outreach and education, community engagement, and one-on-one support may be more effective in helping undocumented migrants to understand and take advantage of the available migration reforms. These methods can provide a more personalized approach, build trust, and help undocumented migrants to overcome the barriers that prevent them from participating in these programs.

We also use the data from the experiment to examine the effectiveness of Iterative-WhatsApp-Surveys (IWS) in collecting data for vulnerable populations that are hard to reach such as undocumented Venezuelan migrants. The study found that high attrition rates occurred when transitioning from in-person interviews to WhatsApp surveys. Moreover, attrition rates increased as more contacts were attempted. In conclusion, the study suggests that iterative WhatsApp surveys may not be the most effective way to collect data from vulnerable populations in developing countries. Limited access to technology and internet connectivity, hesitation to share personal information via digital platforms, and limita-

tions in engagement and interaction between researchers and participants were identified as potential factors that may contribute to this. Other methods such as in-person interviews, focus groups, or community engagement activities may be more effective in collecting information from vulnerable populations in developing countries.

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APPENDIX A: Details on the ETPV

Figure A.1. ETPV Registry and Program Roll-out

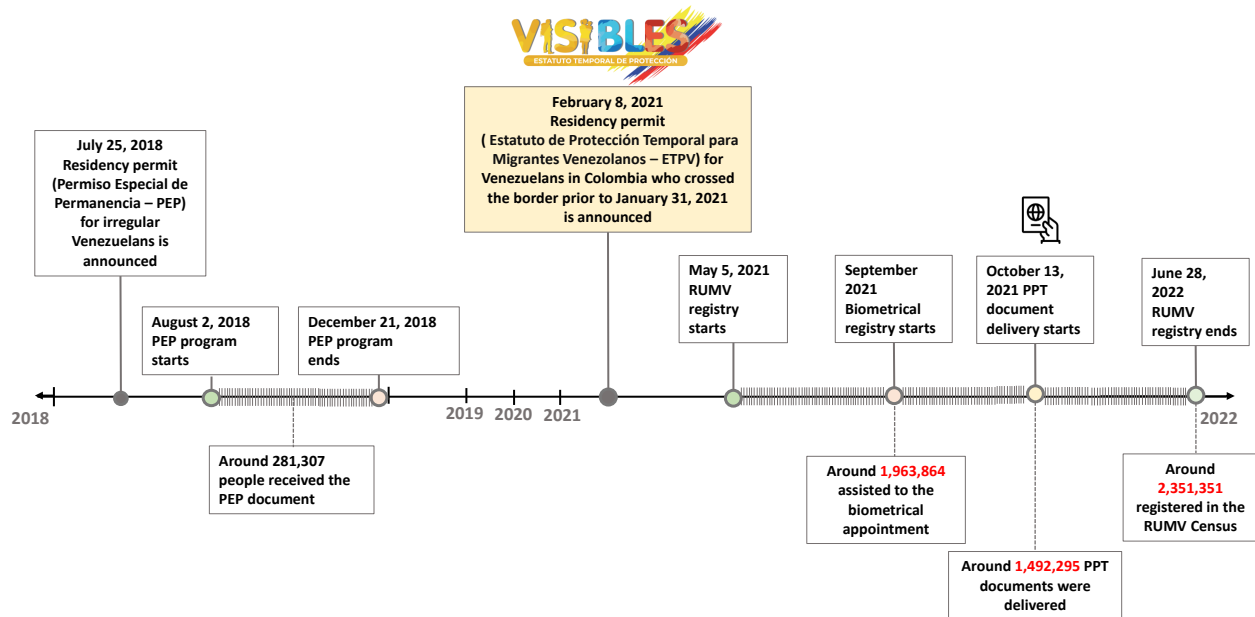
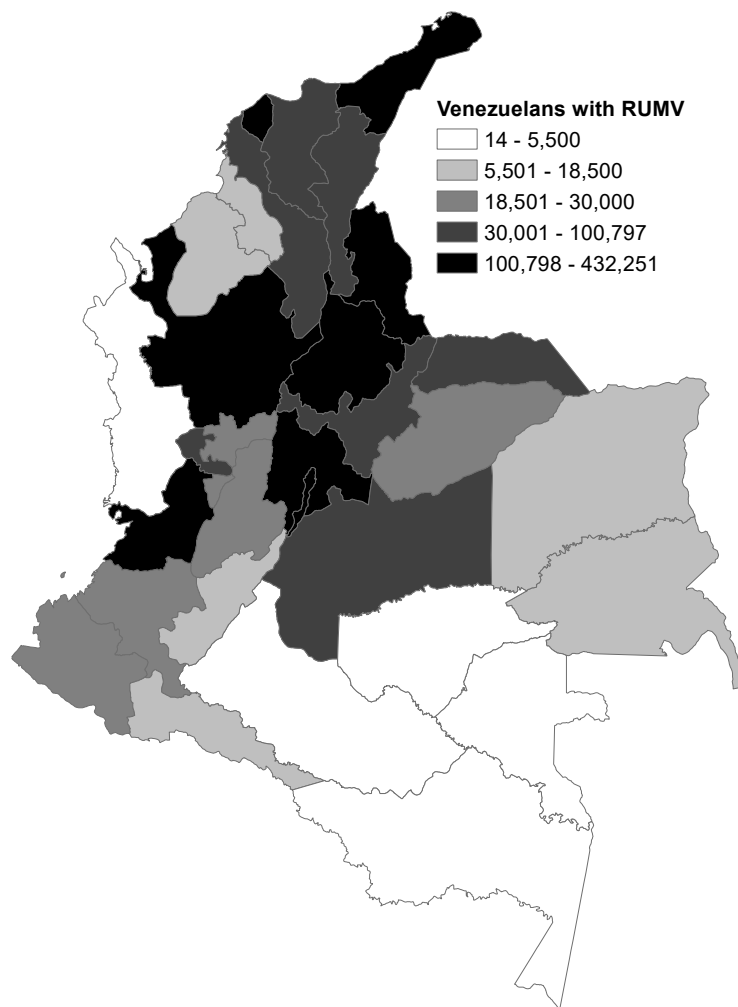


