Life Out of the Shadows:
Impacts of Amnesties in Migrant's Life [*]

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Abstract

What are the impacts of regularization on migrant's lives? This study examines the effects of the PEP visa, an opportunity for regularization for half a million Venezuelan refugees in Colombia. We collect a survey of 3,455 migrant families and leverage four identification strategies to assess the effects of the program in migrant's life outcomes. Causal effects are estimated using a fuzzy regression discontinuity design that compares the wellbeing of migrants who arrived to Colombia close to June 8th, 2018 (eligible for the program) and those who arrived later (not eligible). The results indicate that migrants with a PEP visa have 18% and 24.5% higher consumption and income per capita relative to the other migrants. Migrants with a PEP visa also have more access to safety nets and financial services, better labor conditions, less food insecurity, are more integrated to the Colombian society, and showed more resilience to the COVID-19 crisis. The program had negligible effects on migrant's labor formalization.

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I Introduction

How will irregular migrant's lives change when offered the opportunity to regularize their situation in developing countries? The answer is not obvious. Developing countries have large informal sectors, as such, migrants may be part of the informal productive sector. Moreover, migrants might not be interested in regularizing their situation if they only consider the taxation implications of such actions. They may also not be informed of the benefits of formalization or may not be able to secure a formal job despite having their migratory documents in order. Lastly, irregular migrants may also have trust issues and be afraid of the consequence of being in the government's radar.

In this paper, we investigate the causal effects of a large amnesty offered by Colombia to irregular Venezuelan migrants in 2018. We focus on understanding the effects of the amnesty on migrant's wellbeing including income, consumption, mental and physical health, and access to employment. We also explore the effects of the program in other secondary outcomes which include labor conditions, access to state services, food security, integration to society, and resilience to the COVID-19 pandemic.

The context of the study is the *Permiso Especial de Permanencia* (PEP visa), which granted full access to Colombian formal markets and safety nets to 442,464 irregular migrants preregistered in a census collected between April and June of 2018. According to government accounts, the census was collected with the sole purpose of counting the number of irregular Venezuelan migrants living in Colombia at that time. The census was not collected with the objective of regularizing individuals or publicized in that way. One month after the census was completed, the Colombian president in office, unexpectedly announced that all irregular migrants registered were eligible to regularize their migratory status in Colombia by applying to a PEP visa.

To evaluate the program, we administered a survey representative of the census of irregular migrants who were offered the opportunity to regularize in 2018 (eligible for the program), and of irregular migrants who arrived to Colombia between January of 2017 and December of 2018, but who had not registered in the census (ineligible to apply). The sample includes 1,687 households

in the census (who were eligible to apply for a PEP visa), and 1,528 irregular migrants outside the census (ineligible to apply). The survey instrument was guided by previous qualitative work in which we interviewed 42 irregular migrants about the potential impacts of PEP, reasons for not registering on the census, and for not applying for the PEP visa. The survey was administered over the phone as a consequence of the pandemic. Survey participants received an incentive and the data was collected by Venezuelan enumerators to maximize response rates.

Considering that both groups of migrants may not be directly comparable, the research team leveraged four identification strategies to identify the effects of the program. The first empirical methodology simply compares outcomes of households who applied for the PEP visa and those which did not, accounting for previous variables that may have affected selection into the program. These variables include retrospective information on the household characteristics before the program was announced, including past family and work history, past education, and importantly, time living in Colombia.

The second empirical methodology compares outcomes of individuals in the census with those outside of the census, following an intent-to-treat approach. It also controls for the variables that may have facilitated selection into the program. The third methodology is an estimation of the local average treatment effects (LATE), in which having a PEP visa is instrumented with registration on the census of irregular migrants (i.e., program eligibility).

The most credible approximation of causal effects, however, comes from the fifth methodology: a fuzzy regression discontinuity design (RDD). The design exploits the exogenous discontinuity around the time when the registration for the census closed. It compares irregular migrants who arrived before June 8, 2018 (eligible to apply for the PEP visa) with those who arrived shortly after that date (ineligible to apply). The empirical estimates confirm a large discontinuity in the probability of applying for the PEP visa around June 8th, 2018, when the registration for the census closed. The empirical analysis provides strong evidence of the validity of the RDD as all other baseline covariates do not change discontinuously around the arrival time on June 8th, 2018.

Close inspection of individual matched data from the migrants registered in the census and social security official records, suggests that few migrants eligible for the program actually joined the formal sector after obtaining a PEP visa. However, the single most important take away from this study is that holding a PEP visa largely improved overall migrant's well-being, their economic self-sufficiency, and facilitated their integration in host communities.

