

# Life out of the Shadows

## Impacts of Amnesties in the Lives of Refugees

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## Abstract

This paper examines the effects of a government regularization program offered to half a million Venezuelan refugees in Colombia. For this purpose, 2,232 surveys of refugee families were collected and used to compare refugees who arrived in Colombia around a specified eligibility date in 2018. The analysis finds that program beneficiaries

experienced improvements in consumption (60 percent), income (31 percent), physical and mental health (1.8 sd), registration rates in the system that assesses vulnerability and awards public transfers (40 pp), and financial services (64.3 pp), relative to other refugees. The program also induced a change in labor formalization of 10 pp.

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# LIFE OUT OF THE SHADOWS: IMPACTS OF AMNESTIES IN THE LIVES OF REFUGEES\*

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## I INTRODUCTION

The global number of forcibly displaced persons has more than doubled in the last decade; by mid-2021, over 84 million persons had been displaced worldwide. Although this phenomenon is not new, the extent of the current crisis is unprecedented and represents a primary development challenge nowadays. It gains even more relevance considering that most displaced persons (85 percent) reside in developing host countries that often lack the resources to address their needs. Unfortunately, our understanding of this crisis is limited, particularly regarding durable solutions to promote the long-term socioeconomic recovery and social integration of forcibly displaced persons.<sup>1</sup>

Our paper helps to address this gap by examining the causal short-term effects of a regularization program on refugee well-being. In particular, it analyzes the impact of the *Permiso Especial de Permanencia* (PEP for its Spanish acronym) implemented in 2018 by the Colombian government during the Venezuelan refugee crisis, the largest such displacement in the western hemisphere. In the last five years, 5.1 million Venezuelans have been forced to emigrate due to the collapse of Venezuela's economy, political turmoil, and a humanitarian crisis. This number symbolizes 19 percent of all refugees worldwide and includes over two million Venezuelan forced migrants in Colombia. To support the social integration and economic recovery of these refugees, the Colombian government introduced the PEP program, which offered 442,462 refugees full access to formal markets and safety nets.

Despite the potentially large benefits of this program and regularization initiatives in general, little is known about their actual benefits and impacts on refugees' lives and well-being. From a conceptual point of view, prior research has shown the process of forced displacement often erodes displaced persons' multidimensional asset base, imposing con-

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<sup>1</sup>In fact, most of the evidence has been focused on the effectiveness of cash transfers for refugee populations (Özler et al., 2021 and Altındag and O'Connell, 2021), but little evidence exists around programs that can promote self-reliance for refugees.

straints that hinder their livelihoods and the ability to recover and exit poverty [Ibáñez et al. \(2021\)](#). Although PEP alleviates some constraints by creating an opportunity for refugees to hold formal employment and access the social safety net, other barriers still obstruct the program's effectiveness. For example, obstacles to certifying prior study or labor experience, lack of information, and labor market discrimination may lead to skill downgrading and force refugees to accept low-paying informal jobs, thereby reducing the effect of the PEP program. An evaluation of the impact and constraints of regularization initiatives can offer key lessons to other countries trying to support refugees.

Furthermore, there is scant empirical evidence about the benefits of prior regularization initiatives because their design or rollout has not allowed proper identification of causal impacts. For instance, most regularization programs incorporate eligibility requirements such as being employed at the time of enactment. This means they benefit a rather small group of refugees, more often less vulnerable ones, which confounds the impact of the regularization program itself. Likewise, prior programs were often paired with additional policies—including sanctions on firms that hire migrants, heightened border controls, or support from other countries—that also confounded the impacts of those programs.<sup>2</sup> Finally, many of these programs were publicly discussed before their enactment, which may have led refugees to adjust their behaviors and decisions in anticipation of future positive effects.<sup>3</sup>

By contrast, the rollout and features of the PEP Program (henceforth PEP) lend themselves to the causal identification of its impacts on refugee well-being. First, PEP was introduced unexpectedly, thereby isolating any anticipatory decisions. In particular, eligibility was solely based on prior registration in a nationwide refugee census, *Registro Administrativo de Migrantes Venezolanos* (RAMV for its Spanish acronym), that was administered between

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<sup>2</sup>For example, the European Union provided funds to Turkey and trade concessions to Jordan for hosting and regularizing Syrian refugees.

<sup>3</sup>For this reason, the causal impacts of other regularization programs like *Patria Grande* in Argentina and Brazil's humanitarian visas for Haitian migrants have been difficult to identify due to self-selection into the programs and anticipation effects, among other factors.

April and June of 2018. According to government accounts, the census had only one purpose: to count the number of Venezuelan refugees in Colombia with irregular migratory status, by and large the more vulnerable ones. Importantly, the census did not intend to regularize refugees and therefore was not publicized in that way. However, one month after it was completed, Colombia's president unexpectedly announced that all refugees registered in the census were eligible to regularize their migratory status by applying for PEP. Second, the PEP program did not have any eligibility requirements and was not paired with additional policies other than registration in RAMV, which was open to all Venezuelan refugees in the country. Third, unlike other contexts in which language and cultural differences explain many of the obstacles faced by migrants and refugees in receiving countries, Venezuelans and Colombians speak the same language and share similar cultures and traits. Thus PEP provides a clean context to study the effects of migration unmediated by a clash of cultures.

To evaluate PEP's impact, a survey was administered to two subsets of Venezuelan refugees in Colombia: (1) an *eligible* random sample of 1,100 refugee families who had registered in the RAMV census and who were thus eligible for the PEP regularization program in 2018; and (2) an *ineligible* sample, including 1,132 refugee families who arrived in Colombia between January 2017 and December 2018 but who did not register in the census and were thus ineligible for PEP. The design of the survey instrument was guided by qualitative work of 42 interviews to irregular and regularized refugees about the potential impacts of PEP, reasons for not registering in the census, and reasons for not applying for PEP. The survey was administered over the phone because of the COVID-19 pandemic. To maximize response rates, the data was collected by Venezuelan enumerators. Survey participants received a monetary incentive.

Despite the aforementioned advantages of PEP's rollout and implementation that facilitated this impact evaluation, PEP was not implemented randomly because preregistration

in the government census was voluntary. For this reason, our analysis leverages different identification strategies to isolate potential biases and to identify causal effects.

The most rigorous evidence of PEP's impact comes from a fuzzy regression discontinuity design (RDD) around the closing date for registration in the RAMV census. This design exploits the exogenous, large discontinuity in eligibility around the RAMV registration deadline to compare irregular migrants who arrived before June 8, 2018 and were therefore eligible to apply for the PEP visa with those who arrived shortly after that date and were ineligible. Other strategies include Intent-to-Treat (ITT) and two-stage, least-squares estimators (2SLS), where registration in the RAMV census is used to instrument for access to PEP. Both methodologies control for a set of retrospective variables that may have affected selection into the RAMV census, including family and work history in Venezuela and Colombia, education, and—crucially—time in Colombia.

By evaluating the different empirical strategies together, we aimed to balance the pluses and minuses of each to provide a broader picture of PEP's causal effects on migrant well-being. On the one hand, the RDD better isolates underlying biases in the selection into the RAMV census and PEP, as well as differences in time of assimilation between eligible and ineligible refugees, but it has lower statistical power and only illustrates the local average treatment effect around the vicinity of the census cutoff date. On the other hand, the ITT and 2SLS estimators are more precise since they leverage the entire sample, but their validity depends on whether the specifications control for all observable characteristics that drove self-selection into the RAMV census and PEP.

The empirical analysis focuses on PEP's effects on a set of mechanical, primary, and secondary outcomes as defined by the preanalysis plan, which was registered before data was collected (see [Ibáñez et al. 2020](#)). The effects are analyzed in the short run, approximately two years after PEP's enactment. Mechanical outcomes refer to services and benefits that are only available to PEP holders. In turn, primary outcomes capture (broadly

defined) refugee well-being, including income, consumption, mental and physical health, and access to employment. Secondary outcomes include labor conditions, access to state services, food security, integration into society, and resilience to the COVID-19 pandemic. Results on the *mechanical* effects of PEP indicate that the program induced positive and large effects on job formalization rates for refugees who were able to regularize their migratory status. In particular, the results indicate that PEP prompted an effect of approximately 10 percentage points (pp) on formal employment, which is sizeable considering the vulnerability of Venezuelan refugees and the prevalence of job informality (48 percent) in the Colombian labor market. In addition, the results of the different empirical strategies point to large and positive improvements in the registration in the Sisbén poverty score system of approximately 40 pp and financial services (64.3 pp).<sup>4</sup>

Second, results from the different strategies indicate that PEP holders experienced substantial improvements in *primary* outcomes, including per capita income and consumption as well as in overall physical and mental health. In particular, the RDD estimates suggest that refugees with a PEP visa had improvements in per capita consumption of 60 percent, total income of 31 percent, and physical and mental health of 1.8 standard deviations (sd), relative to ineligible refugees. Finally, the analysis documents positive program effects on *secondary* outcomes, although they are only statistically significant for the ITT and 2SLS estimates. These results suggest that the regularization improved labor conditions, reduced food insecurity, made PEP beneficiaries more resilient to the negative economic shocks of COVID-19, and contributed to perceptions of a stronger integration into their host communities.

These results offer important lessons to other developing countries that are experiencing large refugee inflows and contemplating regularization programs or labor permits for refugees. Combined with previous findings from [Bahar et al. \(2021\)](#) that document

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<sup>4</sup>The Sisbén system assesses vulnerability and determines eligibility for different Colombian social programs, including health, education, and transfers.



the negligible effects of PEP on formal labor markets for Colombian workers, this study provides strong evidence on the virtues of facilitating refugee integration. Considering that most Venezuelan refugees report that they do not plan to return to Venezuela, host countries are most likely better-off facilitating refugee integration as it reduces the time for refugees to become self-sufficient and to contribute to the societies hosting them.

**Contribution to Literature:** This paper contributes to the literature in several dimensions. First, it identifies the causal impacts of a large regularization program on refugee well-being in the Global South. Developing countries host the lion's share of refugees worldwide. Hence, it is currently an urgent development challenge to integrate refugees into formal labor markets and to design policies that promote their recovery. There is little evidence on the impact of refugee flows to developing countries, let alone the impact of regularization programs on these refugees. Instead, most research has focused on the impact of regularization programs on labor markets in developed countries ([Amuedo-Dorantes and Antman 2017](#), [Amuedo-Dorantes and Bansak 2011](#), [Amuedo-Dorantes et al. 2007](#), [Cobb-Clark et al. 1995](#), [Chassamboulli and Peri 2015](#), [Devillanova et al. 2018](#), [Kaushal 2006](#), [Monras et al. 2018](#)).<sup>5</sup> There is recent evidence on developing countries, including [Fallah et al. \(2019\)](#) in Jordan and [Bahar et al. \(2021\)](#) in Colombia, yet these studies focus on the effects of regularization on natives rather than on refugees themselves. Our paper shows the benefits of regularization are sizeable and contribute to accelerated integration of migrants into their destination countries. In the medium term, labor formalization will reduce the dependency of migrants on government support (and decrease consequent fiscal pressures) through lower demand for aid and their contributions to labor taxes.

Second, this paper provides a broader perspective on refugees' lives by studying the impacts of a regularization program beyond labor, income, and consumption. Regularization programs may have far-reaching implications for refugees' well-being, including

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<sup>5</sup>A related literature studies the effects of migrant regularizations on crime in hosting communities. See [Baker \(2015\)](#) for the United States, [Mastrobuoni and Pinotti \(2015\)](#) for the European Union, and [Pinotti \(2017\)](#) for Italy.

physical and mental health. Migrants—refugees in particular—have an initial health disadvantage when compared to the host population (Reed and Barbosa 2017), and their health may deteriorate even further in the destination country. This disadvantage is driven by the collapse of health infrastructure in their countries of origin, lack of access to healthcare in receiving countries, income effects that reduce household investment in health, stress associated with forced migration and the resettlement process, and cultural differences in the concept of health and healthy behavior (Black et al. 2015), among others. In some contexts, the gap between natives and migrants closes over time, but in others, as in the case of asylum seekers, the gap may persist (Giuntella et al. 2018). The mental health of refugees is another source of concern as the drivers of forced migration have negative and sometimes persistent consequences for mental health. In addition, the uncertainty stemming from irregular migratory status, fear of deportation, barriers to proper integration, and socioeconomic deprivation in receiving countries may further deteriorate their mental health and subjective well-being (Chen et al. 2019). Mental health problems can affect behavior, labor outcomes, and income trajectories, thus creating feedback mechanisms between socioeconomic and mental health dimensions that can lead to economic and psychological poverty traps (Ruiz and Vargas-Silva 2018).<sup>6</sup> This paper shows that regularization improves the health status of refugees by granting them access to the receiving country’s health system, which probably reduces the anxiety, stress, and uncertainty that accompany the lack of legal migratory status.

Third, the study examines how a regularization program promotes the integration of refugees into the society of the receiving country. A successful integration process is crucial for refugees to feel part of the social contract in the host country, to trust state institutions, and to act collectively within their communities. We contribute here by exploring the impact of the regularization process on the attitudes, behaviors, and perceptions

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<sup>6</sup>This paper finds descriptive evidence that refugees in the United Kingdom have worse labor outcomes than other migrants; most of the gap can be explained by differences in health status, especially mental health.

of refugees. Most papers in the migration literature study the impact of migration and refugee flows on the attitudes, behaviors, and perceptions of the host population (see, for example, [Dustmann and Preston 2007](#), [Facchini and Mayda 2009](#), [Abramitzky and Boustan 2017](#), [Alesina and Stantcheva 2020](#), [Tabellini 2019](#)). While refugees seldom return to their home country, a failed integration process may segregate them from host communities, creating anger and resentment among them. This has occurred in developing countries that settle refugees in camps, where they are isolated from the host communities and lack access to similar services. By providing benefits similar to those granted to citizens in the host country, a regularization program may ease these negative impacts and increase a sense of belonging, which could result in greater willingness to contribute to the community, to pay taxes, and to maintain order, among others. Previous work on this topic has mostly centered on the Global North ([Hainmueller et al. 2015](#), [Abramitzky et al. 2014](#), [Abramitzky et al. 2021](#), [Pérez 2021](#)). Although exploratory, our evidence suggests that regularized migrants feel more integrated and place more trust in their neighbors and the government of the host country than unregularized ones do. The positive effects of Colombia's PEP program on refugee attitudes toward local communities and the government provide useful information on options for hosting refugees.

Fourth, this study yields information on whether PEP helped refugees to cope with the COVID-19 pandemic. Evidence shows that the burden of the pandemic has not been equally distributed and has disproportionately struck underserved communities, exacerbating their social and economic vulnerability. Refugees are among the most vulnerable individuals because they lack access to essential health services and may be ignored or left behind by policies implemented by governments worldwide to tackle the socio-economic consequences of the pandemic ([Lorenzo 2020](#), [Zambrano-Barragán et al. 2021](#), [Gibson et al. 2021](#)). Therefore, Colombia's PEP regularization program may now be even more relevant as it enables refugees to access health and social protection, to receive social transfers instituted during the pandemic, and to be less fearful about approaching health

centers. Our results show this to be the case. Furthermore, PEP’s health benefits extend to the native population because allowing migrants to access public health services can reduce the incidence of infectious diseases locally, as documented by [Ibáñez et al. \(2021\)](#).

## II THE PEP REGULARIZATION PROGRAM

### II. A Program Rationale

To facilitate the regularization and integration of Venezuelan refugees, the Colombian government created the PEP program in 2017. PEP grants Venezuelan refugees regular migratory status, a work permit to access jobs in the formal sector, access to private services including financial and digital connection services, and the ability to receive a Sisbén score. The Colombian government uses Sisbén as a metric to determine eligibility for social safety net programs. A Sisbén score enables a refugee to apply for these programs, including subsidized healthcare, public education, early childhood services, and cash transfers.

Refugees in Colombia without regular migratory status cannot work in the formal sector; they can only secure informal jobs (often characterized by low wages and skill downgrading) that do not provide access to social security programs. Refugees in the informal economy may face more risk of exploitation and poor working conditions. More generally, refugees without regular migratory status may be afraid to exercise their rights and access essential services that Colombia offers to all migrants and refugees regardless of migratory status.<sup>7</sup>

The first two waves of PEP targeted Venezuelans who migrated to Colombia through official immigration checkpoints and had lawful migratory status. Nearly 182,500 permits were issued under these two waves. These waves excluded a large share of Venezuelans in Colombia who migrated through illegal border crossings, overextended their stays,

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<sup>7</sup>Appendix A describes the services provided to all refugees and the additional services and benefits offered by PEP.

or used a temporary document called *Tarjeta de Movilidad Fronteriza*, which only allowed short stays in border areas.<sup>8</sup>

## **II. B Program Rollout**

In an effort to offer PEP visas to irregular migrants, the Colombian government introduced a third PEP wave in August 2018 for all Venezuelan refugees who had registered in the Administrative Registry of Venezuelan Migrants (again, RAMV for its Spanish acronym). The Colombian government implemented RAMV between April 6 and June 8, 2018 to assess the magnitude of irregular Venezuelan refugee flows and to characterize the population. Importantly, RAMV was not designed to grant work permits; it was implemented only to assess the magnitude of Venezuelan irregular migration. However, in August 2018—just a few weeks before leaving office—Colombian President Juan Manuel Santos unexpectedly enacted a decree that enabled refugees in RAMV to register in a new wave of the special residency permit: PEP-RAMV. For brevity, we refer herein to PEP-RAMV simply as PEP.