Figure A.2. ETPV Application Process

- 1 RUMV registry required
- 2 Fill out the socioeconomic characterization survey
- 3 Schedule biometric data appointment
- 4 Attend to the biometric data appointment
- 5 Obtention the Temporary Protection Permit document

Figure A.3. Geographical Distribution of Venezuelans registered at the RUMV Census



APPENDIX B: Treatment Scripts

V. A Treatment 1 Script: Information Video

[A Colombian actor resembling a public officer provides the information]



Good morning, I am going to tell you what the Temporary Statute for Venezuelan Migrants is, better known as ETPV. The ETPV is a measure created for the regularization of Venezuelans for 10 years in Colombia. It will allow you to apply for the Temporary Protection Permit, known as PPT, which will give you access to the following benefits:

- Get vaccinated against COVID-19
- Full access to health services for you and your family
- Access to government subsidies through SISBEN
- Access to Any job with an employment contract in Colombia
- Apply for a resident visa to be permanently legal in Colombia
- Validate professional degrees
- Open a bank account and apply for credits
- Enter and leave the country without restriction
- Access to the retirement system

You are eligible to apply to the PPT and It's free. In addition, 1,434,975 Venezuelans have already registered. I am going to explain how to apply, everything is done online and you just have to follow the following 3 steps:

1. Enter the page <https://www.migracioncolombia.gov.co/visibles> to register in the Unique Registry of Venezuelan Migrants, more known as RUMV

2. After registering for the RUMV, you schedule the appointment for the collection of biometric data on the page: <https://agendamigracoletp.emtelco.co/#/>. You must confirm the appointment in your email and attend the biometric data collection in person on the assigned date
3. You will receive the PPT virtually and 3 months later they will deliver it to you physically.