The empirical analysis findings can be summarized in three main points, corresponding to how outcomes were grouped in the pre-analysis plan into mechanical, primary, and secondary (more exploratory) outcomes.[1]

First, despite the low formalization rates across the individuals who were granted the amnesty, the estimates across all empirical strategies consistently point to large and positive changes on migrant's access to social safety nets (including the subsidized health regime and cash transfers) and financial services. These comprise what we refer to as the *mechanical effects* of the PEP visa.

Second, related to the *primary outcomes* of the study, migrants holding a PEP visa experience large improvements on income and consumption per capita, anxiety and depression, and overall health. Particularly, the LATE estimates suggest that migrants with a PEP visa had 16% more annual per capital consumption (18% for the RDD estimates) and 10.2% higher total income per capita (24.5% for the RDD estimates). The effects on health outcomes are positive and large for all estimates, but not statistically significant for the RDD estimates (where there is less statistical power due to the smaller sample size).

Third, concerning the exploratory analysis on *secondary outcomes*, the estimates suggests that migrants with a PEP visa have better labor conditions (such as higher reservation wages, are more satisfied with their jobs, and report less self-employment), have less food insecurity, and feel more integrated to the Colombian society and their neighborhoods, relative to migrants without a PEP visa. Migrants with a PEP visa also were more resilient to the economic shock caused by the COVID-19 pandemic relative to those household without a PEP visa. Particularly, we observe that

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[1]The pre-analysis was completed before collecting the survey, see Ibáñez et al. (2020).

migrants with a PEP sold less assets during the pandemic and experienced lower probabilities of being evicted from their homes, relative to the other migrants.

The results of this evaluation offer important lessons for other developing countries that are also experiencing large inflows of refugees and are undecided about granting labor permits to migrants. Combined with previous findings from Bahar et al. (2021) documenting the negligible effects that the PEP amnesty had on formal labor markets for Colombian workers, this study provides strong evidence on the virtues of facilitating migrant's integration. Considering that most Venezuelan migrants also report that they are not returning to Venezuela, hosting countries are better off facilitating migrant's integration as it reduces the time in which migrants can become self-sufficient and can contribute built the societies were they are being host.

Relation to Literature and Contribution. This research project contributes in several dimensions to the literature. First, it identifies the causal impacts of a large regularization on migrant's well-being in a developing country with large informal markets. Developing countries host the lion's share of refugees worldwide. Hence, integrating migrants into the formal labor markets and designing policies that promote their recovery is one of the main development challenges nowadays. As of today, there is little evidence on the impact of migrant flows to developing countries, let alone the impact of regularization programs on migrant's themselves. Instead, the literature has largely focused on analyzing the impact of regularization programs on host communities in developed countries (Amuedo-Dorantes and Antman, 2017; Cobb-Clark et al., 1995; Amuedo-Dorantes et al., 2007; Chassamboulli and Peri, 2015; Devillanova et al., 2018; Monras et al., 2018) and there is recent evidence for developing countries, including Fallah et al. (2019) in Jordan and Bahar et al. (2021) in Colombia. These studies, however, focus on the effects of regularization on natives and not migrants themselves.

Second, we provide a broader perspective on migrants lives and well-being and understand the impact of the regularization programs beyond labor income and including health and mental health. While prior studies have focused on labor outcomes, the regularization programs may have

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far reaching implications on migrant's well-being including their physical and mental health. Prior studies have demonstrated that migrants, and refugees in particular, have an initial health disadvantage when compared to the host population (Reed and Barbosa, 2017). The deterioration on migrants' health after migration is explained by the collapse of health infrastructure in the countries of origin, lack of access to healthcare in receiving countries, an income effect that reduces households' investment in health, stress associated with the migration and resettlement process, and cultural differences on the concept of health and healthy behavior, change in behavior (Black et al., 2015) among others. In some contexts the gap between natives and migrants vanishes over time, but in others, as in the case of asylum seekers, the gap may persist (Giuntella et al., 2018). Furthermore, it is important to consider migrants' mental health. Moreover, the drivers of (forced) migration have negative and sometimes persistent consequences on migrants' mental health. On the other hand, the uncertainty, fear of deportation, barriers to proper integration, and the socioeconomic deprivation in receiving countries may also lead to further deterioration of migrants' mental health. Together these two factors explain differences between migrants' and non-migrants' subjective well-being (Chen et al., 2019). Importantly, mental health problems can affect behavior, labor outcomes, and income trajectories, thus creating feedback mechanisms between socioeconomic and mental health dimensions that can even lead to economic and psychological poverty traps (Ruiz and Vargas-Silva, 2018). [2]

Third, we provide evidence on whether the regularization program allowed migrants to better cope and navigate with the shock of the COVID-19 pandemic. Available evidence suggests that the toll of the pandemic is not borne equally and that the vulnerability of more undeserved segments of the population heightens health and socioeconomic risks and can thus contribute to reinforce their vulnerability. Irregular migrants and refugees stand out as some of the population more vulnerable to the effects of the pandemic because of their socioeconomic and psychological vulnerability, because they lack access to essential health services, and because they may be ignored or left

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[2]This paper finds descriptive evidence that refugees in the United Kingdom have worse labor outcomes than other migrants and most of the gap can be explained by differences in health status, specially mental health.

behind in the policy frameworks implemented by Governments across the world to tackle the socioeconomic consequences of the pandemic. Therefore, the large-scale regularization program of irregular Venezuelan migrants in Colombia may be even more important now, in context of COVID-19 pandemic, as it enables access to health and social protection and to receive social transfers instituted during the pandemic.