The RAMV registry was collected in 441 of the 1,122 municipalities in Colombia. These municipalities include those with the highest number of Venezuelan migrants. The RAMV census was advertised on social media, in local newspapers, and through local refugee organizations. According to the official records, 442,462 Venezuelan refugees registered in RAMV and 64 percent of them (281,307 individuals) applied for PEP. Figure 1 illustrates the rollout of the RAMV registry and the PEP program.

## **II. C Program Eligibility and Application Process**

Unlike previous amnesty programs around the world, PEP did not impose any eligibility criteria related to education, sector of occupation, or job sponsorship. To be eligible to apply for the PEP program, Venezuelan refugees in Colombia only needed to: (i) have a

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<sup>8</sup>The *Tarjeta de Movilidad Fronteriza* facilitated the movement of Venezuelans who lived on the Venezuelan-Colombian border and came across on a regular basis to shop for groceries and medicines, to visit family members, and to attend school, among other reasons. It only permitted free movement inside the border areas. This temporary permit no longer exists.

valid Venezuelan ID or other proof of Venezuelan citizenship, (ii) be registered in RAMV, (iii) reside in Colombia by the time the decree was issued, and (iv) have no criminal record or deportation order. PEP processing was free and refugees had to submit their application online.

### **III THE VENEZUELAN REFUGEES PANEL SURVEY (VenRePS)**

This section describes the qualitative study, sampling frame, data-collection process, and main descriptive statistics of the first wave of the Venezuelan Refugees (VenRePS) Panel Survey that was collected for this research project. Given the challenges of sampling and surveying refugees in general, which are even greater in countries like Colombia where refugees do not reside in camps, the sampling construction is discussed in detail to highlight key lessons for future work.

#### **III. A Qualitative Study**

Forty-two semistructured phone interviews were conducted with RAMV and non-RAMV refugees who were contacted through associations and established networks of Venezuelan refugees. These interviews aimed to understand different factors that influenced the decision to register in RAMV and PEP, and to identify potential challenges to re-locating RAMV migrants and building a sample of irregular migrants. The qualitative interviews highlighted key lessons for the survey design and data-collection protocol.

First, refugees have high levels of mistrust because they fear identification and deportation, and because they are often subject to scams and fake information sent through social media. As a result, they are generally skeptical and mistrust any information they receive, which affected their willingness to register in RAMV, to participate in surveys, and to provide accurate information on sensitive topics such as their migratory status, income levels, or integration into Colombian society. Second, refugees were connected to refugee networks in Colombia before migrating. These networks provided aid upon arrival and valuable information about the migration process. Fewer refugees with estab-

lished contacts in refugee networks applied to PEP, presumably because they felt they did not need public support. Third, refugees reported that often local authorities and NGOs produce information in language that is difficult for them to understand. Despite the fact that Venezuelans and Colombians both speak Spanish, there are important differences in everyday usage. The results and implications of the qualitative study are discussed in more detail in [Romero and Uribe \(2021\)](#).

The survey and data-collection protocol were updated based on these findings. Venezuelans reviewed the survey instrument and communications, adjusting them to reflect appropriate language usage. All data was collected by Venezuelan enumerators, many of them refugees themselves. Venezuelan refugee organizations disseminated information on the objectives and scope of our project to facilitate and build trust with the individuals in the sample and to reduce their reluctance to share personal information over the phone. Finally, the survey included questions on premigration networks and access to information in Colombia that were used in the empirical strategy to control for these unobservable factors, which are correlated with the decisions to register in the RAMV and PEP systems.

### **III. B Sampling Frame**

We estimated the impacts of PEP in the lives of migrants using data from a survey that was administered to 2,232 Venezuelan refugee families living in Colombia. As outlined in the preanalysis plan, the sampling frame targeted two types of refugees: (i) *RAMV or eligible families*, where the head or partner had registered in RAMV and who thus was individually eligible for PEP (1,100 families); and (ii) *non-RAMV or ineligible families*, where the head or partner did not register in RAMV and therefore was not eligible for PEP (1,132 families).<sup>9</sup> Given the difficulties of sampling and contacting refugees in general, the sampling frame was built separately for RAMV and non-RAMV refugees.

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<sup>9</sup>In practice, there were 3,455 families, but some of them had Colombian nationals, especially among the PEP sample. Therefore, the sample was restricted to avoid confounding the effects of PEP with those of services and rights that are available to Colombian nationals.

The sample is representative of four geographical regions in Colombia that host the largest share of Venezuelan refugees in the country: Barranquilla, Bogotá, Medellín (and their metropolitan areas)—three of the largest cities in Colombia—and a fourth region of smaller cities closer to the Venezuelan border. In total, the sample covers cities that host 59 percent of Venezuelan refugees in Colombia, according to the RAMV registry.<sup>10</sup> Figure 2 illustrates the geographic distribution of our sample and the number of Venezuelan refugees in the 2018 population census, which can be taken as a proxy of the overall distribution of refugees in the country. The sample was stratified by gender, education, and occupational sector.

### III. C RAMV or Eligible Refugees

For RAMV or eligible refugees, the sampling frame was the RAMV census data facilitated by the Colombian migration authorities. RAMV data has contact information for all registered refugees, the city where they registered, and basic demographic information. The sample was stratified by age, sex, and education; it was designed as a representative sample of refugees with and without PEP. Subjects in this sample fulfilled the following criteria: (i) aged 18 or older; (ii) were the household head or partner; (iii) arrived in Colombia between January 1, 2017 and June 8, 2018, and therefore were in Colombia before RAMV registration closed; and (iv) registered in RAMV in any of the following locations: Barranquilla, Bogotá, Medellín, Cúcuta, Villa del Rosario, Cali, Cartagena, Riohacha, Maicao, Uribe, Valledupar, Santa Marta, and Arauca. We selected these cities because they host a large share of Venezuelan refugees.

Overall, the survey interviewed 1,100 families in which the head or partner had registered in RAMV. According to RAMV registry data, many families live in the same residence, so the sampling unit is the nuclear family of the household head, which we define as the immediate family plus the daughter-in-law and son-in-law. Response rates of individuals

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<sup>10</sup>Of these places, Bogotá hosts 9.74 percent Medellín, 2.60 percent; Barranquilla, 4.84 percent; and the smaller cities, 41.87 percent of refugees registered in RAMV.



who were eligible but did not apply for PEP were lower than we expected. In practice, 94 percent of the collected eligible sample included PEP applicants, while the population share in the RAMV census was closer to 60 percent. Qualitative interviews suggest many of the migrants who registered in RAMV and did not apply for PEP left the country. In addition, in recontacting “RAMV-No PEP,” we found errors in which the official registry identified persons as “RAMV-No PEP” who were actually “RAMV-PEP.”

### **III. D Non-RAMV or Ineligible Refugees**

For non-RAMV refugees who were ineligible for PEP, there are no official records to use as sampling frames. Hence, the sampling frame was based on a pool of referrals from RAMV refugees combined with databases shared by organizations that support migrants.<sup>11</sup> By the end of the collection period, 14,935 non-RAMV refugee families were part of the sampling frame—31.6 percent of whom were referrals—and 1,122 were randomly selected and surveyed.<sup>12</sup> The sample included refugees who arrived in Colombia before and after the RAMV registry closed, which enabled the estimation of a regression discontinuity design around the date RAMV ended.

### **III. E Collection Process**

The survey was administered over the telephone between October 2020 and January 2021. Originally, the survey was planned for in-person data collection, but it shifted to a telephone mode because of the COVID-19 pandemic.

The questionnaire had three main modules. The first posed standard sociodemographic questions to all family members. The second module elicited information on the registration process for the RAMV census and PEP, including whether each member had

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<sup>11</sup>At the end of each survey, we asked respondents if they knew refugees who were not registered in RAMV, and asked them to provide up to five contacts for such individuals. To help refugees in identifying non-RAMV refugees, we explained that we sought refugees who were: (i) aged 18 or older; (ii) without a passport, because this defines irregular migratory status; (iii) without any version of PEP; and (iv) who arrived in Colombia between January 2017 and December 31, 2018.

<sup>12</sup>Appendix C shows there are no significant differences in the characteristics of migrants referred by RAMV individuals or by local organizations.

PEP (any version), its issue date, perceived benefits, and reasons why they registered in RAMV and PEP or did not. Next, a labor module was administered; it was designed in line with the Colombian Labor Force Survey (*Gran Encuesta Integrada de Hogares*) to make it comparable to existing data on monthly and weekly income, as well as on labor history in Venezuela and Colombia. To reduce the time required to take the survey, the labor module was posed to only the household head and spouse, or absent a spouse, to another adult member randomly selected from the household roster. The final module was collected only for the respondent, who provided information on the following dimensions: (i) migration, (ii) health and access to healthcare, (iii) integration into Colombian society and connections with Venezuelan refugee networks, (iv) prosocial preferences, (v) housing, and (vi) expenditure and remittances. On average, the survey collection lasted one hour and 40 minutes. Appendix B presents more details on the collection process and the instrument.

Respondents received an incentive of \$27,000 Colombian pesos (approximately \$USD 9) for participating in the study. As most refugees are excluded from the financial system, it was a significant challenge to deliver the incentive during data collection. For this reason, different options for delivery were provided, including cellphone credit, supermarket vouchers, and electronic transfers.

### **III. F Outcome Variables**

Since the regularization of migrants is a politically sensitive issue, the research team designed a preanalysis plan with a rich set of mechanical and primary outcomes (see [Ibáñez et al. 2020](#)). Additionally, we analyzed a broader set of secondary outcomes in an exploratory way.

#### **III. F.1 Mechanical Effects**

These are direct benefits and services provided by PEP that are not available to non-PEP irregular migrants, including the opportunity to hold formal employment, enrollment

in the Sisbén means-tested targeting system, access to the subsidized healthcare system, transfers from the government, and access to financial services. These mechanical outcomes provide a first approximation of the impacts of the regularization program on refugees plus possible mechanisms that underlie its impact on well-being.

### **III. F.2 Primary Outcomes**

Migrant well-being was analyzed encompassing socioeconomic dimensions as well as physical and mental health. Specifically, we assessed effects of the PEP visa on five primary outcomes including consumption per capita, income, employment, weekly hours worked, mental health, and an aggregate well-being index. The latter two measures come from the EQ-5D-3L, a standardized questionnaire used to describe and assess health across different dimensions, including physical and mental health, via a Likert scale. The questionnaire has been adapted to different settings, including Colombia and Venezuela, and it has demonstrated appropriate psychometric properties and validity. The Spanish-language version adapted to the Venezuelan population was administered to elicit severe symptoms of anxiety and depression, and an overall health/well-being index was constructed through a Principal Component Analysis.

### **III. F.3 Secondary Outcomes**

We conducted a more exploratory analysis of PEP's impact on a set of secondary outcomes to provide a broader picture of how the regularization program affected refugees' well-being and to understand potential mechanisms. These included other, more specific characteristics of labor market conditions (i.e., reservation wages, job satisfaction, self-employment, permanent work status, and participation in the gig economy); integration (i.e., feelings of integration into Colombian society and the neighborhood, having Colombian friends, feelings of experiencing discrimination, and trust in the Colombian government); food security and immunization (i.e., whether refugees skipped a meal, access to healthcare, and children's immunization compliance); and resilience to the economic

impacts of COVID-19 (i.e., evictions, sales of assets, and support during the crisis).

Appendix E reports basic descriptive statistics for all outcomes listed above. It suggests that refugees with PEP had, on average, higher levels of well-being than irregular migrants. These differences could be associated with observable and unobservable factors that determined self-selection into the RAMV census and the PEP program. Our empirical design leverages three identification strategies to reduce these potential biases.

### **III. G Descriptive Statistics**

Table 1 reports descriptive statistics on refugees' demographic and premigration socioeconomic characteristics, as well as on variables related to the migration process. Column (1) reports data for families where no one registered in RAMV (non-RAMV refugees), Column (2) for families where at least one member registered in RAMV (RAMV refugees), and Column (3) for families where at least one member registered in RAMV and received PEP (PEP refugees). Columns (4) and (5) report the p-value for the two-sample differences between non-RAMV and RAMV refugees, and non-RAMV and PEP refugees, respectively.

By and large, there are statistically significant differences along the three different dimensions of the data—albeit not of a large magnitude—indicating that RAMV and PEP refugees were slightly better-off in Venezuela than non-RAMV refugees, particularly regarding labor market outcomes. There were also differences across key variables that could have been correlated with registration in RAMV. These differences could confound the effects and benefits of PEP. For example, relative to non-RAMV refugees, those in RAMV and PEP had been settled in Colombia for six additional months on average, meaning they were further along in their assimilation process and likely had more information about RAMV and PEP. Likewise, these refugees were approximately five years older, had smaller families with fewer children, were more educated, and had a greater (albeit small) likelihood of having worked while in Venezuela. Finally, they had fewer

families or friends in Colombia before migrating and had a higher likelihood of owning a smartphone, which are both instrumental in accessing information about refugee networks, their rights in Colombia, and social and governmental initiatives such as RAMV and PEP. RAMV and Non-RAMV refugees also showed similar characteristics before migrating.

Appendix D reports data on the self-reported factors for not registering in RAMV and for not applying to PEP (See Tables [D.1](#) and [D.2](#)). The main reason for not registering in RAMV was a lack of information about it or the process and requirements to register: 51 percent of refugees in Colombia at the time RAMV took place did not register because they did not know about it or mistakenly thought they needed a passport, that they would be charged for registering, or that the process would be too cumbersome. In addition, 17 percent of non-RAMV refugees were not in Colombia at the time RAMV was open. Other reasons for not registering included difficulties in going to the registration sites because of conflicting work schedules (15 percent) and fear of being deported (seven percent). Similarly, the main reasons for not applying to PEP—conditional on having registered in RAMV—also related to lack of information: 16 percent thought they needed a passport, six percent did not know about PEP, and five percent did not know the benefits and services associated with PEP. In addition, 23 percent reported not applying because they had lost their proof of registration in RAMV.

#### **IV IDENTIFICATION STRATEGY**

Key features of the PEP program facilitate estimating its causal effects on migrants' life outcomes. Since PEP was enacted unexpectedly, was available to all refugees registered in RAMV, and was not paired with other eligibility requirements or policies, we can rule out any behavioral and anticipatory effects and simultaneous treatments that have precluded analyzing the effects of other similar programs. Registration for RAMV and application to PEP, however, were voluntary. Hence, refugees self-selected into RAMV registration

and PEP application. This precludes comparing differences between refugees who were eligible and ineligible for the program as a way of identifying the causal effects of PEP.

To tackle these challenges, we employed multiple identification strategies as described in the preanalysis plan. These strategies included a fuzzy regression discontinuity design (RDD), an intent-to-treat (ITT), and a two-stage, least-squares specification (2SLS) (see [Ibáñez et al. 2020](#)). The different approaches come with trade-offs in terms of external validity and statistical power versus the ability to control for biases caused by self-selection and unobservable variables.

The RDD exploits the discontinuity in eligibility for PEP around the final date on which refugees could register in RAMV. This strategy is better suited to isolating the underlying biases in the selection into RAMV and PEP and the differences in time of assimilation between eligible and ineligible refugees, but it has lower statistical power and only depicts the local average treatment effect around the vicinity of the RAMV cutoff date. The ITT and 2SLS have more precision as the whole sample can be used to estimate the effects of the program, but their validity rests on whether the specifications control for all observable characteristics that drove self-selection into RAMV and PEP.

By combining the different empirical strategies, we aimed to balance the pluses and minuses of each and provide a broader picture of PEP's causal effects on migrants' life outcomes.

#### **IV. A Fuzzy Regression Discontinuity Design**

The fuzzy RDD exploits the discontinuity created by RAMV registration and the fact that only registered migrants were eligible to apply for PEP. Venezuelan refugees could only register in RAMV between April 6 and June 8, 2018. Those who arrived in Colombia later therefore could not register in RAMV and were not eligible for PEP.