I will tell you what you need to register in the RUMV:

1. Computer with internet
2. Active email
3. Have the following 3 documents scanned:
 - Identity Document: the passport, the Venezuelan ID or the Special Permit of Permanence are valid.
 - Photography with a white background. Remember that you can take it from your cell phone.
 - "Prueba Sumaria": this is a document that proves that you arrived in Colombia before January 31, 2021. It could be a certificate of medical attention, the certificate of your child's grades, the certification of your work, or any similar document that certifies that you were in Colombia before the stipulated date.

Remember that all persons of legal age in your household must register separately. However, when you make the RUMV registration, you will have the option of adding the minors in your charge, the system will schedule the appointment for taking biometric data for children between 7 and 18 years old. Children under 7 do not need an appointment because they have access to benefits with your PPT.

I WILL SUMMARIZE THE STEPS:

- REGISTER IN THE RUMV
- APPOINTMENT FOR THE BIOMETRIC DATA
- OBTAINING THE PPT

DON'T FORGET TO SCAN:

- YOUR PHOTOGRAPH
- YOUR IDENTITY DOCUMENT
- YOUR "PRUEBA SUMARIA"

SAVE YOUR EMAIL AND PASSWORD, YOU WILL RECEIVE YOUR DOCUMENT THERE
Do you need more information? Enter the website of <https://www.migracioncolombia.gov.co/visibles>

V. B Treatment 2: Script Information Video leveraging in-group trust

[A Venezuelan woman with children provides the information, it is sought that the vulnerable migrant feels identified with the person who provides the message]



Good morning, my name is María González, I am a Venezuelan immigrant, I arrived in Colombia irregularly with my children in July 2020, and I am going to tell you what is the Temporary Statute for Venezuelan Migrants, better known as ETPV. The ETPV is a measure created for the regularization of Venezuelans for 10 years in Colombia. It will allow you to apply for the Temporary Protection Permit, known as PPT, which will give you access to the following benefits:

- Get vaccinated against COVID-19
- Full access to health services for you and your family
- Access to government subsidies through SISBEN
- Access to Any job with an employment contract in Colombia
- Apply for a resident visa to be permanently legal in Colombia
- Validate professional degrees
- Open a bank account and apply for credits
- Enter and leave the country without restriction
- Access to the retirement system

You are eligible to apply to the PPT and It's free. In addition, 1,434,975 Venezuelans have already registered. I am going to explain how to apply, everything is done online and you just have to follow the following 3 steps:

1. Enter the page <https://www.migracioncolombia.gov.co/visibles> to register in the Unique Registry of Venezuelan Migrants, more known as RUMV
2. After registering for the RUMV, you schedule the appointment for the collection of biometric data on the page <https://agendamigracoletp.emtelco.co/#/>.

You must confirm the appointment in your email and attend the biometric data collection in person on the assigned date

3. You will receive the PPT virtually and 3 months later they will deliver it to you physically.

I will tell you what you need to register in the RUMV:

1. Computer with internet
2. Active email
3. Have the following 3 documents scanned:
 - Identity Document: the passport, the Venezuelan ID or the Special Permit of Permanence are valid.
 - Photography with a white background. Remember that you can take it from your cell phone.
 - "Prueba Sumaria": this is a document that proves that you arrived in Colombia before January 31, 2021. It could be a certificate of medical attention, the certificate of your child's grades, the certification of your work, or any similar document that certifies that you were in Colombia before the stipulated date.

Remember that all persons of legal age in your household must register separately. However, when you make the RUMV registration, you will have the option of adding the minors in your charge, the system will schedule the appointment for taking biometric data for children between 7 and 18 years old. Children under 7 do not need an appointment because they have access to benefits with your PPT.