Fourth, the study examines how a regularization program promotes the integration of migrants into the society's of the receiving country. A successful integration process is crucial for migrants to feel they are part of the social contract in the host country, trust state institutions, and act collectively within their communities. This project will explore the impact of the regularization process on the attitudes, behaviors, and perceptions of migrants. Most papers on the migration literature study the impact of migration on the on attitudes, behaviors and perceptions of the host population. If migrants never return to their home country, a failed integration process may segregate migrants from host communities, creating anger and resentment among the migrant population. By providing benefits similar to those of citizens, a regularization program may ease some of these negative impacts. In fact, their sense of belonging to the host country may affect their willingness to contribute with public services, pay taxes, and maintaining order, among others.

II   The PEP Amnesty Program

To facilitate the regularization of migrants and their participation in the formal labor markets, the Colombian Government established the PEP special residency program in 2017. The PEP grants regular migratory status to Venezuelan migrants, allowing them to work in formal jobs and access the social stratification system (Sisbén), which is used by the Colombian Government to target social programs. This enables migrants to access subsidized healthcare, public education and early childhood services, and other social programs including social transfers that were instituted in the wake of the COVID-19 pandemic. In addition, migrants with regular migratory status can access private services including financial and cell phone services.

Without the PEP, migrants cannot be employed in the formal sector, and thus, can only aspire for an informal jobs that are often characterized by low wages, skill-downgrading, and do not provide access to social security programs. In addition, irregular migrants and those in the informal jobs may face a higher risk of exploitation and poor working conditions. More generally, irregular migrants may not be able to exercise their rights and access essential services, which are provided by the Colombian State to all migrants regardless of their migratory status. See Figure I below which describes the services provided to all migrants and the additional services and benefits brought forth by the PEP.

The first two waves of the PEP (PEP-I and PEP-II) targeted migrants who entered Colombia through official immigration checkpoints and therefore had a lawful migratory status. Under these two waves, nearly 182,500 permits were issued. However, a large share of the migrant population was excluded from the PEP; the majority of migrants had entered Colombia through illegal border crossings, overextended their stay, or used the *Tarjeta de Movilidad Fronteriza*, which only allows temporary stays in border areas.[3]

For this reason, the Colombian Government introduced a third wave of the PEP in August 2018 for all migrants who had been registered in the Administrative Registry of Venezuelan Migrants (RAMV for its Spanish acronym). The RAMV was implemented by the Colombian Government between April 6 and June 8 of 2018 to asses the magnitude of irregular migration and characterize the irregular migrant population. Importantly, the RAMV was by no means designed or implemented to extend grant work permits. However, a few weeks before leaving office in August 2018, President Juan Manuel Santos unexpectedly enacted a decree that enabled migrants in the RAMV to register in a new wave of the special residency permit; the PEP-RAMV. For brevity, we refer from hereon to the PEP-RAMV simply as the PEP.

The requirements for getting a PEP included: i) having a valid Venezuelan ID or other proof of Venezuelan citizenship; ii) being registered in the RAMV; iii) residing in Colombia by the time the

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[3]The *Tarjeta de Movilidad Fronteriza* is a document that facilitates the movement of Venezuelans who live in the Venezuelan-Colombian border and come across the border on a day to day basis to shop for groceries, medicines, visit family members, or to attend school, among others. It only permits free movement inside the Border Areas.

decree was issued; and iv) not having any criminal records or deportation orders. The processing and re-issuance of the PEP was free and migrants had to submit their application online. According to the official records, 441,237 irregular migrants registered in the RAMV and 64 percent of them (285,000) registered in PEP-RAMV. Figure I illustrates the roll out of the RAMV registry and the PEP regularization program as well as key features of the registration process. As we discuss below, the RAMV and PEP roll out as well as their eligibility requirements are key elements that will enable us to identify causal impacts of the PEP.