Specifically, we estimated a fuzzy RDD that compared eligible and ineligible refugees on

each side of the RAMV time-eligibility cutoff (June 8, 2018). The specification is given by the following model:

$$1[PEP_i = 1] = \beta_1 + \beta_2 1[T_i < \bar{T}] + \beta_3 f(d_i) + \theta' X_{ij} + \gamma' Z_j + \phi + \epsilon_{ij} \quad (1)$$

$$Y_{ij} = \alpha_0 + \alpha_1 \widehat{1[PEP_i = 1]} + \alpha_3 f(d_i) + \omega' X_{ij} + \Psi' Z_j + \phi + \mu_{ij} \quad (2)$$

where  $Y_{ij}$  is the observed outcome for refugee  $i$  in family  $j$ ,  $1[PEP_i = 1]$  is an indicator variable for refugees who applied for PEP,  $T_i$  and  $\bar{T}$  are the date of migration to Colombia and the date when the RAMV registry closed, respectively, and  $1[T_i < \bar{T}]$  is an indicator variable for whether the refugee arrived in Colombia when the registry was still open. Hence, the treatment is equal to one for refugees who were eligible for PEP because they arrived before RAMV closed.  $f(d_i)$  is a polynomial of the distance, measured in days, between the date of arrival of the migrant and June 8, 2018 ( $d_i = T_i - \bar{T}$ ).  $X_{ij}$  and  $Z_i$  are vectors of prespecified individual and family controls that we present in Table 1. These controls include characteristics and factors that are correlated with RAMV take-up, especially regarding pre-RAMV access to information, networks, and socioeconomic status. Vector  $X_{ij}$  of pre-RAMV individual controls includes age, gender, and years of education before migration; labor history in Venezuela (ever worked, had a formal job, and type of job); time of settlement in Colombia; and the time gap between the last job in Venezuela and migration to Colombia. Vector  $Z_i$  includes premigration family characteristics including demographic composition (household size, composition, and number of children); access to public services; house ownership; and whether the household had a smartphone. This vector also controls for variables related to the migration decision such as whether they had family or friends in Colombia, knew about job opportunities before migrating, and whether they migrated for health reasons.  $\phi$  is a vector of fixed effects for the sampling city and state of residence. The RDD specification was estimated with and without controls, and the results remain unchanged. For inference, the estimates follow

Cattaneo et al. (2019) and use a local linear polynomial of the running variable, a mean-squared-error optimal bandwidth (MSERD), and a robust bias-corrected estimator and confidence intervals.

Figure 3 illustrates the discontinuity in the probability of treatment for migrants who arrived in Colombia after June 8, 2018, using the raw data. Panel A illustrates the mean probability of PEP application for all refugees in the sample on a weekly basis (blue line). This figure confirms the existence of a sharp discontinuity in the probability of applying for PEP after June 8, 2018, when the RAMV census registration closed. Panel A also plots gray bars that illustrate the density of refugees who arrived in Colombia each week. Visual inspection of the figure indicates no discontinuity in the number of individuals who arrived in Colombia before or after June 8, 2018.<sup>13</sup> The McCrary test rejects the existence of any discontinuity in the density in the sample or manipulation from individuals (p-value=0.96). This is expected because when RAMV opened, the Colombian government did not intend to use it as a platform to regularize refugees, so there were no public discussions or announcements in this vein.

Panel B illustrates the discontinuity in the probability of treatment, estimated as the average treatment take-up in each bin. This figure illustrates the discontinuity using a linear polynomial to confirm the existence of a large, robust discontinuity in the probability of treatment around June 8, 2018, when RAMV registration closed.<sup>14</sup> At each point, the figure illustrates the mean probability of treatment in each bin and its 95% confidence intervals.

Figure 4 examines whether refugees who migrated just before and after the RAMV cutoff date were similar across a range of individual and household characteristics. For this

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<sup>13</sup>The survey asks the reasons for migration, with one option being to register in RAMV. Only 0.5 percent of respondents reported migrating in order to register in RAMV. For those who migrated after RAMV registration opened in April 2018, only three reported migrating to register in RAMV.

<sup>14</sup>Appendix G illustrates the discontinuity fitting a quadratic polynomial. It confirms the existence of a large discontinuity in the application probability around June 8, 2018.



purpose, a sharp-RDD model was estimated with a set of premigration and pre-RAMV controls used in the RDD as the outcome variables. These variables were specified in our preanalysis plan. The point estimates are in Appendix F. The estimates support the validity of the local continuity assumption. Only two out of 21 estimated coefficients are significant at the 10% level, which is expected due to random variation. Therefore, the data suggests no evidence of systematic differences between refugees who migrated just before and after the RAMV closing date.

#### **IV. B Intent-to-Treat (ITT)**

The ITT specification compares RAMV and non-RAMV refugees, thus exploiting the individual eligibility requirement for PEP. To isolate selection into RAMV, the specification controls for a broad set of pre-RAMV and premigration covariates specified in the preanalysis plan. Specifically, the following model was estimated:

$$Y_{ij} = \alpha_0 + \alpha_1 1[RAMV_{ij} = 1] + \theta' X_{ij} + \gamma' Z_j + \phi + \epsilon_{ij} \quad (3)$$

where all the symbols represent the same variables as in the RDD specification and  $\epsilon_{ij}$  is the White robust error. Although inclusion of the broad set of premigration and pre-RAMV characteristics allows us to control for some of the factors related to the decision to register in RAMV and to apply for PEP, the ITT estimates could have biases due to unobserved variables that cannot be controlled for. Yet, the ITT estimates also offer the advantage of more precision since the sample size is larger than the one used for the fuzzy RDD.

#### **IV. C Reweighted Two-Stage Least Squares (2SLS)**

The 2SLS specification exploits assignment into RAMV as an instrument for PEP status, conditional on the set of premigration and pre-RAMV observables described above. Specifically, individual PEP treatment status  $1[PEP_{ij} = 1]$  in model (3) was instrumented

with the individual eligibility for the program (RAMV registration). The 2SLS provides the effect of PEP for the compliers—those who were eligible for PEP because they had registered in RAMV, and those who effectively applied for PEP. The validity of the 2SLS rests on the assumption that selection into RAMV is driven by observable factors that can be controlled for, and on the assumptions of monotonicity and exclusion restriction. In this case, PEP allows isolating selection into the PEP and would provide an upper bound of the Average Treatment Effect.<sup>15</sup>

As mentioned earlier, the eligible or RAMV sample had 94 percent of PEP applicants; in the actual RAMV census, the share of PEP applicants was closer to 60 percent.<sup>16</sup> To correct for this issue, the 2SLS estimates were reweighted with sampling weights that represent the true proportion of PEP and non-PEP applicants in the actual RAMV or eligible population.

## V RESULTS

### V. A PEP Impacts on Mechanical Effects

Table 2 reports the estimates on the set of mechanical outcomes. Panel A presents estimates for the RDD design, panel B for the ITT, and panel C for the reweighted 2SLS specification. The tables also report q-values for the possible false discovery rates when multiple outcomes are tested.

The estimates across the three identification strategies suggest robust, positive, and sizeable effects of the PEP program on Sisbén registration and access to financial products. Sisbén registration for eligible PEP applicants is approximately 40 to 43 pp higher than for ineligible refugees (who have a mean registration of 2.1 percent). Access to financial

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<sup>15</sup>Monotonicity refers to the fact that assignment to the treatment—here, eligibility for PEP among RAMV refugees—does not make application for PEP less likely. The exclusion restriction refers to the fact that outcomes should be the same among refugees who do not take up the treatment, regardless of registration in RAMV or lack thereof.

<sup>16</sup>As noted earlier, qualitative interviews suggested the low response rates were due to eligible refugees in RAMV who did not apply for PEP because they were not living in Colombia anymore. Also, the official registry mistakenly labeled some PEP participants as not having RAMV.

products is between 64.3 pp (in the RDD estimates) and 20 pp (in the ITT and 2SLS estimates) higher for eligible PEP applicants, relative to ineligible refugees (who have a mean access to financial products of 3.2 percent).

The estimates for the outcomes of having a formal job, having access to subsidized healthcare, and receiving transfers from the government are all positive, but they are only statistically significant for the ITT and 2SLS estimates. Interestingly, for the outcomes of having a formal job (column (1)) and having access to subsidized healthcare (column (3)), the estimates across the three methodologies are extremely similar in value and point to approximate effects of the PEP program on a 10 pp change in labor formalization and 20 to 30 pp in subsidized healthcare access. The similar point estimates across the three methodologies suggest that biases driven by self-selection and unobservables are not large in the ITT and 2SLS estimates; they also imply that the RDD estimates come at the cost of less precision for the smaller sample in the fuzzy RDD, rather than the absence of positive effects for PEP holders.

The effects of PEP on labor formalization are large given the high informality prevalent in Colombian labor markets. Half of employed Colombians are in the formal labor force and, for natives in the first three income deciles, formalization rates range from 24 to 31 percent. The short-term effect of regularization is therefore one-fifth of the formalization rate for the average Colombian and one-third for those in the first three income deciles. Although no estimates on the impact of similar programs are available with which to compare our results, [Kugler et al. \(2017\)](#) estimate that a tax reform in Colombia that reduced payroll taxes and employment contributions to health insurance by 13.5 percent increased formalization by 6.9 pp.<sup>17</sup>

Figure 5 shows the estimates of the fuzzy RDD using different bandwidths to illustrate

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<sup>17</sup>[Bernal et al. \(2017\)](#) estimate that manufacturing firms increased formal employment by 4.3 pp in response to the same tax reform, while [Fernández and Villar \(2017\)](#) estimate that informality decreased by 4.8 pp.

the coefficient stability when precision is increased with a larger sample around the cutoff. The figure confirms stable effects of the PEP program of approximately 10 pp on labor formalization, 50 pp on Sisbén access, 20 pp on subsidized healthcare access, and 30 pp on financial access. The estimates also show insignificant statistical effects of the PEP program on refugees' access to transfers from the Colombian government.

The results from this section indicate that PEP brought about sizeable effects on refugees' access to Sisbén as well as access to subsidized healthcare and financial products. It also had an approximate effect of 10 pp on refugees' labor formalization, which is large given that the impacts are short-term ones and that the survey took place while the pandemic was ravaging labor markets.

## **V. B PEP Impacts on Refugee Well-Being**

Table 3 reports estimates on the primary outcomes. As for the case of the mechanical outcomes, panel A presents estimates for the RDD, panel B for the ITT, and panel C for the reweighted 2SLS specification. Columns (1) through (6) present estimates of the impacts of PEP on consumption per capita, total labor income, employment status, weekly hours worked, critical symptoms of anxiety or depression, and a well-being index.<sup>18</sup>

Estimates across methodologies suggest that PEP had positive and substantial effects on the levels of consumption per capita and total income. Specifically, the RDD estimates—the preferred and more rigorous specification—suggest that per capita consumption and total income were 60 and 31 percent higher for refugees with PEP who arrived in Colombia close to June 8, 2018 than for ineligible refugees who arrived after the cutoff date. The impact of conditional cash transfer programs on aggregate consumption provide a

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<sup>18</sup>The logarithm of total annual consumption per capita and the logarithm of total labor income (sum of wage, extra payments, and revenue from independent work) are expressed in logs of Colombian million pesos. Employment is measured through an indicator variable equal to one when a person is employed (as either wage earner, independent, or family worker) and the logarithm of weekly hours worked. Symptoms of severe anxiety or depression are an indicator variable equal to one if the respondent reports being very or extremely depressed or anxious according to the Likert scale. Finally, the well-being index is the first component of a PCA index for self-rated health variables on (i) mobility, (ii) anxiety and depression, (iii) daily activities, (iv) personal care, (v) pain and fatigue, and (vi) health perception.

benchmark with which to compare our results. The increment in consumption from these programs in Colombia, Mexico, and Indonesia range from no impact to 15 percent on total consumption and 23.1 percent on food consumption ([Attanasio and Mesnard 2006](#), [Angelucci and Attanasio 2009](#), [Cahyadi et al. 2020](#)). Even our lower estimate is twice the effect of the highest estimate for the impact of CCT programs in these countries.

The improvement in migrant well-being went beyond economic welfare. The mental health of PEP holders is significantly better than for those without PEP. Within the vicinity of the RAMV cutoff date, the physical and mental well-being index of refugees with PEP is 1.8 sd higher than for those without PEP, although this result is only statistically significant at the 10% significance level.

The coefficient estimates for employment and the well-being index suggest positive effects of the program but are only statistically significant for the ITT and 2SLS estimates. Nonetheless, the point estimates in the fuzzy RDD specification are much larger than those in the ITT and 2SLS.

Figure 6 depicts the estimates of the fuzzy RDD using different bandwidths. As in the case of the mechanical outcomes, this exercise illustrates the coefficient stability when precision is increased with a larger sample around the cutoff. The figure shows that the size of the coefficients becomes smaller as the bandwidth increases, and that program effects are only consistently observed for the consumption per capita and total income.

Can labor formalization explain such large increments in consumption per capita and total income? The effect on labor formalization, despite being large, may only partially explain the sizeable increase in consumption and income. It is likely that although the majority of eligible migrants did not switch from the informal to the formal sector, they did in fact improve their labor conditions. Appendix H supports this idea by illustrating that refugees with the PEP visa changed sectors more often relative to other migrants, arguably in search of better jobs. Migrants could also have remained in the same job but

had more negotiating power to increase their remuneration and labor conditions.

Taken together, the results indicate positive and sizeable effects of the PEP on per capita consumption, total income, and overall well-being, effects that were robust across the different empirical strategies.

## V. C Exploratory Analysis of the Impacts of PEP

This section explores the effects of the PEP visa on four groups of outcomes: (i) other unexplored labor outcomes that capture labor conditions, (ii) integration into Colombian society, (iii) food security and immunization, and (iv) COVID-19 resilience.<sup>19</sup> Variables included in each index are described in detail in Appendix I. The estimated effects of the PEP program for each index are in Table 4 along with q-values for the possible false discovery rates. The estimates in panel A, which illustrates the estimates of the RDD, do not allow us to distinguish any statistically significant effects of the PEP program in any of the indexes we explored. However, the results are statistically significant and suggest positive changes for the ITT (panel B) and 2SLS (panel C) estimates. Due to the different values of the point estimates, it is not possible to make a strong conclusion concerning the effects of the program on these outcomes.

Nonetheless, the ITT and 2SLS results for the four indexes suggest a positive effect of the program and point to mechanisms that might have driven the improvements in PEP holders' well-being. First, the coefficient estimate for the labor market index is between 0.18 and 0.2 sd higher for PEP holders. Besides improving access to formal labor markets, regularization seems to have improved overall labor conditions for migrants who said they were more satisfied with their job, had transitioned to better jobs, and had higher reservation wages. Second, the food security index, which is between 0.24 and 0.27 sd higher for PEP holders, is in line with the positive impact on aggregate consumption

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<sup>19</sup>For each case, an index was created as a combination of up to five variables. Each variable was standardized, then all variables were averaged to form an index, and the index was standardized again to simplify its interpretation.

that seems to have translated to a lower frequency of food insecurity. Third, regularization apparently increased the ability of households to cope with the negative economic shock of COVID-19. The COVID-19 resilience index is between 0.22 and 0.27 sd higher for PEP holders, driven by fewer house evictions and less reliance on help from family and friends. Lastly, the amnesty program seems to have strengthened the integration process for regularized migrants, who more frequently reported feeling part of Colombian society and their neighborhoods, and had more friends from the host communities, resulting in a coefficient estimate between 0.18 and 0.24 sd higher for regularized migrants.

#### **V. D Heterogeneous Analysis**

This section presents an analysis of the heterogeneous effects of the PEP program by gender, education (less and more than high school), occupation (high-skilled vs. low-skilled occupation), and type of city (main vs. smaller city). These stratification variables were used to construct the sample. The analysis is centered on the ITT estimates since the fuzzy RDD estimates have a small sample and become imprecise once the sample is restricted to specific groups. Additionally, the 2SLS method requires a second instrument as some of these variables could be endogenous to the program. As such, these estimates should be interpreted as correlations and not causal effects.

The results are in Appendix J and suggest that the effects of the program were stronger for more educated individuals, those in high-skilled occupations, and those who resided in main cities. Concerning gender effects, women seemed to have more access to social safety nets but reduced their labor force participation relative to men. Qualitative evidence suggests these correlations may be due to a recomposition of household activities in which men took better jobs and women stayed home with responsibility for children and chores.

## VI DISCUSSION

This paper analyzes the short-term effects of a large and generous government regularization program on life outcomes for Venezuelan refugees in Colombia. The amnesty not only granted forced migrants a work permit but also gave them access to all government safety nets in Colombia for two years.

Our main conclusion is that migrants with a PEP visa had overall better well-being than other migrants. For example, migrants with a PEP visa had higher consumption per capita, income, better physical and mental health, and greater access to safety nets and financial markets, relative to other migrants. As such, migrants with a PEP visa became more self-sufficient compared to migrants without access to the amnesty.

However, the amnesty effects on the labor formalization of migrants were approximately 10 pp. Although the impact is not negligible, the formalization rates of regularized migrants are still one-fifth of those for the host population. This could be due to a combination of factors. First, the pandemic and the consequent economic crisis made additional job creation difficult. Second, migrants reported other hurdles that prevented them from securing formal employment, including the struggle to get a bank account. Third, some formal firms might not have recognized the validity of the PEP visa. Fourth, Venezuelan refugees might have been reluctant to move to formal employment as they would have to pay taxes. Previous work by [Bahar et al. \(2021\)](#) suggests there is a large premium for working in the formal sector in Colombia, so the last hypothesis is an unlikely explanation for this result). Fifth, there might not have been demand for workers in the formal sector. According to the Colombian Statistics Agency, informal employment accounted for roughly half of the total employed population in 2019. As such, formal jobs likely are available for individuals who have high education, are well-connected, and have been working in Colombia for many years. Refugees have fewer networks and—even if educated—face barriers to education certification and validation. Future research



should evaluate the effectiveness of interventions that target these barriers to increase the formalization rate of refugees.

Our key distinction concerning the effects of migration amnesties in the Global South is that migrants in countries with large informal sectors are already part of the informal sector even without a job permit. Thus, these amnesties do not give migrants the right to work per se, but instead provide them access to the formal sector. As such, the granting of a permit may or may not allow all workers to join the formal sector, but it improves migrants' material labor conditions, gives them access to social safety nets, and improves their well-being.