I WILL SUMMARIZE YOU THE STEPS:

- REGISTRATION IN THE RUMV
- APPOINTMENT FOR THE BIOMETRIC DATA
- OBTAINING THE PPT

DON'T FORGET TO SCAN:

- YOUR PHOTOGRAPH
- YOUR IDENTITY DOCUMENT
- YOUR "PRUEBA SUMARIA"

SAVE YOUR EMAIL AND PASSWORD, YOU WILL RECEIVE YOUR DOCUMENT THERE

Do you need more information? Enter the website of <https://www.migracioncolombia.gov.co/visibles>

V. C Treatment 3: Script Registration Process Video leveraging in-group trust

[A Venezuelan woman with children provides the information, it is sought that the vulnerable migrant feels identified with the person who provides the message]



Good morning, my name is María González, I am a Venezuelan immigrant, I arrived in Colombia irregularly with my children in July 2020, and I will explain to you step by step how I applied to the Temporary Protection Permit, better known as PPT.

Figure B.1. Registration Process Video step by step

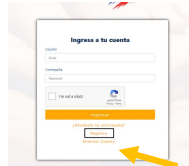
1. I entered the Migración Colombia page: <https://www.migracioncolombia.gov.co/>
2. Click on the button "MAKE THE REGISTRATION IN THE RUMV HERE"



3. Click on the button "MAKE THE REGISTRATION IN THE RUMV HERE"



4. I entered my account and username, if you do not have it, follow the following procedure, select the option REGISTER



5. In the register option, fill in the corresponding information. Remember that you must have an active email and you must have the number of one of the following types of documents: Passport, PEP, identity card, or birth certificate.

Crea una nueva cuenta

Tipo de documento: Número de documento:

Selección:

Primer nombre: Segundo nombre:

Primer apellido: Segundo apellido:

Fecha de nacimiento:

Cursos Electrónicos: Selección:

Validación de Cursos Electrónicos:

Contraseña: Confirmar Contraseña:

Para continuar con el proceso, revise el [DISEÑO DE PRIVACIDAD](#)

☐ En mi rol a robot ☐ Registrarme

6. After filling in the information and selecting to register, you will receive an account activation email to your email, select the activation link and with this you will have your registration done.
7. With your registration done, you will have an active username and password. The username corresponds to the email and password you used to register. Now, you must enter them in the window of the home page, it will appear just as soon as you finish the registration.

(a) Panel A.

(b) Panel B.

8. Once you have entered the username and password, a window will appear for you to review your information and verify that this is the same as the one you entered when registering.

Tus datos de registro

Tipo de documento: Número de documento:

Selección:

Primer nombre: Segundo nombre:

Primer apellido: Segundo apellido:

Fecha de nacimiento:

Cursos Electrónicos:

9. Review the information, select next and enter the data that will be part of your resumé. In the Operation Type box, select the only option that appears, the rest you can easily fill out.

Bienvenido al registro de hoja de vida

Tipo de operación:

Operación:

Fecha de nacimiento del documento: Producción (Ocupación):

Lugar de nacimiento: Departamento (Estado):

Cuáles (Municipios):

10. Select next and enter your requested address and contact information.
11. Select next and register your family group information. Here you can add minors in your charge. If you are only going to make your registration, you do not need to fill out this information. Remember that all persons of legal age must register, it is not a registration per household, but per individual person.
12. Select the following and attach the required documents:

- Upload a document type photograph on a white background
- Upload a photo of the identification document
- Upload the "prueba sumaria". Remember that this is a document that proves that you arrived in Colombia before January 31, 2021. It could be a certificate of medical attention, the certificate of your child's grades, the certification of your work by the employer, or any similar document that certifies that you were in Colombia before the stipulated date. This document is only for people who were irregularly in Colombia before January 31, 2021. If not, you should not upload it

After uploading all the documents, select **UPLOAD DOCUMENTS**

13. When uploading the documents, you will get an ad with the indication to read and accept the terms, select the **I agree box** and then the button **FINISH**
14. Once the registration is finished, a window will appear with the announcement that will refer you to the completion of the Characterization Survey: Select go to the survey