Figure (I)   Timeline: RAMV census registration, PEP visa application, and Survey collection
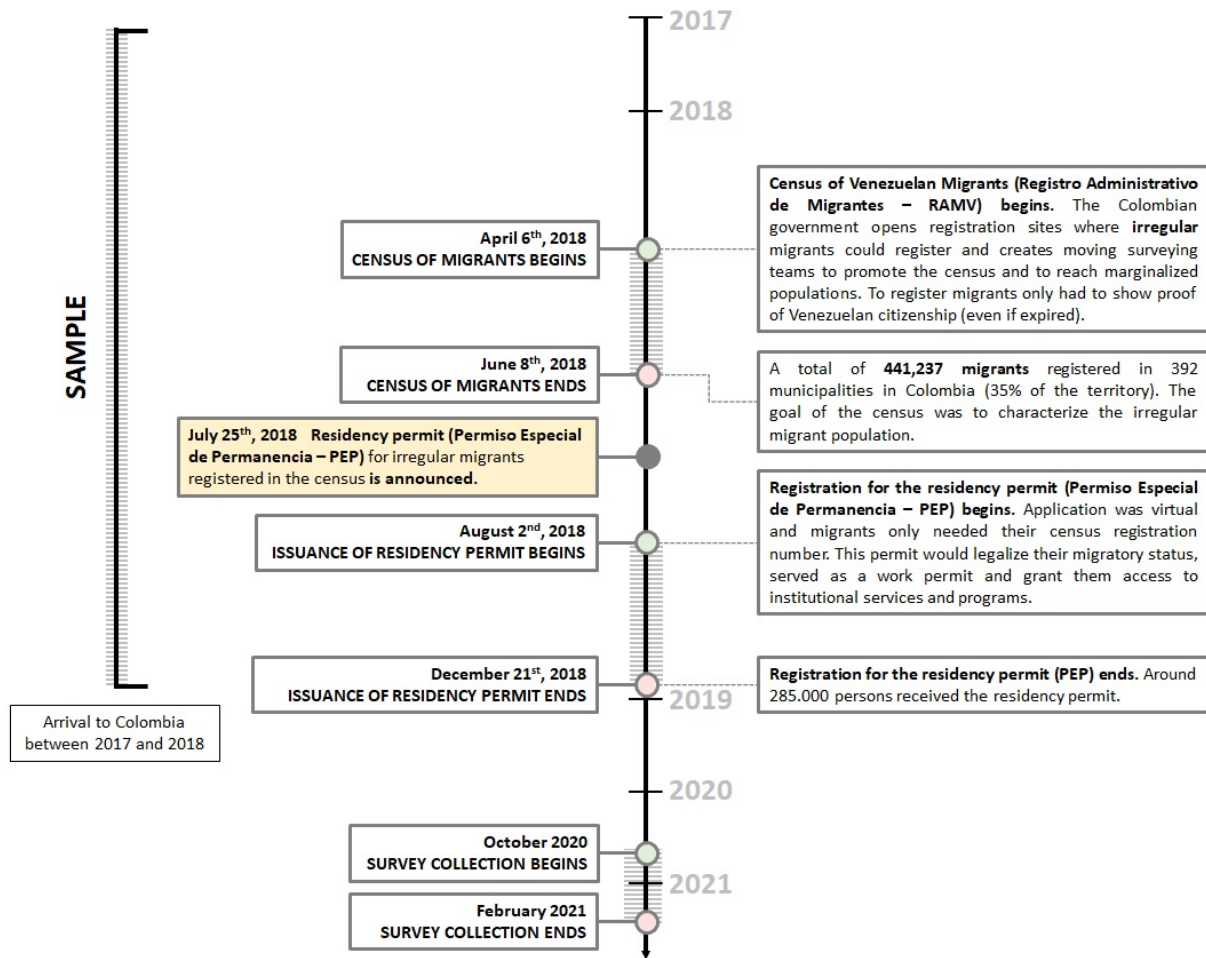
Although the PEP is not the first program of its nature in a developing country, prior programs do not allow a proper identification of their causal impact on migrant's well-being. For instance, most regularization programs have eligibility requirements, such as being employed at the time

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of the enactment, meaning that they benefit a rather small group of migrants, and more often the less vulnerable ones. In addition, previous regularization programs have been often paired with additional policies, including sanctions to firms that hire irregular migrants, heightened border controls, or support from other countries.[4] Hence, it is not possible to isolate the impacts of these additional policies from those of the regularization programs. Finally, many of these programs are publicly discussed before their approval. Although in most cases the enactment date is unknown, prior announcements may lead migrants to adjust their behavior and decisions in anticipation of future positive effects (i.e. accepting low wage jobs to be eligible or even migrating) that therefore do not allow cleanly identify the impact of the program. For this reason, the causal impact of other regularization programs like *Patria Grande* in Argentina and Brazil's humanitarian visas for Haitian migrants has been difficult to identify due to self-selection into the program, anticipation effects, and endogeneity issues.