Previous findings by [Bahar et al. \(2021\)](#) suggest that PEP had negligible effects on Colombian labor markets, specifically precisely zero effects for Colombian native workers. The combination of those results and ours, which point to large and positive effects of the program on migrant welfare, argues strongly for refugee formalization.

Missing from this puzzle, of course, are the domestic fiscal and political impacts of the PEP program. Although these effects are outside the scope of this paper, early evidence by [Rozo et al. \(2022\)](#) suggests that PEP has not impacted voting behaviors or political perceptions. Moreover, recent work by [Clemens \(2021\)](#) on the fiscal impacts of migrants in the United States indicates positive effects even for an average recent immigrant with less than a high school education. However, the sizeable short-term effects of the PEP program along several dimensions suggest that providing the same rights to migrants might in the long run be a more effective policy to reduce aid dependency than traditional humanitarian programs.

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## VII Figures

Figure 1. Registry and Program Roll-out: RAMV census registration, PEP application, and data collection

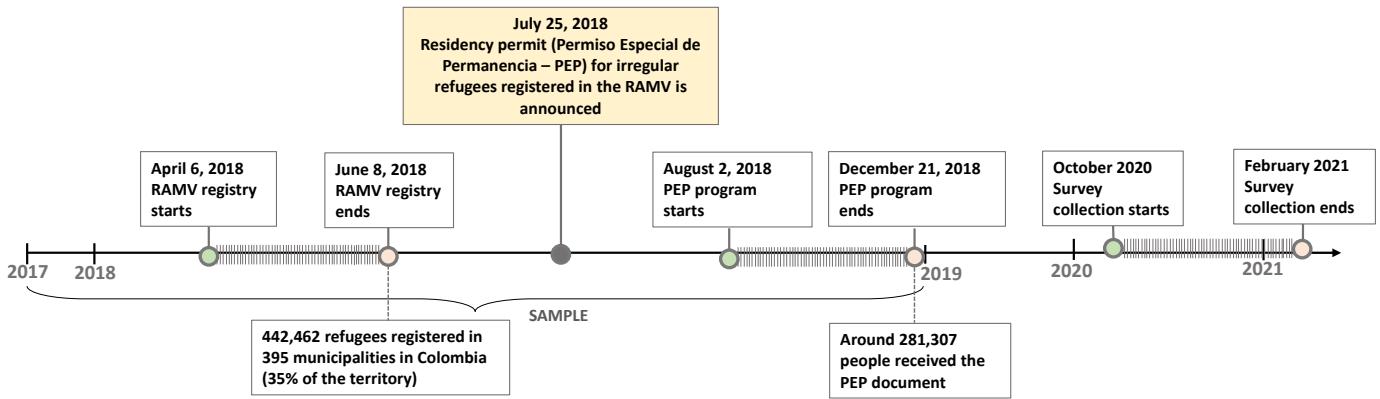
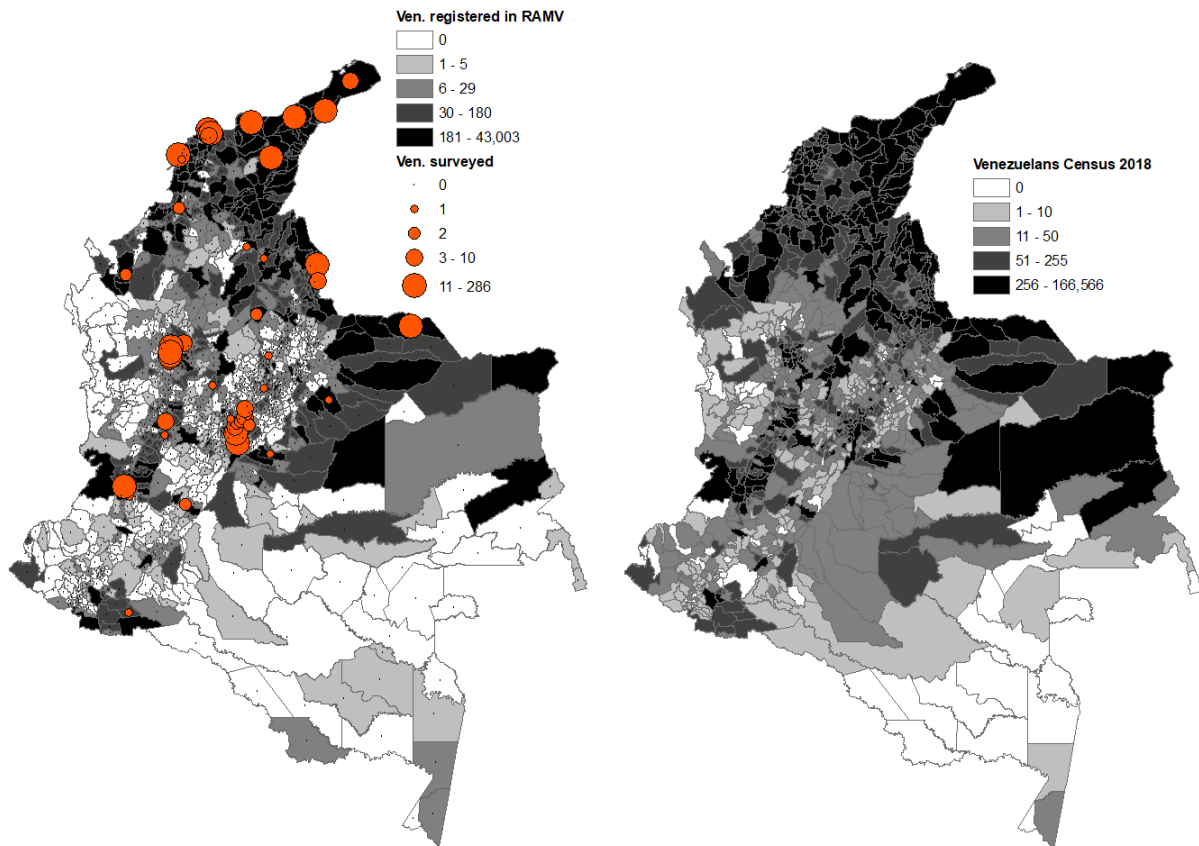


Figure 2. Sample and Distribution of Venezuelans in Colombia

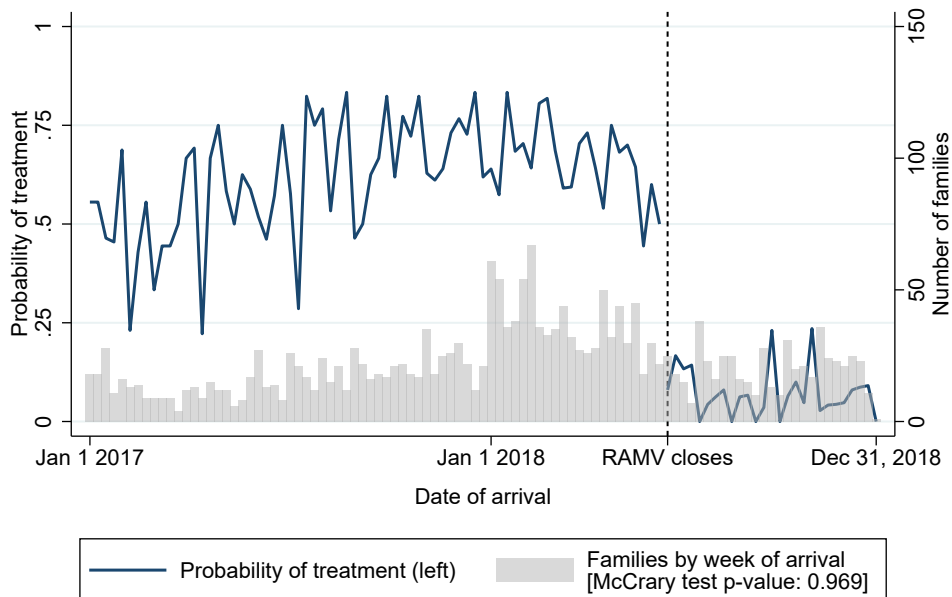


*Notes:* The left-hand panel of the figure illustrates in shades the number of Venezuelans registered in the RAMV census; the orange circles depict the surveys carried out per municipality. The right-hand panel illustrates the number of Venezuelans per municipality reported in the 2018 Colombian census, a proxy of the overall distribution of refugees in the country. As noted in the box between the two panels, the correlation between the sample and the 2018 Colombian census registry is 0.93.

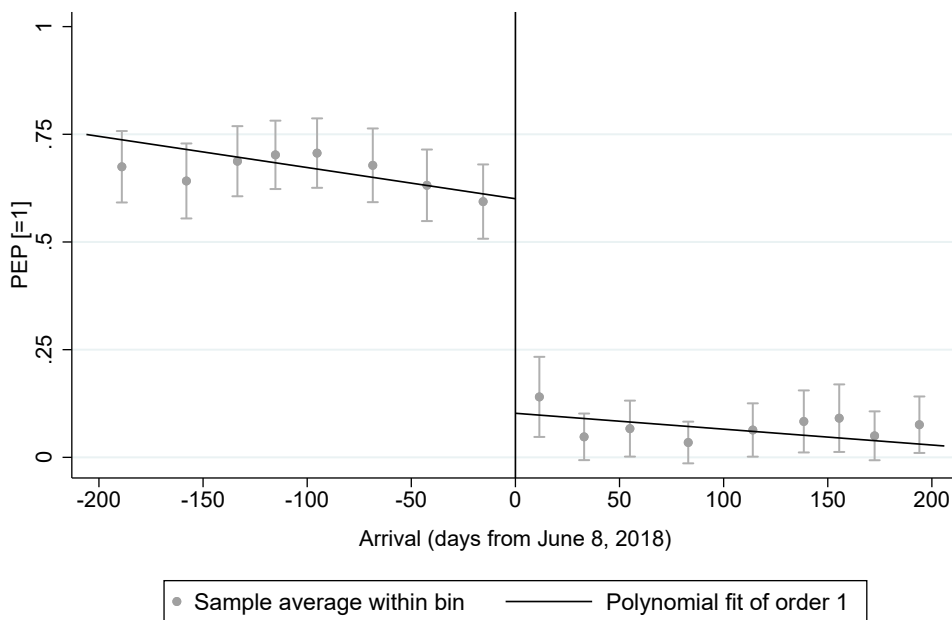


Figure 3. Discontinuity in the Probability of Treatment on June 8, 2018

Panel A: Probability of treatment by week of arrival

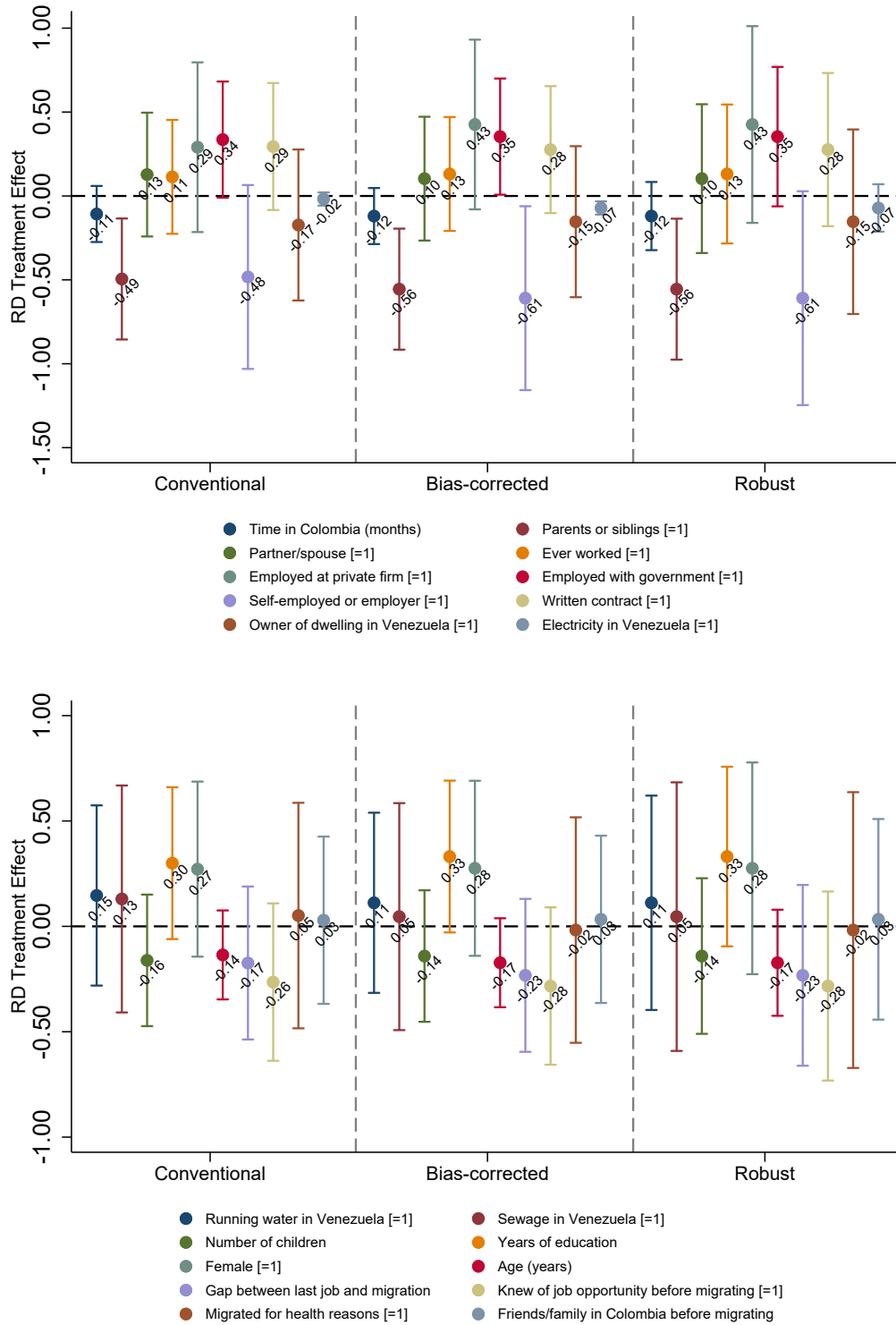


Panel B: RD plot with fitted global polynomial of degree 1



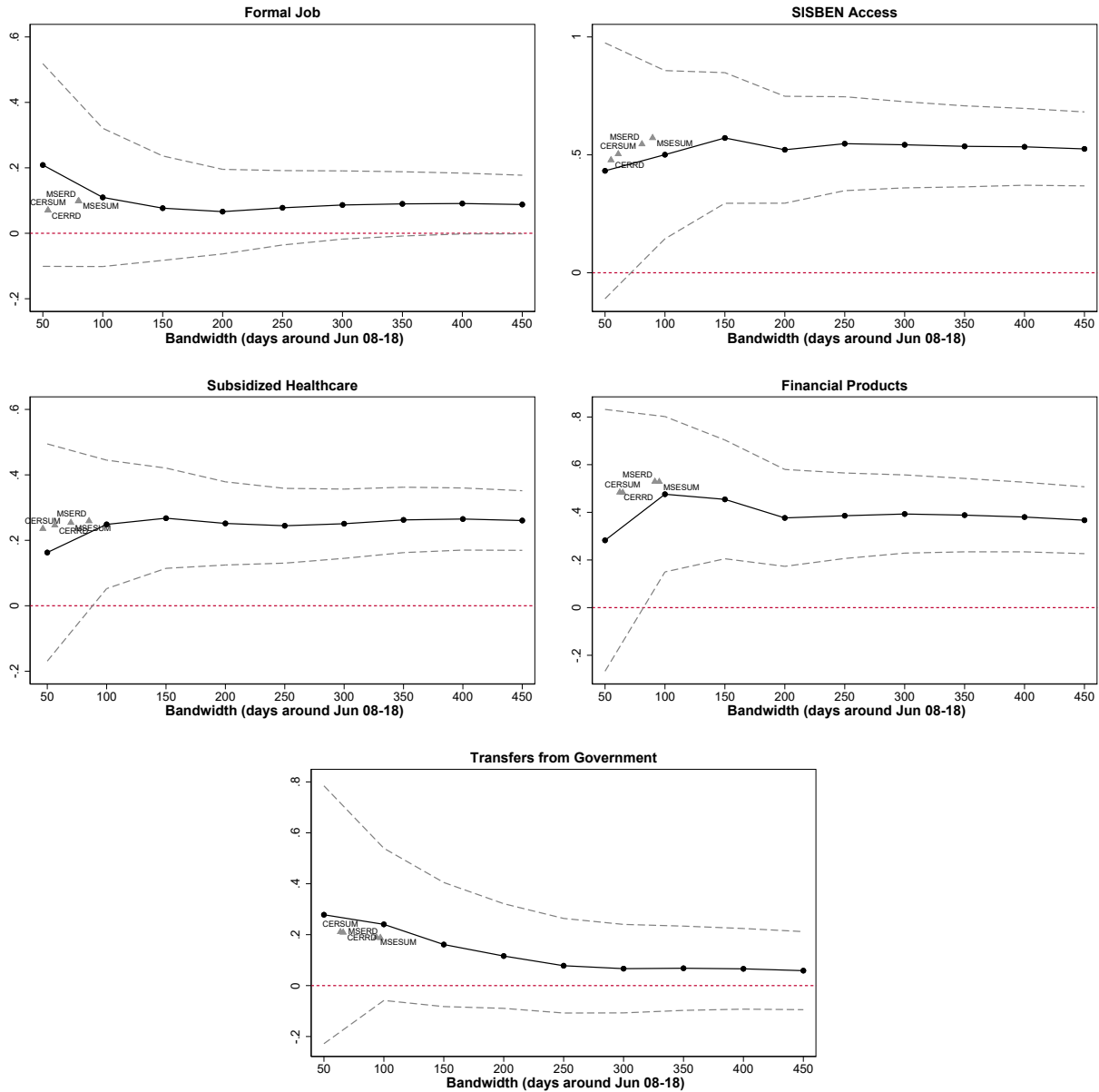
Notes: Panel A illustrates the weekly probability of treatment for all of the sample on a weekly basis (blue line) and the number of observations in each week in the survey (gray bars). Panel B illustrates the discontinuity in treatment probability for 200 days around June 8, 2018, when the RAMV census closed. The bars illustrate 95% confidence intervals.