15. When you go to the survey, you will have to fill out the following information (show list on screen):
 - Questions of recognition and permanence
 - Questions about your documentation, ethnicity and identity
 - Questions about your family group
 - Questions about living condition
 - Questions about occupation and study
 - Questions about social security
 - Questions about health
 - Question about reasons for migration
 - Questions about perception of integration
 - Questions about vulnerability ad
16. Once the survey is finished, you will be ready to schedule your face-to-face appointment for biometric registration.

Encuesta Finalizada

La encuesta ha finalizado con éxito, puedes dirigirte a la aplicación de Prerregistro para descargar el certificado correspondiente y agendar tu cita inmediatamente.

(c) Panel C.

(d) Panel D.

Figure B.2. Registration Process Video step by step

17. After completing the survey, you will be directed to the window that allows you to schedule your appointment. There you must select the button, schedule appointment



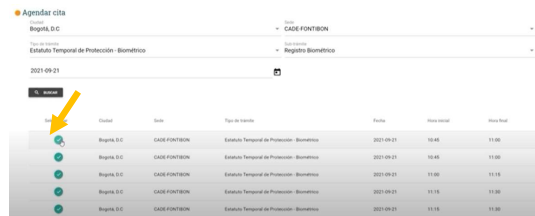
18. You will get an informative notice, after reading it, click accept



19. Fill in the data for the appointment scheduling, you must fill out the following information:

- City: The city in which you are going to carry out the procedure
- Headquarters: The closest office to the place where you live
- Type of Procedure: Temporary Protection Status - Biometric
- Sub-procedure: Biometric Registration
- Date available to attend the appointment

The system will show you the dates and times available to carry out your procedure, select the date and venue that is of interest to you, by clicking the green button to the left of the appointment.



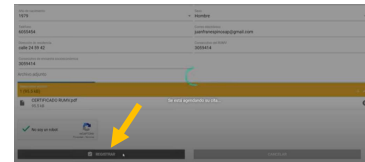
20. When you select the button, a window will appear for you to fill in your personal data.

You must bear in mind that in the consecutive field of the RUMV and in the consecutive field of the socioeconomic survey, you must enter the document number generated in the pre-registration. Which I point out to you in the following image.



21. In the same window, you must upload the certificate of your registration.

22. Click I'm not a robot and follow the safety instructions. Finally, click on register and with this your appointment will be assigned.



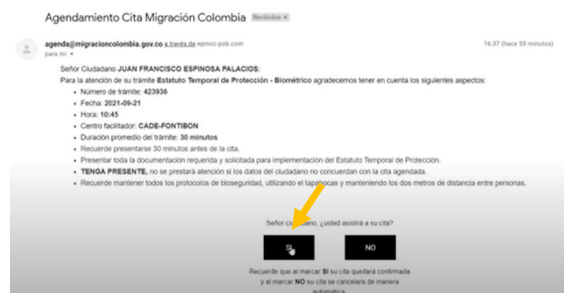
(a) Panel E.

(b) Panel F.

23. Your appointment will be correctly assigned with a number of file



24. Finally, you must check your mail both in received and in unwanted messages, or in spam to see if an email with the confirmation has arrived of the appointment. There you must confirm whether or not you will attend the appointment.