By contrast, the PEP's rollout and features, which we summarized in Figure I allow causally identifying its impact on the overall well-being of irregular migrants. First, the program did not have any eligibility requirements and was not paired with additional policies other than registration in the RAMV, which was open for all irregular Venezuelan migrants in the country. Second, the PEP was introduced unexpectedly. The RAMV announced and introduced with the purpose of characterizing irregular migrants, while the PEP was only announced the day in which it was introduced by a Presidential Decree. Therefore, the PEP roll-out isolates any anticipatory decisions and behavioral effects. Third, unlike other contexts in which language and cultural differences explain a great deal of the barriers faced by migrants and policy makers in receiving countries, Venezuelan and Colombian citizens speak the same language and share similar cultures and traits. Taken together, the PEP provides a clean context to study the effects of migration by itself and not mediated by a clash of cultures.

Nevertheless, there are different challenges to identify the causal impacts of the special resi-

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[4]For example, the European Union provided funds to Turkey and trade concessions to Jordan for hosting and regularizing Syrian refugees.

dence permits. First, and more importantly, both the RAMV and PEP populations are self-selected. Although the Colombian Government sought to register all irregular migrants in the RAMV, registration was voluntary. Likewise, migrants registered in the RAMV decided whether to apply for the special residency permit. In both cases, the decision of eligible migrants could have been mediated by registration constraints, available information, trust on Colombian authorities, expected net benefits from registration, or anticipated migration back to Venezuela or to other countries in Latin America. Second, migrants who arrived after the RAMV registry was completed were not allowed to apply for a PEP. While migrants in this latter group can serve as a control to identify the PEP counterfactual, they may have different characteristics and fewer time of assimilation than that of RAMV migrants, which can the confound the impact of the PEP. Finally, the RAMV only included irregular migrants, and therefore we cannot provide evidence on the impacts for better-off migrants who perhaps were in a better position to take advantage of the special residency permits. We discuss our identification strategy in the following section and the way in which we address these concerns for causal identification.

III   Empirical Design

The effects of the PEP program are measured using multiple identification strategies as described in the pre-analysis plan (see Ibáñez et al., 2020). The different methodologies offer different advantages in terms of external validity of the results and selection biases between individuals treated into the program and those that did not have a PEP visa. All the estimations follow closely the specifications described in the pre-analysis plan.

III.1   OLS regression

The first specification is a simple OLS regression that compares individuals in households with and without a PEP visa. To be counted as a household without a PEP visa no one in the household could

have had a visa. The regression includes controls for variables, observed before the program was implemented, which could explain differences in the program take-up. Specifically, as described in the pre-analysis plan the specification used is given by

$$Y_i j = \alpha_0 + \alpha_1 1[PEP_i = 1] + \alpha_2 X_i j + \epsilon_i j \tag{1}$$

where Y_i is outcome of migrant i in household j, $1[PEP_i = 1]$ is a dichotomous variable that takes the value of 1 if the migrant has the PEP and 0 otherwise, and $X_i j$ is a vector of pre-specified baseline controls, which improve precision and help address chance imbalances including individual controls for age, gender, and years of education before migration; labor history in Venezuela measured by the variables ever worked, had a written contract, type of job (employed at a firms, public employee, independent, employer, or other), and gap between last job and migration to Colombia. It also includes controls for household characteristics in Venezuela, including number of children, household size and composition, energy access, water and sewage access, dwelling ownership, and smartphone ownership. Finally it also controls for variables related to the migration decision such as had family/friends in Colombia, knew of job opportunities before migrating, and head migrated for health reasons. The specification also includes controls for fixed effects for sampling city (Medelln, Bogot, and Barranquilla) and department of residence.[5]

The analysis will also present a separate specification that controls for the time that the individual has been living in Colombia.

III.2 Intent-to-Treat (ITT)

The ITT is estimated using the following specification:

$$Y_i j = \beta_0 + \beta_1 1[RAMV_i = 1] + \beta_2 X_i j + \epsilon_i \tag{2}$$

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[5]Colombia has 36 department they represent the equivalent of a United States state.

where $1[RAMV_i = 1]$ is an indicator function that takes the value of 1 if the migrant registered in the RAMV census and 0 otherwise. Only migrants registered in the RAMV census could apply for a PEP visa. In practice, only approximately 60 percent of migrants in the RAMV actually applied for the visa. All other variables and parameters are the same as the ones in described for equation (1). The ITT provides the effect of the eligibility to the PEP visa, conditional on our ability to control for selection into the RAMV.

It is the more meaningful estimate from a public policy perspective since it allows understanding the effects of providing regularization and work permits to irregular migrants recognizing that some of them will opt out.

III.3 Local Average Treatment Effect (LATE)

To estimate the LATE we will estimate equation (1), but instrumenting the variable of interest $1[PEP_i = 1]$ with the RAMV registration (or program eligibility). The LATE provides the effect of the PEP for the compliers—those who were eligible for the PEP, because they had registered in the RAMV and registered in the PEP. It isolates selection issues in the PEP registry.