Figure 4. Validity of the Local Continuity Assumption



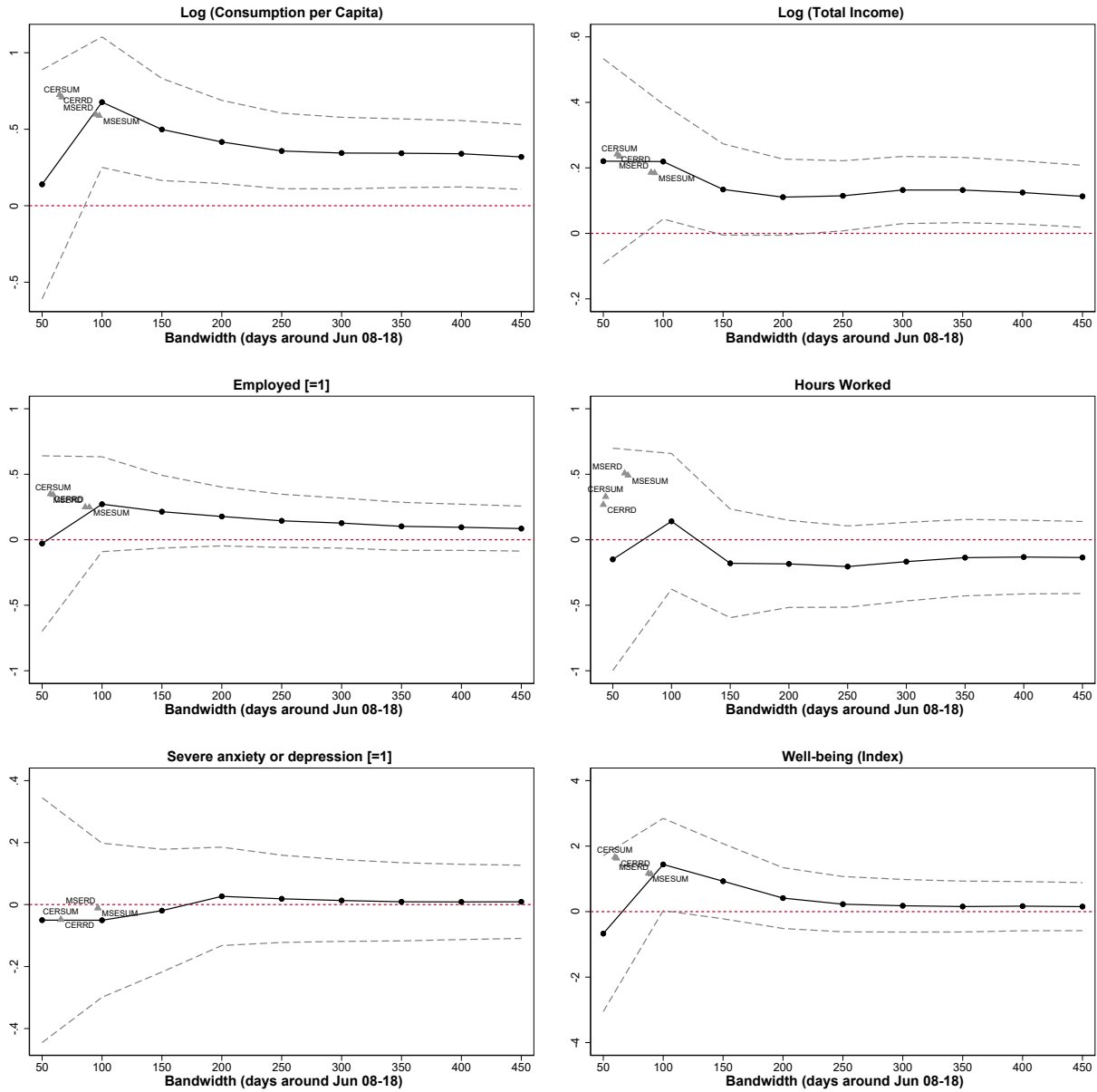
Notes: The figure depicts sharp-RDD model results using the standardized premigration and pre-RAMV controls as outcome variables. These variables correspond to all the controls described in Equation (3) and specified in our preanalysis plan. The estimation uses a triangular kernel and a common MSERD optimal bandwidth.

Figure 5. Mechanical Outcomes Using Different Bandwidths



Notes: Robust bias-corrected point estimators and confidence intervals for different bandwidths measured in days around June 8, 2018. In black, manually input ad hoc bandwidths with a frequency of 20 days. In gray, optimal bandwidths according to different methodologies: (i) mean squared error (MSE), (ii) MSE for the sum of regression estimates (MSESUM), (iii) coverage error rate (CER), (iv) CER for the sum of regression estimates (CERSUM). We run the same specification specified in Table 2. Confidence intervals at 95% level of significance.

Figure 6. Primary Outcomes Using Different Bandwidths (RD estimates)



Notes: Robust bias-corrected point estimators and confidence intervals for different bandwidths measured in days around June 8, 2018. In black, manually input ad hoc bandwidths with a frequency of 20 days. In gray, optimal bandwidths according to different methodologies: (i) mean squared error (MSE), (ii) MSE for the sum of regression estimates (MSESUM); (iii) coverage error rate (CER), (iv) CER for the sum of regression estimates (CERSUM). We run the same specification specified in Table 3. Confidence intervals at 95% level of significance.

## VIII Tables

Table 1. Descriptive Statistics: baseline and control variables

	Non-RAMV	RAMV	PEP	Mean diff. (p-value) Non-RAMV vs. RAMV	Mean diff. (p-value) Non-RAMV vs. PEP
	(1)	(2)	(3)	(4)	(5)
<b>Panel A: Demographic variables</b>					
Time in Colombia (months)	40.484 (9.147)	45.834 (10.371)	46.015 (10.120)	0.000	0.000
Age (years)	31.971 (8.870)	35.467 (9.294)	35.454 (9.235)	0.000	0.000
Female [=1]	0.470 (0.499)	0.330 (0.470)	0.337 (0.473)	0.000	0.0001
Size of household roster	3.635 (1.487)	3.412 (1.662)	3.363 (1.672)	0.001	0.000
Number of children	1.803 (1.268)	1.455 (1.308)	1.437 (1.317)	0.000	0.000
<b>Panel B: Socioeconomic variables (Info. in Venezuela before the migration)</b>					
Years of education	12.873 (2.953)	13.495 (2.789)	13.489 (2.795)	0.000	0.000
Ever worked [=1]	0.966 (0.181)	0.978 (0.146)	0.980 (0.141)	0.078	0.0518
Employed at private firm [=1]	0.605 (0.489)	0.605 (0.489)	0.598 (0.491)	0.974	0.723
Employed with government [=1]	0.140 (0.347)	0.152 (0.359)	0.155 (0.362)	0.410	0.325
Self-employed or employer [=1]	0.168 (0.374)	0.194 (0.395)	0.197 (0.398)	0.109	0.073
Written contract [=1]	0.446 (0.497)	0.568 (0.496)	0.572 (0.495)	0.000	0.000
Owner of dwelling in Venezuela [=1]	0.868 (0.339)	0.868 (0.339)	0.867 (0.340)	0.971	0.950
Electricity in Venezuela [=1]	0.994 (0.079)	0.994 (0.079)	0.993 (0.082)	0.984	0.885
Running water in Venezuela [=1]	0.855 (0.353)	0.882 (0.323)	0.883 (0.322)	0.057	0.056
Sewage in Venezuela [=1]	0.930 (0.256)	0.938 (0.242)	0.937 (0.242)	0.434	0.465
<b>Panel C: Migration variables</b>					
Friends/family in Col. before migrating	0.745 (0.436)	0.706 (0.456)	0.707 (0.455)	0.040	0.049
Friends/family helped upon arrival	0.586 (0.493)	0.583 (0.493)	0.584 (0.493)	0.864	0.916
Knew of job opportunity before migrating [=1]	0.344 (0.475)	0.323 (0.468)	0.327 (0.469)	0.281	0.409
Migrated for health reasons	0.097 (0.296)	0.113 (0.316)	0.114 (0.317)	0.233	0.214
Had smartphone [=1]	0.510 (0.500)	0.652 (0.476)	0.663 (0.473)	0.000	0.000
Observations	1,122	1,110	1,039		

*Notes:* The table reports data on refugees' demographic variables, premigration socioeconomic characteristics, and migration process variables, as well as the differences between the subsample of the surveyed frame (Non-RAMV vs. RAMV) and (Non-RAMV vs. PEP). Subsample frame variables are defined as follows: (i) Non-RAMV includes refugees who were in Colombia at the time RAMV was implemented but who did not register, and refugees who arrived in Colombia immediately after RAMV had been completed; (ii) RAMV includes refugees who had registered in RAMV and thus were eligible for PEP; and (iii) PEP includes refugees who had registered in RAMV and were issued the PEP permit.

Table 2. Impacts of PEP Visa on Mechanical Outcomes

	Formal Job	SISBEN Access	Subsidized Healthcare	Financial Products	Transfers from Government
	(1)	(2)	(3)	(4)	(5)
<i>Panel A: RDD</i>					
1[PEP <sub>i</sub> = 1]	0.109 (0.128)	0.434*** (0.162)	0.193 (0.167)	0.643*** (0.153)	0.172 (0.157)
q-value	[0.315]	[0.006]	[0.172]	[0.001]	[0.172]
Obs. Left	208	302	237	278	274
Obs. Right	493	647	454	622	591
<i>Panel B. ITT</i>					
1[RAMV <sub>ij</sub> = 1]	0.097*** (0.014)	0.461*** (0.018)	0.297*** (0.017)	0.193*** (0.016)	0.080*** (0.015)
q-value	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
R-squared	0.122	0.303	0.189	0.143	0.035
Observations	1,547	2,089	2,074	2,097	2,098
<i>Panel C. Re-weighted 2SLS</i>					
1[RAMV <sub>ij</sub> = 1]	0.082*** (0.011)	0.475*** (0.016)	0.260*** (0.015)	0.215*** (0.013)	0.043*** (0.012)
q-value	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
F-stat	5,030	6,316	6,238	6,295	6,344
R-squared	0.128	0.235	0.152	0.137	0.092
Observations	165,418	235,052	232,721	235,270	236,237
Mean values (Ineligible migrants)	0.001	0.021	0.066	0.032	0.063
Outcome Level	Individual	Individual	Household	Individual	Individual

*Notes:* Dependent variables: (i) Formal Job is a dummy [=1] if respondent has written/verbal contract and saves in a pension fund; (ii) SISBEN Access is a dummy [=1] if the respondent is enrolled in the vulnerability assessment system; (iii) Subsidized Healthcare is a dummy [=1] if the respondent benefits from public healthcare; (iv) Financial Products is a dummy [=1] if the respondent has a savings account or other financial or banking products; (v) Transfers from Government is a dummy [=1] if the respondent received transfers from any official social assistance program. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, and years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, had a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

Table 3. Impacts of PEP Visa on Primary Outcomes

	Consumption per Capita (log) (1)	Income (log) (2)	Employed [=1] (3)	Hours Worked (log) (4)	Symptoms of severe Anxiety/ Depression [=1] (5)	Well-being (Index) (6)
<i>Panel A. RDD</i>						
1[PEP <sub>i</sub> = 1]	0.597** (0.239)	0.308** (0.126)	0.267 (0.202)	0.462 (0.443)	-0.067 (0.169)	1.765* (1.017)
q-value	[0.042]	[0.042]	[0.179]	[0.285]	[0.360]	[0.146]
Obs. Left	315	225	532	128	223	224
Obs. Right	677	480	1046	270	438	440
<i>Panel B. ITT</i>						
1[RAMV <sub>ij</sub> = 1]	0.146*** (0.023)	0.107*** (0.012)	0.048*** (0.018)	-0.033 (0.036)	-0.024** (0.011)	0.198*** (0.072)
q-value	[0.001]	[0.001]	[0.005]	[0.054]	[0.011]	[0.005]
R-squared	0.136	0.209	0.181	0.065	0.034	0.074
Observations	2,200	1,784	3,382	1,206	2,100	2,100
<i>Panel C. Re-weighted 2SLS</i>						
1[RAMV <sub>ij</sub> = 1]	0.139*** (0.018)	0.116*** (0.008)	0.033*** (0.012)	0.034 (0.024)	-0.025*** (0.007)	0.162*** (0.059)
q-value	[0.001]	[0.001]	[0.004]	[0.024]	[0.002]	[0.004]
F-stat	6,501	6,364	12,314	5,834	6,355	6,355
R-squared	0.177	0.283	0.275	0.149	0.093	0.202
Observations	258,581	181,201	344,054	123,981	236,239	236,239
Mean values (Ineligible migrants)	1.154	0.351	0.561	3.937	0.071	0.013
Outcome Level	Household	Individual	Individual	Individual	Individual	Individual

*Notes:* Dependent variables: (i) Annual consumption (log) is the logarithm of annual consumption per capita in million COP; (ii) Income (log) is the logarithm of the monthly labor income which includes wage, extra pay, and revenue from independent work in million COP; (iii) Employed is a dummy [=1] if reported as employed, and has a wage (includes independents and family workers); (iv) Hours worked (log) is the logarithm of weekly hours worked; (v) Symptoms of severe Anxiety/Depression is a dummy [=1] if the respondent has extreme symptoms for anxiety or depression; and (vi) Well-being Index is a PCA index constructed using respondent answers on a 1–10 well-being scale for the following variables: mobility, anxiety and depression, daily activities, personal care, pain and fatigue, and health perception. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, and years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, had a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Robust standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

Table 4. Exploring Other Impacts of the PEP Program

Dep. Variables in STD.	Labor Outcomes (Index) (1)	Food Security (Index) (2)	Integration (Index) (3)	Covid-19 Resilience (Index) (4)
<i>Panel A. RDD</i>				
1[PEP <sub>i</sub> = 1]	-0.479 (0.450)	0.267 (0.486)	-0.174 (0.563)	0.639 (0.591)
q-value	[1.00]	[1.00]	[1.00]	[1.00]
Obs. Left	291	279	275	253
Obs. Right	530	622	602	484
<i>Panel B. ITT</i>				
1[RAMV <sub>ij</sub> = 1]	0.183*** (0.045)	0.271*** (0.049)	0.177*** (0.049)	0.265*** (0.049)
q-value	[0.001]	[0.001]	[0.001]	[0.001]
R-squared	0.044	0.054	0.048	0.067
Observations	2,669	2,100	2,100	2,100
<i>Panel C. Re-weighted 2SLS</i>				
1[RAMV <sub>ij</sub> = 1]	0.195*** (0.029)	0.238*** (0.036)	0.243*** (0.035)	0.222*** (0.034)
q-value	[0.001]	[0.001]	[0.001]	[0.001]
R-squared	0.090	0.166	0.090	0.099
F-stat	9,656	6,355	6,355	6,355
Observations	266,768	236,239	236,239	236,239
Mean values (Ineligible migrants)	0.000	0.000	0.000	0.000
Outcome Level	Individual	Individual	Individual	Individual

*Notes:* Dependent variables are at the individual level and are constructed using the methodology of [Kling et al. \(2007\)](#) and the outcomes described in Tables I.1, I.2, I.3, and I.4. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, and years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, had a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Robust standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.



## Appendix A: Benefits of the PEP Program

Table A.1. Benefits PEP-RAMV

	<b>All Refugees</b>	<b>Refugees with RAMV</b>	<b>Refugees with PEP</b>
<b>Education</b>	Nursery, primary and secondary Food and school bus service No No	Nursery, primary and secondary Food and school bus service No No	Nursery, primary and secondary Food and school bus service Promotion across education levels Degree recognition
<b>SISBEN*</b>	No	No	Yes
<b>Health</b>	Emergency care Public health programs Vaccines Prenatal care Prevention campaigns No	Emergency care Public health programs Vaccines Prenatal care Prevention campaigns No	Emergency care Public health programs Vaccines Prenatal care Prevention campaigns Affiliation with the subsidized regime
<b>ICBF**</b>	No No	No No	Childcare Early childhood service
<b>Formal Labor</b>	No	No	Job permit
<b>Financial Services</b>	No	No	Access to the banking sector

Notes: \*SISBEN: score used to target social safety net programs in Colombia, and \*\* ICBF: Colombian Family Welfare Institute.