APPENDIX D: MORE ON IWS

Table B.1. Differences between Full Sample and Individuals Contacted Different Times

	Full Sample (1)	Number of Contacted Times			Mean Difference P-value		
		Two (2)	Three (3)	Four (4)	(1)-(2) (5)	(1)-(3) (6)	(1)-(4) (7)
Age	33.444 (11.286)	33.051 (11.373)	33.077 (11.389)	33.056 (11.423)	0.400	0.445	0.172
Male [=1]	0.316 (0.465)	0.319 (0.466)	0.323 (0.468)	0.321 (0.467)	0.860	0.710	0.685
Ed. Level: Primary or Less [=1]	0.191 (0.393)	0.195 (0.397)	0.197 (0.398)	0.202* (0.401)	0.777	0.711	0.064
Ed. Level: General or diversified school [=1]	0.585 (0.493)	0.603 (0.490)	0.602 (0.490)	0.589 (0.492)	0.389	0.424	0.240
Ed. Level: Technical school or more [=1]	0.224 (0.417)	0.202 (0.402)	0.201 (0.401)	0.209 (0.407)	0.192	0.190	0.698
Number of household members	4.682 (1.964)	4.681 (1.976)	4.656 (1.973)	4.655 (1.969)	0.999	0.782	0.372
Number of minors in charge	2.005 (1.419)	1.948 (1.416)	1.942 (1.422)	1.939** (1.415)	0.350	0.319	0.049
Personal Income (Sin*)	9.685 (5.847)	9.620 (5.881)	9.699 (5.836)	9.684 (5.847)	0.814	0.960	0.813
Health regime: Subsidized healthcare [=1]	0.053 (0.224)	0.047 (0.211)	0.049 (0.216)	0.051 (0.220)	0.512	0.681	0.609
Health regime: Contributory healthcare [=1]	0.005 (0.068)	0.005 (0.068)	0.005 (0.072)	0.006 (0.077)	0.999	0.883	0.123
Health regime: None [=1]	0.942 (0.233)	0.949 (0.221)	0.946 (0.226)	0.943 (0.232)	0.529	0.726	0.334
Activity spent the most time: Working [=1]	0.461 (0.499)	0.470 (0.499)	0.482 (0.500)	0.477 (0.500)	0.655	0.331	0.177
Activity spent the most time: Looking for a job [=1]	0.191 (0.393)	0.188 (0.391)	0.185 (0.388)	0.192 (0.394)	0.875	0.725	0.431
Activity spent the most time: Studying [=1]	0.005 (0.069)	0.004 (0.065)	0.005 (0.068)	0.006 (0.074)	0.856	0.988	0.218
Activity spent the most time: Doing house chores [=1]	0.324 (0.468)	0.320 (0.467)	0.311 (0.463)	0.308** (0.462)	0.860	0.522	0.026
Trust in Colombian Government	4.269 (1.041)	4.311 (1.018)	4.318 (1.010)	4.324** (1.016)	0.341	0.281	0.013
Internet Access: none or less than 1 hour [=1]	0.119 (0.323)	0.097 (0.296)	0.098 (0.297)	0.097*** (0.296)	0.113	0.144	0.006
Internet Access: 1 to 4 hours [=1]	0.213 (0.410)	0.227 (0.419)	0.224 (0.417)	0.231** (0.421)	0.458	0.572	0.030
Internet Access: All or half of the day [=1]	0.668 (0.471)	0.677 (0.468)	0.678 (0.467)	0.673 (0.469)	0.689	0.632	0.884
Personal use whatsapp [=1]	0.766 (0.424)	0.754 (0.431)	0.747 (0.435)	0.741*** (0.438)	0.515	0.302	0.001
Family use whatsapp [=1]	0.186 (0.389)	0.193 (0.395)	0.197 (0.398)	0.195 (0.397)	0.664	0.527	0.353
Public whatsapp [=1]	0.048 (0.214)	0.052 (0.223)	0.056 (0.230)	0.063*** (0.244)	0.622	0.381	0.000
Facebook or Instagram account [=1]	0.533 (0.499)	0.571 (0.495)	0.578 (0.494)	0.582*** (0.494)	0.065	0.032	0.000
Twitter account [=1]	0.007 (0.086)	0.006 (0.076)	0.005 (0.072)	0.005** (0.067)	0.662	0.540	0.039
E-mail account [=1]	0.074 (0.263)	0.070 (0.255)	0.073 (0.261)	0.072 (0.259)	0.691	0.915	0.851
Social desirability index	0.000 (1.000)	0.111 (0.938)	0.129 (0.928)	0.126*** (0.924)	0.006	0.002	0.000
Observations	1,375	1,030	925	789			

Notes: Dependent variables: (i) Full Sample corresponded to the individuals registered in the first stage of the intervention. *** significant at the 1%, ** significant at the 5%, and * significant at the 10%.