III.4 Fuzzy RDD

We isolate the selection into the RAMV by taking advantage of the variation in PEP eligibility resulting from the date in which the RAMV registry was available. As discussed before, irregular migrants could register in the RAMV between April 6 and June 8, 2018. Irregular migrants who arrived to Colombia at a later date were thus unable to register in the RAMV and were not eligible for the PEP.

We could restrict the analyses above to compare migrants in the RAMV with those who migrated after June 8 and were not eligible to the RAMV and PEP. While this strategy allows us to isolate the observable and unobservable factors underlying registration in the RAMV, its brings

about two additional sources of bias: endogenous migration decisions that led to different migration dates, and assimilation bias provided that those who migrated earlier could have better assimilation patterns than those who arrived at a later date.

To address these sources of bias we estimate a fuzzy RDD comparing eligible and non-eligible migrants on each side of the RAMV time-eligibility cutoff (the June 8 end date). By focusing on migrants in the close vicinity of such threshold, we can then lessen concerns for assimilation bias and endogenous migration decisions and provide more robust evidence on the impacts of the PEP.

The RDD specification that used is given by:

$$Y_i j = \alpha_0 + \alpha_1 1[\widehat{PEP_i} = 1] + \alpha_2 X_i j + \epsilon_i j \tag{3}$$

$$1[\widehat{PEP_i} = 1] = \alpha_3 + \alpha_4 T_i > 0 + \alpha_5 f(d_i) + \alpha_6 X_i j + \epsilon_i j \tag{4}$$

where $T_i > 0$ is an indicator variable equal to one for all migrants in the sample whose time of arrival to Colombia was before June 8, 2018 (hence treatment is equal to one for migrants eligible for the program), and $f(d_i)$ is a polynomial of the distance, measured in days, between the date of arrival of the migrant and June 8, 2018, when the RAMV census closed. All other variables are as described in equation 1. For inference, we follow Cattaneo et al. (2019) and use a local linear polynomial of the running variable, a mean squared error (MSERD) optimal bandwidths, and the robust bias corrected estimator and confidence intervals.

Figure II illustrates the sharp discontinuity in the probability of treatment for migrant's who arrive to Colombia after June 8, 2018. Panel A illustrates the mean probability of PEP application for all households in a weekly basis (blue line) for all of our sample. As discussed earlier in our sample we only collect information for migrants who arrived to Colombia between January 1st, 2017 and December 31st, 2018. The figure confirms that in practice there was a sharp discontinuity in the probability of treatment after June 8, 2018 when the RAMV census registration closed. Panel

A also shows bars illustrating the density of households in our sample who arrived to Colombia in each week. It confirms that there is not discontinuity in the number of individuals who arrived to Colombia before or after June 8, 2018. The McCrary test, in gray bars, confirms this observation. The test rejects the existence of any discontinuity in the density in our sample or manipulation from individuals. This last results is intuitive, as at the time of the RAMV census there was no intention whatsoever from the government to regularize the migrants that registered. As such, there were no related public news about such possibility.

Panels B and C illustrate the discontinuity in the probability of treatment, estimated as the average treatment take-up in each bin. Panel B illustrates the discontinuity using a linear polynomial and panel C a quadratic polynomial. Both figures confirm the existence of a large and robust discontinuity in the probability of treatment around June 8, 2018 when the registration for the RAMV census closed. At each point the figure the dots illustrate the mean probability of treatment in each bin and its 95% confidence intervals.

Figure (II) Discontinuity in the Probability of Treatment in June 8, 2018
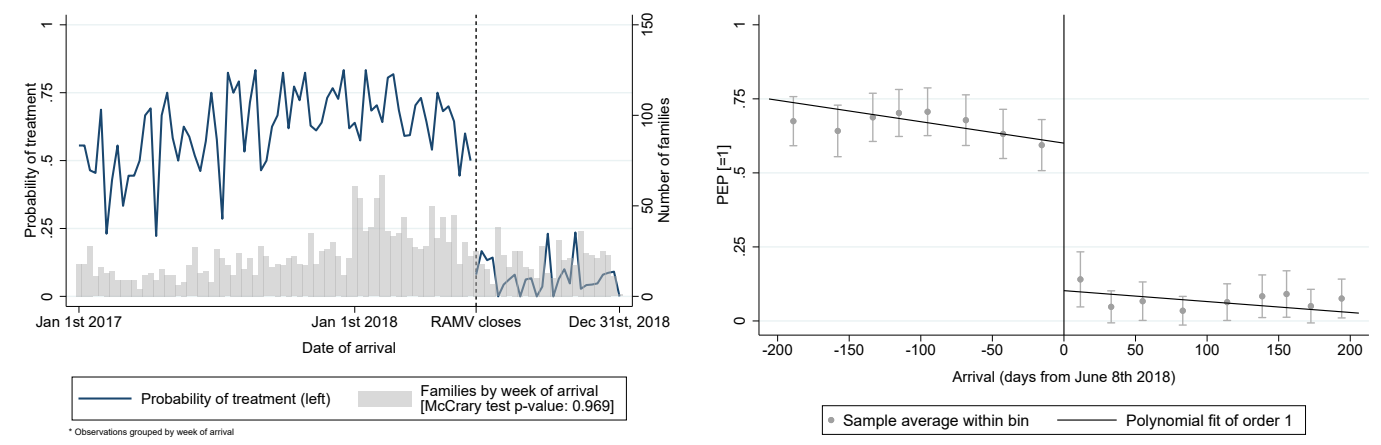
(a) Probability of treatment by week of arrival