## Appendix B: Details on the Survey Instrument

The survey was administered in two steps: to ensure we were targeting refugees who fulfilled the characteristics laid out in our sampling frame, and to define with the respondent the best time to call and administer the survey.

We first sent a text message to refugees in the sample that introduced the survey team from IPA, describing the broad objectives of our research project and the monetary incentive for participating in the survey, and mentioning that we would call them in the next few days to conduct the survey. We also included a link to the project's website that had more detailed information.

A few days later, we administered the survey over the phone.<sup>20</sup> We first administered a short screening module to verify if the respondent was eligible and to obtain informed consent for the survey. For RAMV refugees, we asked if they or other family members had registered in the RAMV census and whether they had PEP. For non-RAMV refugees, we asked for their migration date because we only targeted refugees who had arrived in Colombia between January 2017 and December 2018, and if they were older than 18 years, did not have a different PEP, and had a valid passport.<sup>21</sup>

Following the screening, we administered the survey questionnaire focusing on the family head, partner, or on another adult member of the family. We adjusted and trimmed our original questionnaire because of the challenges of conducting phone surveys. For example, we opted against collecting data for the entire household roster because of the limitations imposed by the phone survey, and instead collected the labor module only for the respondent and another member of the nuclear family, either the spouse or other

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<sup>20</sup>We rescheduled the call when the respondent was not available. When we called ineligible respondents, we included them in a raffle for \$50,000 Colombian pesos (approximately \$USD 18).

<sup>21</sup>As discussed above, PEP was also awarded in previous waves to refugees who entered Colombia using a passport and therefore had regular migratory status. By asking if respondents had a Venezuelan passport, we ensured the exclusion of other types of PEP holders who are typically wealthier and better-off.

randomly selected adult.<sup>22</sup>

In total, we collected information from 3,455 Venezuelan families living in Colombia, a sample that is larger than the one we use in our analysis. While our screening was designed to only allow for the participation of Venezuelan refugees in one of the two groups of interest, we did not include additional screening questions for other members of the family. It turns out the sample also included families where some members were Colombian, either at birth or because of nationalization.<sup>23</sup> To guarantee that our results were not confounded by access to the labor market and to other services by these Colombian refugees, we stratified the sample to exclude families with a Colombian citizen 10 years of age or older, and where someone held PEP from a different wave. Our final sample included 2,232 refugee families: 1,110 in the RAMV group and 1,122 in the non-RAMV control group.

1. **Screening:** the screening was designed to be done in a first call to determine the family's eligibility to take part in the survey. The survey (and the screening) was to be answered by any adult in the nuclear family of the person we originally contacted. The person who answered the survey was the main respondent and would be the only one to provide information for themselves. In turn, they had to answer the survey, from a third-person perspective, for all other family members.

In the screening, we asked the main respondent for their age, place of birth, Venezuelan ID number, current city of residence, whether they had a Venezuelan passport, and if they registered in the RAMV census in 2018. If the contact came from the sampling frame of irregular migrants, we asked them if they had PEP and for the date of their arrival in Colombia. For the census sample, we knew this information from

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<sup>22</sup>The nuclear family includes the household head, partner, children, parents, parents-in-law, daughters-in-law, and sons-in-law.

<sup>23</sup>In the 1980s and 1990s, large numbers of Colombians migrated to Venezuela to escape from the socio-economic crisis as well as conflict and drug-related violence. Many of them have now returned to Colombia. Although they too can be considered refugees, they still hold Colombian nationality and can directly access the labor market and public services without PEP.

the data. Only families whose main respondent arrived in Colombia from January 2017 to December 2018 were eligible.

2. **Household Roster:** in the roster, we asked sociodemographic, educational, and PEP-related questions of every member of the nuclear family (household head, partner, children, parents, parents-in-law, daughter/son-in-law):

- Sociodemographic: age, relation to head, citizenship (Colombian and/or Venezuelan) and proof of citizenship, gender, civil status, date of arrival in Colombia, date when they became part of the family, and cities of birth and residence in Venezuela.
- Education: maximum level of education before migration, current level of education and enrollment, degree validation in Colombia, reasons why their degree has not been validated, and whether they have lost a job because the degree is not valid in Colombia.
- PEP: whether they have PEP, date of PEP issue, reason why they do not have PEP, perceived benefits of having PEP, renewal information on PEP (the PEP had to be renewed every two years), and whether they registered in the RAMV census. We also ask about last week's and last month's income, healthcare regimen, and expected length of stay in Colombia.

3. **Labor module:** the main respondent and a second household member of working age had to respond to the labor module. The second member was either the spouse or an adult randomly selected from the roster.

Current employment: questions to classify workers as employed, independent workers, unemployed, or inactive according to the previous week's main activity:

- Employed workers: area of employment, contract, duration of employment, time it took them to find current employment, weekly hours worked, number

of months employed in the past year, size of firm, type of employment (wage workers or independent workers), employment in the gig economy, contributions to pensions, relationship with employer, whether they have a Venezuelan employer, satisfaction at work, sense of being overqualified at work, and desire to change employment.

- Wage workers: mean through which they found employment, monthly wage, payment for extra hours, and other types of payment.
- Independent workers: number of workers employed; whether the business was registered; monthly revenue; type of business (permanent, temporal, or seasonal); frequency of activity (daily, weekly, monthly, etc.); and reason for being an independent worker.
- Unemployed: reason for not finding a job, minimum wage they would accept to work, duration of unemployment, and means through which they were looking for a job.
- Covid-19: We asked about changes of employment because of the Covid-19 crisis. Questions include if the employment status changed and, if so, whether they contributed to pensions in the previous job.

Labor history in Colombia: We asked about the first job in Colombia: mean through which they found employment, area of employment, contract, duration of employment, date when they found first job, type of employment (wage workers or independent workers), relationship with employer, and if employer was Venezuelan. We also asked them about the number of jobs they have had, if they have been unemployed, the duration of the longest period of unemployment, and whether they knew about opportunities for employment before migrating.

Labor history in Venezuela: We asked about the best job they had in Venezuela in

order to capture the full length of the skill downgrade: employment sector, contract, relevance of work with previous training or education, and reason for leaving that job. We also asked about the employment sector of the job immediately before migration and about the gap between the last job and migration.

#### 4. Household Module:

- Migration: time spent in the current municipality of residence, household composition in Venezuela, reasons why partner/spouse/children moved at a different time or stayed in Venezuela, whether they had friends or family in Colombia before migrating, if these people helped upon arrival, and how they helped. We also asked them if they knew of people who had returned to Venezuela and why they did so.
- Health and healthcare:
  - Healthcare: last time they needed it, place where they received healthcare, and reason why they did not receive healthcare if that was the case. We asked if children were on their immunization schedule, if there were pregnant women in the household, if they had access to prenatal care, if any member of the family had a chronic condition, if they received care and had access to medicine.
  - Mental health: We collected the EQ-5D-3L, a mental health scale that has been validated for Colombia, which asks about the perceived difficulties a person has in five dimensions: mobility, personal care, daily activities, pain/discomfort, and anxiety/depression.
  - Covid-19: We asked about symptoms of members of the family. If the household head had symptoms, we asked if they got a test, the result of the test, and the type of healthcare they received. We asked if because of the

pandemic any member of the family had perceived more discrimination, had lower incomes, had been evicted, had had to sublet their dwelling, had been afraid to seek healthcare for fear of deportation, had to borrow money, had received help from NGOs/government or had thought of returning to Venezuela.

- Food insecurity: We asked if the family had ever been without food in Colombia, how many days of the previous week they had protein in at least one meal, and with what frequency a member of the family had to skip a meal before migrating, before the Covid-19 crisis began, and in the previous month.
- Integration into society: We asked how much they felt part of Colombian society and of their neighborhood, if they had Colombian friends, if they were part of an organization of migrants, and if they had ever felt discriminated against, in what context, and how frequently. We also asked if they had access to official services such as SISBEN (the vulnerability assessment system), cash transfer programs, and if they had ever filed a police report, for what reason, and if not, what kept them from doing so.
- Prosocial behavior: We asked them how much they agree or disagree with the following statements: (i) you can trust Colombians/Venezuelans, (ii) you can count on Colombians/Venezuelans even if you don't know them, (iii) Colombians/Venezuelans want to help me, (iv) you can trust the Colombian government, and (v) the Colombian government wants to help me. Half the sample was asked for their opinions on Colombians first and the other half about Venezuelans first to see if the order of the questions affected their answers.
- Housing and connectivity:
  - Housing: We asked about the characteristics of the dwelling in Colombia

and in Venezuela, and if they had access to public services such as energy, water, and sewage. They were also asked to report how many people and how many families lived in the dwelling besides the nuclear family recorded in the household roster.

- Connectivity: We asked about possession of a smartphone and type of data plan in Colombia and in Venezuela, access to internet in Colombia, and the most used social media platforms.
- Consumption and remittances: In the consumption module, we asked respondents to tell us how much the household spent on different food and services categories the last time they bought them. We also asked them for the total expenditure of the family and the total expenditure on food.



## Appendix C: Differences in surveyed population

Table C.1. Difference between Surveyed Population Contacted by Migrant Organizations and Migrant Referrals

	Referrals	Organizations Bases	Mean diff. (Standard Error)	Mean diff. (P-value)	Observations
<b>Panel A. Mechanical Outcomes</b>					
Formal job	0	0	0	0.36	744
In SISBEN	0.02	0.02	0.01	0.68	1,039
Subsidized healthcare	0.02	0.01	0.01	0.57	1,036
Financial products	0.03	0.03	0.01	0.9	1,037
Transfers from Government	0.07	0.07	0.02	0.97	1,037
<b>Panel B. Primary Outcomes</b>					
Total income	0.36	0.37	0.02	0.63	667
Employed [=1]	0.73	0.7	0.03	0.16	1,039
Hours worked	4.02	3.94	0.05	0.13	404
Chronic anxiety/depression [=1]	0.07	0.08	0.02	0.55	1,039
PCA Well-being	0.01	0	0.1	0.94	1,039
<b>Panel C. Controls All Regressions</b>					
Household Venezuela: parents or siblings [=1]	0.46	0.5	0.03	0.17	1,039
Household Venezuela: partner/spouse [=1]	0.52	0.49	0.03	0.24	1,039
Household Venezuela: others [=1]	0.13	0.11	0.02	0.42	1,039
Knew of job opportunity before migrating [=1]	0.33	0.36	0.03	0.33	1,039
Ever worked [=1]	0.98	0.95	0.01	0.04	1,039
Employed at private firm [=1]	0.59	0.62	0.03	0.48	1,039
Employed with Government [=1]	0.15	0.13	0.02	0.52	1,039
Self-employed or employer [=1]	0.18	0.16	0.02	0.59	1,039
Written contract [=1]	0.46	0.43	0.03	0.28	1,039
Gap between last job and migration (months)	0.79	0.81	0.21	0.93	1,039
Years of education before migration	13.06	12.65	0.18	0.03	1,039
Migrated for health reasons	0.1	0.1	0.02	0.8	1,039
Friends/family in Colombia	0.75	0.76	0.03	0.81	1,039
Had smartphone [=1]	0.53	0.48	0.03	0.12	1,039
Owner of dwelling in Venezuela [=1]	0.88	0.85	0.02	0.22	1,039
Electricity in Venezuela [=1]	1	0.99	0.01	0.2	1,039
Running water in Venezuela [=1]	0.85	0.86	0.02	0.78	1,039
Sewage in Venezuela [=1]	0.93	0.93	0.02	0.73	1,039
Female [=1]	0.51	0.43	0.03	0.02	1,039
Age (years)	32.07	31.66	0.55	0.44	1,039
Number of children	1.71	1.47	0.09	0.01	1,039

## Appendix D: Reason for Not Registering in RAMV and Not Having a PEP Visa

Table D.1. Reason for Not Registering in RAMV

	<b>Non-RAMV</b>
Did not know about RAMV	50.96%
Was not in Colombia	16.87%
Was working	14.57%
Other	7.42%
Fear of deportation	6.60%
Too expensive or complicated	2.02%
No proof of Ven. nationality	1.56%

Table D.2. Reason for Not Having PEP

	<b>Non-RAMV</b>	<b>RAMV- NO PEP</b>
Did not have passport	30.64%	16.13%
Did not know about PEP	21.33%	6.45%
Did not register in RAMV/Census	11.15%	0.00%
Was not in Colombia	9.13%	3.23%
RAMV registration got lost	7.81%	22.58%
Did not know or understand benefits of PEP	7.73%	4.84%
Did not plan to stay in Colombia	4.30%	0.00%
Did not have access to internet	1.84%	3.23%
Did not need it	0.44%	0.00%
Other	5.62%	43.55%

## Appendix E: Descriptive Statistics for Outcomes

Table E.1. Descriptive Statistics: Primary and Mechanical Outcomes

	Non-RAMV	RAMV	PEP	Mean diff. (p-value) Non-RAMV vs. RAMV	Mean diff. (p-value) Non-RAMV vs. PEP
	(1)	(2)	(3)	(4)	(5)
<b>Panel A. Mechanical Outcomes</b>					
Formal job	0.001 (0.035)	0.125 (0.331)	0.131 (0.337)	0.000	0.000
SISBEN access	0.021 (0.145)	0.507 (0.500)	0.514 (0.500)	0.000	0.000
Subsidized healthcare	0.014 (0.119)	0.305 (0.461)	0.324 (0.468)	0.000	0.000
Financial products	0.032 (0.176)	0.252 (0.434)	0.261 (0.439)	0.000	0.000
Transfers from government	0.063 (0.242)	0.147 (0.354)	0.145 (0.353)	0.000	0.000
<b>Panel B. Primary Outcomes</b>					
Consumption per Capita (log)	1.154 (0.463)	1.352 (0.532)	1.365 (0.539)	0.000	0.000
Income (log)	0.351 (0.213)	0.479 (0.253)	0.491 (0.255)	0.000	0.000
Employed [=1]	0.561 (0.496)	0.592 (0.492)	0.646 (0.478)	0.057	0.000
Hours worked (log)	3.937 (0.571)	3.897 (0.541)	3.904 (0.525)	0.188	0.281
Symptoms of severe Anxiety/Depression [=1]	0.071 (0.257)	0.032 (0.175)	0.033 (0.178)	0.000	0.000
Well-being (Index)	0.013 (1.570)	0.157 (1.363)	0.153 (1.354)	0.020	0.027
Observations	1,122	1,110	1,039		

*Notes:* Mechanical outcomes variables are defined as follows: (i) Formal Job is a dummy [=1] if respondent has written/verbal contract and saves in a pension fund; (ii) SISBEN Access is a dummy [=1] if the respondent is enrolled in the vulnerability assessment system; (iii) Subsidized Healthcare is a dummy [=1] if the respondent benefits from public healthcare; (iv) Financial Products is a dummy [=1] if the respondent has a savings account or other financial or banking products; (v) Transfers from Government is a dummy [=1] if the respondent received transfers from any official social assistance program. Primary outcomes variables are defined as follows: (i) Annual consumption (log) is the logarithm of annual consumption per capita in million COP; (ii) Income (log) is the logarithm of the monthly labor income which includes wage, extra pay, and revenue from independent work in million COP; (iii) Employed is a dummy [=1] if reported as employed, and has a wage (includes independents and family worker); (iv) Hours worked (log) is the logarithm of weekly hours worked; (v) Symptoms of severe Anxiety/Depression is a dummy [=1] if the respondent has extreme symptoms for anxiety or depression; and (vi) Well-being Index is a PCA index constructed using respondent answers on a 1–10 well-being scale for the following variables: mobility; anxiety and depression; daily activities; personal care; pain and fatigue; and health perception. Subsample frame variables are defined as follows: (i) Non-RAMV includes refugees who were in Colombia at the time the RAMV was implemented but who did not register, and refugees who arrived in Colombia immediately after RAMV had been completed; (ii) RAMV includes refugees who had registered in RAMV and thus were eligible for PEP; and (iii) PEP includes refugees who had registered in RAMV and had been issued the PEP permit.