	Attrited Individual [=1]			
	First Contact	Second Contact	Third Contact	Fourth Contact
	(1)	(2)	(3)	(4)
Age	0.001 (0.002)	0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)
Male [=1]	0.056 (0.040)	0.014 (0.046)	0.052 (0.048)	-0.022 (0.052)
Ed. Level: Primary or Less [=1]	0.217*** (0.061)	0.109 (0.071)	0.178** (0.075)	0.088 (0.080)
Ed. Level: General or diversified school [=1]	0.057 (0.052)	0.034 (0.062)	0.044 (0.066)	0.010 (0.070)
Number of household members	0.005 (0.010)	-0.005 (0.011)	-0.004 (0.012)	0.003 (0.012)
Number of minors in charge	-0.004 (0.014)	-0.001 (0.016)	0.007 (0.017)	-0.009 (0.018)
Personal Income (Sin*)	-0.011*** (0.004)	-0.004 (0.004)	-0.003 (0.004)	-0.003 (0.005)
Health regime: Subsidized healthcare [=1]	-0.079 (0.257)	-0.448 (0.303)	-0.379 (0.305)	0.009 (0.300)
Health regime: None [=1]	-0.037 (0.248)	-0.538* (0.292)	-0.537* (0.292)	-0.071 (0.287)
Activity spent the most time: Working [=1]	0.389*** (0.132)	0.449*** (0.151)	0.282* (0.158)	0.267 (0.170)
Activity spent the most time: Looking for a job [=1]	0.249* (0.134)	0.481*** (0.153)	0.272* (0.160)	0.229 (0.172)
Activity spent the most time: Studying [=1]	0.191 (0.319)	0.420 (0.382)	0.330 (0.385)	0.635* (0.384)
Activity spent the most time: Doing house chores [=1]	0.233* (0.132)	0.338** (0.150)	0.196 (0.157)	0.223 (0.170)
Trust in Colombian Government (SD)	-0.017 (0.017)	-0.009 (0.019)	-0.037* (0.021)	-0.050** (0.022)
Internet Access: 1 to 4 hours [=1]	0.008 (0.069)	0.058 (0.081)	0.076 (0.084)	0.031 (0.091)
Internet Access: All or half of the day [=1]	0.011 (0.063)	0.019 (0.075)	-0.001 (0.078)	-0.003 (0.085)
Personal use WhatsApp [=1]	-0.156** (0.075)	-0.145* (0.085)	-0.003 (0.087)	0.038 (0.088)
Family use WhatsApp [=1]	-0.086 (0.080)	-0.113 (0.089)	0.021 (0.092)	0.087 (0.094)
Facebook or Instagram account [=1]	-0.003 (0.036)	-0.023 (0.041)	-0.028 (0.044)	-0.098** (0.047)
Twitter account [=1]	0.046 (0.198)	0.240 (0.231)	0.212 (0.256)	0.057 (0.287)
E-mail account [=1]	-0.091 (0.066)	0.069 (0.078)	-0.048 (0.080)	-0.068 (0.085)
Social desirability index	-0.025 (0.021)	-0.022 (0.023)	-0.021 (0.024)	-0.051** (0.025)
R-squared	0.065	0.045	0.049	0.042
Observations	933	750	680	578

Notes: Attrited Individuals is an indicator [=1] for the people who did not answer the survey, and were not possible to contact through WhatsApp. *** significant at the 1%, ** significant at the 5%, and * significant at the 10%.