(b) RD plot with fitted global polynomial of degree 1
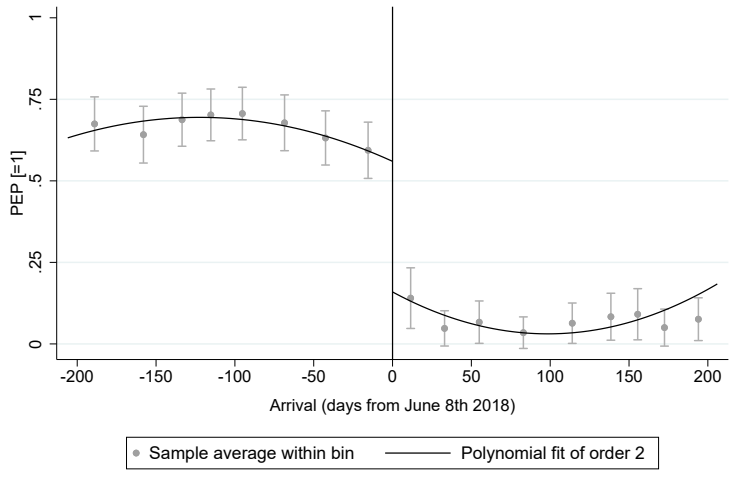
(c) RD plot with fitted global polynomial of degree 2

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

Validity of the local continuity assumption - RDD

Table I illustrates the validity of the local continuity assumption for all the variables observed before the treatment take-up. These variable correspond to all the controls described in equation (1) and specified in our pre-analysis plan.

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Table (I)   Validity of the local continuity assumption

	HH. Venezuela Parents or Siblings [=1]	HH. Venezuela Partner/Spouse [=1]	Children Number	Years of Education before Migration	Female [=1]
	(1)	(2)	(3)	(4)	(5)
Conventional	-0.244	0.0625	-0.251	0.880	0.136
	(0.091)	(0.092)	(0.247)	(0.539)	(0.106)
Bias-corrected	-0.274	0.0506	-0.219	0.973	0.138
	(0.091)	(0.092)	(0.247)	(0.539)	(0.106)
Robust	-0.274	0.0506	-0.219	0.973	0.138
	(0.106)	(0.111)	(0.293)	(0.638)	(0.128)
Observations	2,219	2,219	2,219	2,219	2,219
Effective Obs. left	215	226	231	205	187
Effective Obs. right	381	447	457	352	324
Bandwidth left	82.54	94.44	96.32	76.14	68.06
Bandwidth right	82.54	94.44	96.32	76.14	68.06
Order est.	1	1	1	1	1
	Age (years)	Knew Job Opportunity before Migration [=1]	Ever worked [=1]	Employed at private Firm [=1]	Employed with Government [=1]
	(6)	(7)	(8)	(9)	(10)
Conventional	-2.325	-0.127	0.0174	0.143	0.119
	(1.849)	(0.092)	(0.027)	(0.127)	(0.063)
Bias-corrected	-2.963	-0.136	0.0201	0.210	0.125
	(1.849)	(0.092)	(0.027)	(0.127)	(0.063)
Robust	-2.963	-0.136	0.0201	0.210	0.125
	(2.205)	(0.110)	(0.032)	(0.148)	(0.075)
Observations	2,219	2,219	2,219	2,219	2,219
Effective Obs. left	141	209	223	121	225
Effective Obs. right	250	367	429	205	435
Bandwidth left	53.64	80.05	91.01	45.95	93.28
Bandwidth right	53.64	80.05	91.01	45.95	93.28
Order est.	1	1	1	1	1

Notes: This table tests the validity of the local continuity assumption in all the baseline covariates used as controls in all the specifications. The controls are defined as dependant variables in a sharp RD estimation. The estimation uses a triangular kernel and a common MSERD optimal bandwidth.