Table E.2. Descriptive Statistics: Secondary Outcomes

	Non-RAMV	RAMV	PEP	Mean diff. (p-value) Non-RAMV vs. RAMV	Mean diff. (p-value) Non-RAMV vs. PEP	Observations
<b>Panel A. Treatment variables</b>						
PEP [=1]	0.000 (0.000)	0.940 (0.237)	1.00 (0.000)	0.000	–	2,161
RAMV [=1]	0.000 (0.000)	1.000 (0.000)	1.000 (0.000)	–	(0.000)	2,161
<b>Panel B. Secondary Outcomes</b>						
Labor Outcomes (Index)	-0.105 (0.998)	0.078 (1.022)	0.087 (1.010)	0.00	0.00	1,955
Reservation Wage	0.552 (0.144)	0.628 (0.144)	0.629 (0.141)	0.00	0.00	354
Wants Change Job	0.681 (0.466)	0.563 (0.496)	0.548 (0.498)	0.00	0.00	1,601
Self-Employed	0.439 (0.497)	0.324 (0.468)	0.317 (0.465)	0.00	0.00	1,595
Independent Permanent	0.752 (0.433)	0.555 (0.498)	0.555 (0.498)	0.00	0.00	621
Works GIG Economy	0.027 (0.163)	0.066 (0.249)	0.069 (0.254)	0.00	0.00	1,601
Food Security (Index)	-0.21 (1.041)	0.066 (0.963)	0.077 (0.955)	0.00	0.00	2,161
Skipped meal last month [=1]	0.399 (0.490)	0.271 (0.445)	0.264 (0.441)	0.00	0.00	2,159
Skipped meal before Covid-19 [=1]	0.255 (0.436)	0.172 (0.377)	0.168 (0.374)	0.00	0.00	2,159
Access to Healthcare [=1]	0.741 (0.438)	0.797 (0.403)	0.802 (0.399)	0.01	0.00	1,615
Children on immunization schedule [=1]	0.821 (0.384)	0.822 (0.382)	0.816 (0.388)	0.94	0.64	1,640
Integration (Index)	-0.146 (1.007)	0.115 (0.980)	0.129 (0.972)	0.00	0.00	2,161
Feels part of Colombian society	0.646 (0.479)	0.781 (0.414)	0.785 (0.411)	0.00	0.00	2,158
Feels part of neighborhood	0.644 (0.479)	0.721 (0.448)	0.726 (0.446)	0.00	0.00	2,160
Colombian friends	0.35 (0.477)	0.45 (0.498)	0.451 (0.498)	0.00	0.00	2,161
Ever felt discrimination	0.501 (0.500)	0.529 (0.499)	0.521 (0.500)	0.21	0.46	2,158
Trusts Colombian government	0.563 (0.496)	0.635 (0.482)	0.636 (0.481)	0.00	0.00	2,099
Covid-19 Resilience (Index)	-0.159 (1.037)	0.103 (0.970)	0.1 (0.973)	0.00	0.00	2,161
Head had symptoms	0.175 (0.380)	0.211 (0.408)	0.213 (0.409)	0.04	0.04	2,161
Housing eviction	0.332 (0.471)	0.204 (0.403)	0.204 (0.403)	0.00	0.00	2,159
Sale of asset	0.462 (0.499)	0.369 (0.483)	0.364 (0.481)	0.00	0.00	2,160
Received help in cash/kind	0.457 (0.498)	0.369 (0.483)	0.373 (0.484)	0.00	0.00	2,161

## Appendix F: Validity of the Local Continuity Assumption

Table F.1. Validity of the local continuity assumption

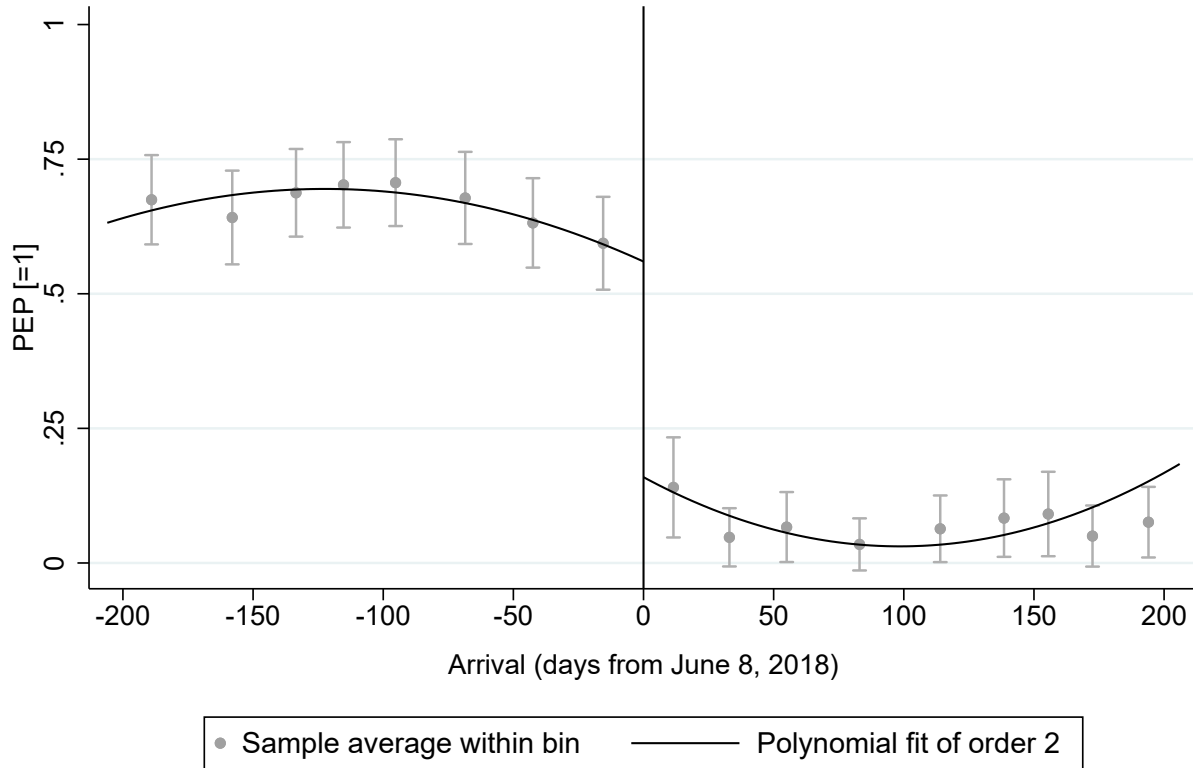
	HH. Venezuelan parents or siblings [=1] (1)	HH. Venezuelan partner or spouse [=1] (2)	Number of children (3)	Years of educ. before migration (4)	Female [=1] (5)	Age (years) (6)	Knew job opportunity before migration [=1] (7)	Ever worked [=1] (8)	Employed at private firm [=1] (9)	Employed with government [=1] (10)
Conventional	-0.244 (0.091)	0.062 (0.092)	-0.251 (0.247)	0.880 (0.539)	0.136 (0.106)	-2.325 (1.849)	-0.127 (0.092)	0.017 (0.027)	0.143 (0.127)	0.119 (0.063)
Bias-corrected	-0.274 (0.091)	0.051 (0.092)	-0.219 (0.247)	0.973 (0.539)	0.138 (0.106)	-2.963 (1.849)	-0.136 (0.092)	0.020 (0.027)	0.210 (0.127)	0.125 (0.063)
Robust	-0.274 (0.106)	0.051 (0.111)	-0.219 (0.293)	0.973 (0.638)	0.138 (0.128)	-2.963 (2.205)	-0.136 (0.110)	0.020 (0.032)	0.210 (0.148)	0.125 (0.075)
Observations	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219
Effective Obs. left	215	226	231	205	187	141	209	223	121	235
Effective Obs. right	381	447	457	352	324	250	367	429	205	435
Bandwidth left	82.54	94.44	96.32	76.14	68.06	53.64	80.05	91.01	45.95	93.28
Bandwidth right	82.54	94.44	96.32	76.14	68.06	53.64	80.05	91.01	45.95	93.28

	Self-employed or employer [=1] (11)	Written contract [=1] (12)	Gap between last job and migration (months) (13)	Migrated for health reasons [=1] (14)	Friends or family in Colombia (15)	Had smartphone [=1] (16)	Owner of dwelling in Ven. [=1] (17)	Electricity in Ven. [=1] (18)	Running water in Ven. [=1] (19)	Sewage in Ven. [=1] (20)
Conventional	-0.183* (0.106)	0.146 (0.096)	-0.659 (0.701)	0.016 (0.086)	0.013 (0.090)	0.055 (0.098)	-0.061 (0.081)	-0.001 (0.002)	0.050 (0.074)	0.033 (0.070)
Bias-corrected	-0.231** (0.106)	0.137 (0.096)	-0.880 (0.701)	-0.006 (0.086)	0.015 (0.090)	0.077 (0.098)	-0.054 (0.081)	-0.005*** (0.002)	0.038 (0.074)	0.012 (0.070)
Robust	-0.231* (0.123)	0.137 (0.116)	-0.880 (0.829)	-0.006 (0.105)	0.015 (0.108)	0.077 (0.117)	-0.054 (0.099)	-0.005 (0.006)	0.038 (0.088)	0.012 (0.082)
Observations	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219
Effective Obs. left	147	216	215	151	175	209	204	126	174	166
Effective Obs. right	271	408	384	273	316	367	339	218	310	293
Bandwidth left	55.38	85.06	83.41	56.82	66.9	80.02	73.14	47.05	65.73	60.6
Bandwidth right	55.38	85.06	83.41	56.82	66.9	80.02	73.14	47.05	65.73	60.6

Notes: The table depicts the sharp-RDD model results of premigration and pre-RAMV controls used as outcome variables. These variables correspond to all the controls described in Equation (3) and specified in our preanalysis plan.

## Appendix G: RD plot with Quadratic Fitted Polynomial

Figure G.1. RD Plot with Fitted Global Polynomial of Degree 2



*Notes:* The figure illustrates the discontinuity in treatment probability 200 days around June 8, 2018, when the RAMV census closed. The bars illustrate 95% confidence intervals.

## Appendix H: Sector Change

Table H.1. Sector Change between the First Job in Colombia and Current Job in Colombia

	PEP-RAMV [=1]	PEP-RAMV [=0]	Difference PEP [=1]-PEP [=0]	Mean-Diff. (P-value)	Obs.
<b>Panel A. Sector Change [=1]</b>					
Total income	0.54	0.38	0.16***	0	463
Years of education before migration	14.01	13.28	0.73***	0	500
Hours worked	3.85	3.92	-0.07	0.25	331
Annual consumption	1.48	1.19	0.29***	0	500
<b>Panel B. Sector Change [=0]</b>					
Total income	0.5	0.39	0.11***	0	283
Years of education before migration	13.42	13.24	0.18	0.56	321
Hours worked	3.98	4.03	-0.05	0.41	209
Annual consumption	1.37	1.15	0.22***	0	321

Table H.2. Sector Change between the Best Job in Venezuela and the Current Job in Colombia

	PEP-RAMV [=1]	PEP-RAMV [=0]	Difference PEP [=1]-PEP [=0]	Mean-Diff. (P-value)	Obs.
<b>Panel A. Sector Change [=1]</b>					
Total income	0.51	0.35	0.16***	0	990
Years of education before migration	13.62	13.09	0.53***	0	1,086
Hours worked	3.91	3.95	-0.04	0.26	654
Annual consumption	1.42	1.17	0.25***	0	1,086
<b>Panel B. Sector Change [=0]</b>					
Total income	0.5	0.41	0.09***	0	401
Years of education before migration	13.72	12.8	0.92***	0	444
Hours worked	3.94	3.98	-0.04	0.54	265
Annual consumption	1.38	1.18	0.2***	0	444

## Appendix I: Impacts of PEP on Secondary Outcomes

Table I.1. Impacts of PEP visa on Secondary Labor Outcomes

	Labor Outcomes (Index in STD.) (1)	Reservation Wage (2)	Wants to Change Job (3)	Self Employed (4)	Independent Permanent (5)	Work GIG Economy (6)
<i>Panel A. RD Estimates</i>						
1[PEP <sub>i</sub> = 1]	-0.479 (0.450)	0.122 (0.083)	-0.037 (0.295)	-0.362 (0.278)	-0.575 (0.453)	-0.046 (0.074)
q-value	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]
Obs. Left	291	111	236	242	110	273
Obs. Right	530	174	484	499	254	649
<i>Panel B. ITT Estimates</i>						
1[RAMV <sub>ij</sub> = 1]	0.183*** (0.045)	0.060*** (0.012)	-0.113*** (0.024)	-0.103*** (0.024)	-0.154*** (0.039)	0.036*** (0.010)
q-value	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
R-squared	0.044	0.188	0.081	0.066	0.074	0.051
Observations	2,669	663	2,006	1,993	765	2,006
<i>Panel C. Re-weighted 2SLS</i>						
1[RAMV <sub>ij</sub> = 1]	0.195*** (0.029)	0.071*** (0.006)	-0.121*** (0.016)	-0.145*** (0.016)	-0.187*** (0.026)	0.040*** (0.007)
q-value	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
R-squared	0.090	0.177	0.137	0.120	0.237	0.079
F-stat	9,656	2,957	7,469	7,442	3,663	7,469
Observations	266,768	69,925	196,842	195,776	70,327	196,842
Mean values (Ineligible migrants)	0.000	0.564	0.675	0.429	0.723	0.0259
Outcome Level	Individual	Individual	Individual	Individual	Individual	Individual

*Notes:* Dependent variables are at the individual level: (i) Labor Outcomes Index is constructed using the outcome variables of columns (2) to (6) using the methodology of [Kling et al. \(2007\)](#); (ii) Reservation Wage is the logarithm of the minimum monthly wage in million COP an unemployed worker would accept to take job; (iii) Wants Change Job is a dummy [=1]; (iv) Self-Employed is a dummy [=1] if main occupation is independent or self-employed; (v) Independent Permanent is a dummy [=1] if self-employed workers say their work status is permanent; and (vi) Work GIG Economy is a dummy [=1] if the job performed is through a mobile app or website. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, and years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.



Table I.2. Impacts of PEP visa on Integration

	Integration (Index in STD.)	Feels part of Colombian society	Feels part of neighborhood	Colombian friends	Ever felt discrimination	Trusts Colombian government
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A. RDD</i>						
1[PEP <sub>i</sub> = 1]	-0.174 (0.563)	0.069 (0.291)	0.088 (0.262)	-0.702** (0.352)	-0.560* (0.339)	-0.240 (0.280)
q-value	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]
Obs. Left	275	252	263	212	219	265
Obs. Right	602	478	542	401	430	575
Mean of variable (control group)	0.000	0.650	0.642	0.349	0.505	0.560
<i>Panel B. ITT</i>						
1[RAMV <sub>ij</sub> = 1]	0.177*** (0.049)	0.118*** (0.022)	0.059** (0.023)	0.073*** (0.024)	0.042* (0.025)	0.029 (0.025)
q-value	[0.001]	[0.001]	[0.001]	[0.001]	[0.019]	[0.049]
R-squared	0.048	0.041	0.027	0.051	0.031	0.039
Observations	2,100	2,097	2,099	2,100	2,097	2,040
Mean of variable (control group)	0.000	0.646	0.644	0.350	0.501	0.563
<i>Panel C. Re-weighted 2SLS</i>						
1[RAMV <sub>ij</sub> = 1]	0.243*** (0.035)	0.159*** (0.015)	0.050*** (0.015)	0.078*** (0.018)	0.046*** (0.018)	0.088*** (0.017)
q-value	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]
R-squared	0.090	0.063	0.078	0.093	0.078	0.104
F-stat	6,355	6,344	6,346	6,355	6,340	5,896
Observations	236,239	235,823	235,892	236,239	235,305	226,356
Mean values (Ineligible migrants)	0.000	0.650	0.642	0.349	0.505	0.560
Outcome Level	Individual	Individual	Individual	Individual	Individual	Individual

*Notes:* Dependent variables are at the individual level: (i) Integration Index is constructed using the outcome variables of columns (2) to (6) using the methodology of [Kling et al. \(2007\)](#); (ii) Feel part of Colombian society is a dummy [=1] if the respondent answered very much or somewhat to the question, *how much do you feel part of Colombian society?*; (iii) Feel part of Colombian society is a dummy [=1] if the respondent answered very much or somewhat to the question, *how much do you feel part of your neighborhood?*; (iv) Colombian friends is a dummy [=1] if the respondent reported all or most their friends were from Colombia; (v) Ever felt discriminated against is a dummy [=1]; and (vi) Trust Colombian government is [=1] if the respondent strongly agreed or agreed with the question, *can you trust the Colombian government?*. All columns include department (Antioquia, Atlántico, Bogotá and Norte de Santander) and sampling-city fixed effects. The first column includes the following additional controls: (i) Individual controls: age, gender, and years of education before migration. (ii) Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. (iii) Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. (iv) Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

Table I.3. Impacts of PEP Visa on Food Security and Immunization

	Food security (Index in STD.)	Skipped meal last month [=1]	Skipped meal before Covid-19 [=1]	Access to Healthcare [=1]	Children on immunization schedule [=1]
	(1)	(2)	(3)	(4)	(5)
<i>Panel A. RDD</i>					
1[PEP <sub>i</sub> = 1]	0.267 (0.486)	-0.276 (0.248)	0.113 (0.206)	0.201 (0.309)	0.072 (0.202)
q-value	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]
Obs. Left	279	276	315	211	207
Obs. Right	622	618	684	480	381
<i>Panel B. ITT</i>					
1[RAMV <sub>ij</sub> = 1]	0.271*** (0.049)	-0.100*** (0.023)	-0.078*** (0.020)	0.076*** (0.024)	0.013 (0.022)
q-value	[0.001]	[0.001]	[0.001]	[0.001]	[0.111]
R-squared	0.054	0.066	0.041	0.027	0.036
Observations	2,100	2,098	2,098	1,569	1,592
<i>Panel C. Re-weighted 2SLS</i>					
1[RAMV <sub>ij</sub> = 1]	0.238*** (0.036)	-0.083*** (0.016)	-0.082*** (0.015)	0.043** (0.017)	0.021 (0.014)
q-value	[0.001]	[0.001]	[0.001]	[0.003]	[0.013]
R-squared	0.166	0.202	0.156	0.113	0.214
F-stat	6,355	6,348	6,336	4,727	6,053
Observations	236,239	236,170	235,899	174,862	165,657
Mean values (Ineligible migrants)	0.000	0.391	0.252	0.736	0.825
Outcome Level	Individual	Individual	Individual	Individual	Individual

*Notes:* Dependent variables are at the individual level: (i) Food security (index) is constructed using the outcome variables of columns (2) to (5) using the methodology of [Kling et al. \(2007\)](#); (ii) Skipped meal last month is a dummy [=1]; (iii) Skipped meal before Covid-19 is a dummy [=1]; (iv) Access to Healthcare is a dummy [=1] if the respondent found healthcare when anyone in their household needed it; and (v) Children on immunization schedule is a dummy [=1]. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. The first column includes the following additional controls: (i) Individual controls: age, gender, and years of education before migration. (ii) Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. (iii) Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. (iv) Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

Table I.4. Impacts of PEP Visa on Covid-19 Resilience

	Covid-19 Resilience (Index in STD.) (1)	Housing Eviction (2)	Sale of assets (3)	Received help in cash/kind (4)
<i>Panel A. RDD</i>				
1[PEP <sub>i</sub> = 1]	0.639 (0.591)	-0.418 (0.289)	-0.198 (0.254)	-0.010 (0.253)
q-value	[1.00]	[1.00]	[1.00]	[1.00]
Obs. Left	253	224	255	287
Obs. Right	484	440	499	649
<i>Panel A. ITT</i>				
1[RAMV <sub>ij</sub> = 1]	0.265*** (0.049)	-0.098*** (0.021)	-0.061** (0.024)	-0.076*** (0.024)
q-value	[0.001]	[0.001]	[0.004]	[0.001]
R-squared	0.067	0.066	0.039	0.024
Observations	2,100	2,098	2,099	2,100
<i>Panel C. Re weighted 2SLS</i>				
1[RAMV <sub>ij</sub> = 1]	0.222*** (0.034)	-0.098*** (0.015)	-0.013 (0.017)	-0.083*** (0.017)
q-value	[0.001]	[0.001]	[0.042]	[0.001]
F-stat	0.099	0.125	0.101	0.074
R-squared	6,355	6,335	6,351	6,355
Observations	236,239	235,636	236,238	236,239
Mean of values (Ineligible migrants)	0.000	0.326	0.460	0.446
Outcome Level	Individual	Individual	Individual	Individual

*Notes:* Dependent variables are at the individual level: (i) Covid-19 Resilience (Index) is constructed using the inverted outcome variables of columns (2) to (5) using the methodology of [Kling et al. \(2007\)](#). Dependent variables: (ii) Housing Eviction is a dummy [=1] if the household was evicted from their home due to Covid-19 crisis; (iii) Sale of assets is a dummy [=1] if the head had to sell valuable goods [=1]; and (iv) Received help cash/kind is a dummy [=1] if the head received help in cash or in kind. The first column includes the following additional controls: (i) Individual controls: age, gender, and years of education before migration. (ii) Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. (iii) Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. (iv) Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

## Appendix J: Heterogeneous Effects

Table J.1. Heterogeneous Effects by Female (ITT Estimates)

<i>Dep. variables – Primary Outcomes</i>	<b>Consumption per Capita (log)</b> (1)	<b>Income (log)</b> (2)	<b>Employed [=1]</b> (3)	<b>Hours Worked</b> (4)	<b>Symptoms of severe Anxiety/Depression [=1]</b> (5)	<b>Well-being (Index)</b> (6)
$\beta_1$ =Indiv. reg. in RAMV	0.168*** (0.028)	0.104*** (0.015)	0.042* (0.024)	-0.088** (0.042)	-0.025* (0.014)	0.304*** (0.089)
$\beta_2$ =Indiv. reg. in RAMV * I(Female)	-0.054 (0.042)	0.006 (0.022)	0.011 (0.031)	0.159** (0.066)	0.003 (0.020)	-0.264** (0.130)
$\beta_3$ =I(Female)	-0.023 (0.031)	-0.103*** (0.016)	-0.399*** (0.022)	-0.294*** (0.050)	0.037** (0.015)	-0.242** (0.096)
Diff. female effect ( $\beta_2+\beta_3$ )	-0.078** (0.031)	-0.097*** (0.015)	-0.388*** (0.022)	-0.136*** (0.045)	0.040*** (0.015)	-0.506*** (0.098)
R-squared	0.137	0.209	0.181	0.070	0.034	0.076
Observations	2,200	1,784	3,382	1,206	2,100	2,100
<i>Dep. variables – Mechanical Outcomes</i>	<b>Formal Job</b>	<b>SISBEN Access</b>	<b>Subsidized Healthcare</b>	<b>Financial Products</b>	<b>Transfers from Government</b>	–
$\beta_1$ =Indiv. reg. in RAMV	0.116*** (0.016)	0.425*** (0.023)	0.263*** (0.021)	0.222*** (0.020)	0.034* (0.018)	
$\beta_2$ =Indiv. reg. in RAMV * I(Female)	-0.059** (0.026)	0.090*** (0.033)	0.084*** (0.030)	-0.071** (0.029)	0.117*** (0.027)	
$\beta_3$ =I(Female)	0.011 (0.019)	0.010 (0.024)	0.022 (0.022)	0.014 (0.022)	-0.022 (0.020)	
Diff. Female Effect ( $\beta_2+\beta_3$ )	-0.048** (0.020)	0.099*** (0.025)	0.106*** (0.023)	-0.056** (0.022)	0.095*** (0.020)	
R-squared	0.125	0.306	0.192	0.145	0.044	
Observations	1,547	2,089	2,074	2,097	2,098	

*Notes:* Dependent variables: (i) Annual consumption (log) is the logarithm of annual consumption per capita in million COP; (ii) Income (log) is the logarithm of the monthly labor income which includes wage, extra pay, and revenue from independent work in million COP; (iii) Employed is a dummy [=1] if reported as employed and has a wage (includes independents and family worker); (iv) Hours worked (log) is the logarithm of weekly hours worked; (v) Symptoms of severe Anxiety/Depression is a dummy [=1] if the respondent has extreme symptoms for anxiety or depression; and (vi) Well-being Index is a PCA index constructed using respondent answers on a 1–10 well-being scale for the following variables: mobility; anxiety and depression; daily activities; personal care; pain and fatigue; and health perception. Female corresponds to a dummy [=1] if the respondent reported being female. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children, household size, if had energy, water and sewage [=1], owner of dwelling [=1], and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

Table J.2. Heterogeneous Effects by Education (ITT Estimates)

<i>Dep. variables – Primary Outcomes</i>	<b>Consumption per Capita (log)</b>	<b>Income (log)</b>	<b>Employed [=1]</b>	<b>Hours Worked</b>	<b>Symptoms of severe Anxiety/Depression [=1]</b>	<b>Well-being (Index)</b>
	(1)	(2)	(3)	(4)	(5)	(6)
$\beta_1$ =Indiv. reg. in RAMV	0.106*** (0.040)	0.077*** (0.021)	0.053* (0.031)	-0.029 (0.064)	-0.036* (0.019)	0.309** (0.124)
$\beta_2$ =Indiv. reg. in RAMV * I(>High school)	0.056 (0.046)	0.040* (0.024)	-0.006 (0.035)	0.002 (0.072)	0.015 (0.022)	-0.152 (0.142)
$\beta_3$ =I(>High school)	0.043 (0.038)	-0.000 (0.019)	0.043 (0.027)	-0.021 (0.059)	0.006 (0.018)	0.105 (0.115)
High Education Level Diff. Effect ( $\beta_2+\beta_3$ )	0.099*** (0.038)	0.040** (0.020)	0.037 (0.031)	-0.019 (0.059)	0.021 (0.019)	-0.047 (0.122)
R-squared	0.138	0.213	0.180	0.066	0.035	0.075
Observations	2,182	1,766	3,347	1,194	2,084	2,084
<i>Dep. variables – Mechanical Outcomes</i>	<b>Formal Job</b>	<b>SISBEN Access</b>	<b>Subsidized Healthcare</b>	<b>Financial Products</b>	<b>Transfers from Government</b>	–
$\beta_1$ =Indiv. reg. in RAMV	0.058** (0.024)	0.492*** (0.032)	0.320*** (0.029)	0.134*** (0.028)	0.063** (0.026)	
$\beta_2$ =Indiv. reg. in RAMV * I(>High school)	0.056** (0.027)	-0.039 (0.036)	-0.031 (0.033)	0.083** (0.032)	0.031 (0.029)	
$\beta_3$ =I(>High school)	-0.007 (0.022)	-0.029 (0.030)	0.003 (0.027)	-0.021 (0.026)	-0.063*** (0.024)	
High Education Level Diff. Effect ( $\beta_2+\beta_3$ )	0.048** (0.023)	-0.068** (0.031)	-0.029 (0.029)	0.061** (0.028)	-0.032 (0.025)	
R-squared	0.126	0.305	0.189	0.145	0.040	
Observations	1,532	2,073	2,059	2,081	2,082	

*Notes:* Dependent variables: (i) Annual consumption (log) is the logarithm of annual consumption per capita in million COP, (ii) Income (log) is the logarithm of the monthly labor income which includes wage, extra pay, and revenue from independent work in million COP, (iii) Employed is a dummy [=1] if reported an employed, and has a wage (includes independents and family worker) (iv) Hours worked (log) is the logarithm of weekly hours worked, (v) Symptoms of severe Anxiety/Depression is a dummy [=1] if the respondent has extreme symptoms for anxiety or depression, and (vi) Well-being Index is a PCA index constructed using the respondent answers on a 1-10 well-being scale for the following variables: mobility; anxiety and depression; daily activities; personal care; pain and fatigue; and health perception. High School or more corresponds to a dummy [=1] if the respondent reported having more than high school or middle education and includes having a technical, university, or postgraduate degree. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, and years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

Table J.3. Heterogeneous Effects by Occupation Sector (ITT Estimates)

<i>Dep. variables – Primary Outcomes</i>	Consumption per Capita (log) (1)	Income (log) (2)	Hours Worked (3)	Symptoms of severe Anxiety/Depression [=1] (4)	Well-being (Index) (5)
$\beta_1$ =Indiv. reg. in RAMV	0.163*** (0.026)	0.103*** (0.012)	-0.024 (0.036)	-0.027** (0.011)	0.127* (0.076)
$\beta_2$ =Indiv. reg. in RAMV * I(High Skill Occupation)	-0.201 (0.155)	0.074 (0.069)	-0.411* (0.216)	0.028 (0.061)	-0.103 (0.437)
$\beta_3$ =I(High Skill Occupation)	0.300** (0.136)	0.049 (0.060)	0.338* (0.193)	-0.051 (0.053)	0.475 (0.380)
Diff. Occup. Effect ( $\beta_2+\beta_3$ )	0.099 (0.075)	0.122** (0.035)	-0.070 (0.098)	-0.023 (0.031)	0.372** (0.219)
R-squared	0.163	0.214	0.068	0.033	0.074
Observations	1,626	1,784	1,206	1,547	1,547
<i>Dep. variables – Mechanical Outcomes</i>	Formal Job	SISBEN Access	Subsidized Healthcare	Financial Products	Transfers from Government
$\beta_1$ =Indiv. reg. in RAMV	0.091*** (0.014)	0.440*** (0.022)	0.270*** (0.019)	0.187*** (0.019)	0.055*** (0.017)
$\beta_2$ =Indiv. reg. in RAMV * I(High Skill Occupation)	0.150* (0.079)	-0.013 (0.125)	-0.095 (0.112)	0.094 (0.111)	0.003 (0.097)
$\beta_3$ =I(High Skill Occupation)	-0.005 (0.069)	0.065 (0.109)	0.093 (0.097)	0.029 (0.097)	-0.071 (0.084)
Diff. Occup. Effect ( $\beta_2+\beta_3$ )	0.145*** (0.040)	0.052 (0.063)	-0.002 (0.057)	0.123** (0.056)	-0.067 (0.049)
R-squared	0.130	0.280	0.171	0.156	0.032
	1,547	1,537	1,528	1,545	1,545

Notes: Dependent variables: (i) Annual consumption (log) is the logarithm of annual consumption per capita in million COP; (ii) Income (log) is the logarithm of the monthly labor income which includes wage, extra pay, and revenue from independent work in million COP; (iii) Employed is a dummy [=1] if reported as employed; and has a wage (includes independents and family worker); (v) Hours worked (log) is the logarithm of weekly hours worked; (v) Symptoms of severe Anxiety/Depression is a dummy [=1] if respondent had extreme symptoms for anxiety or depression; and (vi) Well-being Index is a PCA index constructed using respondent answers on a 1–10 well-being scale for the following variables: mobility; anxiety and depression; daily activities; personal care; pain and fatigue; and health perception. High-skill occupation is a dummy [=1] if the respondent reported worked in (i) Financial and insurance activities; (ii) Professional, scientific, and technical activities; (iii) Activities of administrative and support services; (iv) Public administration and defense sector; (v) Education sector; and (vi) Human healthcare and social assistance activities. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, and years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Standard errors are reported in parentheses. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.

Table J.4. Heterogeneous Effects by Main City (ITT Estimates)

<i>Dep. variables – Primary Outcomes</i>	<b>Consumption per Capita (log)</b>	<b>Income (log)</b>	<b>Employed [=1]</b>	<b>Hours Worked</b>	<b>Symptoms of severe Anxiety/Depression [=1]</b>	<b>Well-being (Index)</b>
	(1)	(2)	(3)	(4)	(5)	(6)
$\beta_1$ =Indiv. reg. in RAMV	0.010 (0.045)	0.019 (0.023)	-0.028 (0.034)	-0.004 (0.070)	-0.006 (0.021)	-0.244* (0.138)
$\beta_2$ =Indiv. reg. in RAMV * I(Main City)	0.177*** (0.050)	0.112*** (0.026)	0.099*** (0.038)	-0.037 (0.078)	-0.024 (0.024)	0.576*** (0.154)
$\beta_3$ =I(Main Cities)	-0.066 (0.059)	-0.033 (0.031)	-0.049 (0.044)	0.036 (0.089)	0.036 (0.028)	-0.169 (0.182)
Main City diff. Effect ( $\beta_2+\beta_3$ )	0.213*** (0.033)	0.109*** (0.018)	0.067** (0.028)	-0.023 (0.051)	0.002 (0.016)	0.519*** (0.103)
R-squared	0.141	0.217	0.183	0.065	0.035	0.080
Observations	2,200	1,784	3,382	1,206	2,100	2,100
<i>Dep. variables – Mechanical Outcomes</i>	<b>Formal Job</b>	<b>SISBEN Access</b>	<b>Subsidized Healthcare</b>	<b>Financial Products</b>	<b>Transfers from Government</b>	–
$\beta_1$ =Indiv. reg. in RAMV	0.034 (0.026)	0.432*** (0.036)	0.341*** (0.032)	0.138*** (0.031)	0.104*** (0.029)	
$\beta_2$ =Indiv. reg. in RAMV * I(Main City)	0.082*** (0.029)	0.037 (0.040)	-0.058 (0.036)	0.073** (0.035)	-0.030 (0.032)	
$\beta_3$ =I(Main City)	-0.073** (0.035)	-0.042 (0.047)	0.034 (0.043)	-0.053 (0.041)	0.015 (0.038)	
Main City diff. Effect ( $\beta_2+\beta_3$ )	0.092*** (0.020)	0.020 (0.026)	-0.034 (0.024)	0.104*** (0.023)	-0.013 (0.021)	
R-squared	0.127	0.304	0.190	0.145	0.035	
Observations	1,547	2,089	2,074	2,097	2,098	

*Notes:* Dependent variables: (i) Annual consumption (log) is the logarithm of annual consumption per capita in million COP; (ii) Income (log) is the logarithm of the monthly labor income which includes wage, extra pay, and revenue from independent work in million COP; (iii) Employed is a dummy [=1] if reported as employed, and has a wage (includes independents and family worker); (iv) Hours worked (log) is the logarithm of weekly hours worked; (v) Symptoms of severe Anxiety/Depression is a dummy [=1] if the respondent had extreme symptoms for anxiety or depression; and (vi) Well-being Index is a PCA index constructed using respondent answers on a 1–10 well-being scale for the following variables: mobility; anxiety and depression; daily activities; personal care; pain and fatigue; and health perception. Main city is a dummy [=1] if the respondent reported lived in Medellín, Barranquilla, or Bogotá. All columns include department (Antioquia, Atlántico, Bogotá, and Norte de Santander) and sampling-city fixed effects. Individual controls include: age, gender, and years of education before migration. Labor history in Venezuela controls include: ever worked [=1], type of job, has a written contract [=1], and gap between last job and migration. Household controls in Venezuela include: number of children; household size; if had energy, water, and sewage [=1]; owner of dwelling [=1]; and had smartphone [=1]. Migration decisions controls include: had family/friends in Colombia before migrating [=1], knew of job opportunities before migrating [=1], if the head migrated for health reasons [=1], and time of permanence in Colombia. Robust Standard errors are reported in parentheses. \*\*\* significant at the 1%, \*\* significant at the 5%, \* significant at the 10%.