Table (I) Cont'd: Validity of the local continuity assumption

	Self-employed or Employer [=1]	Written Contract [=1]	Gap between last job and migration (months)	Migrated for Health reasons]	Friends or Family in Colombia
	(1)	(2)	(3)	(4)	(5)
Conventional	-0.183	0.146	-0.659	0.0161	0.0130
	(0.106)	(0.096)	(0.701)	(0.086)	(0.090)
Bias-corrected	-0.231	0.137	-0.880	-0.00551	0.0149
	(0.106)	(0.096)	(0.701)	(0.086)	(0.090)
Robust	-0.231	0.137	-0.880	-0.00551	0.0149
	(0.123)	(0.116)	(0.829)	(0.105)	(0.108)
Observations	2,219	2,219	2,219	2,219	2,219
Effective Obs. left	147	216	215	151	175
Effective Obs. right	271	408	384	273	316
Bandwidth left	55.38	85.06	83.41	56.82	66.90
Bandwidth right	55.38	85.06	83.41	56.82	66.90
Order est.	1	1	1	1	1
	Had Smartphone [=1]	Owner of Dwelling in Ven.[=1]	Electricity in Ven. [=1]	Running water in Venezuela [=1]	Sewage in Ven. [=1]
	(6)	(7)	(8)	(9)	(10)
Conventional	0.0546	-0.0612	-0.00139	0.0498	0.0329
	(0.098)	(0.081)	(0.002)	(0.074)	(0.070)
Bias-corrected	0.0774	-0.0543	-0.00545	0.0380	0.0117
	(0.098)	(0.081)	(0.002)	(0.074)	(0.070)
Robust	0.0774	-0.0543	-0.00545	0.0380	0.0117
	(0.117)	(0.099)	(0.006)	(0.088)	(0.082)
Observations	2,219	2,219	2,219	2,219	2,219
Effective Obs. left	209	204	126	174	166
Effective Obs. right	367	339	218	310	293
Bandwidth left	80.02	73.14	47.05	65.73	60.60
Bandwidth right	80.02	73.14	47.05	65.73	60.60
Order est.	1	1	1	1	1

Notes: This table tests the validity of the local continuity assumption in all the baseline covariates used as controls in all the specifications. The controls are defined as dependant variables in a sharp RD estimation. The estimation uses a triangular kernel and a common MSERD optimal bandwidth.

III.5 Outcomes

This research project examines the impacts of the PEP on migrants' well-being. As such the study

has three level of outcomes, as specified in the pre-analysis plan:

1. *Mechanical effects*: Were migrants with the PEP able to find formal employment, enroll in the Sisbén social stratification system, access to the subsidized health system, and open financial services? These are the direct benefits provided by PEP enrollment, and are not available for non-PEP irregular migrants. Hence, it is important to document them since they provide a first approximation into the impacts of the permit on migrants and possible mechanisms that underlie its impact on well-being.

2. *Well-being effects (main outcomes):* The analysis takes a broad perspective into migrants well-being that encompasses socioeconomic dimensions (consumption, income, and labor market access) as well as mental and physical health. In particular, the study will assess effects of the PEP visa on five primary outcomes including consumption, income, employment, mental health, and an aggregate health index.

3. *Other secondary outcomes:* the study also analyzes the impacts of the PEP visa in a set of secondary outcomes to provide a broader picture of the PEP effects and understand potential mechanisms. These include other more specific characteristics of labor market access (hours worked, skill downgrading, quality of employment, exploitation); COVID-resilience (food insecurity, house evictions, ability to comply with social distance measures); integration into the Colombian society and discrimination; empowerment, peace of mind, and ability or willingness to assert their rights; and post-PEP changes in household composition including the migration of other household members or relatives who had stayed behind in Venezuela.

IV Survey Design

The empirical analysis relies in a survey collected among 3,455 Venezuelan migrant families living in Colombia. The sample targeted three types of migrants: i) PEP visa holders (regularized migrants), ii) migrants who registered in the RAMV census but who did not apply to or did not get the PEP visa, and iii) irregular migrants without a PEP visa. The survey is representative of four

geographical regions in Colombia: Barranquilla, Bogotá, Medellín (and their metropolitan areas) and a fourth region representative of the rest of the country, including smaller cities like Cúcuta, Villa del Rosario, Cali, Cartagena, Riohacha, Maicao, Uribia, Valledupar, Santa Marta and Arauca. The field work was carried out between October 2020 and January 2021.

IV.1 Qualitative study

Prior to the administration of the household survey, a series of semi-structured interviews to migrants were conducted. A total of 42 semis-structured interviews were administered over the phone between July 21st and August 11 on a sample of 42 Venezuelan migrants that included irregular migrants (not eligible for the PEP), migrants in the RAMV registry but who did not enroll in the PEP program, and migrants in the RAMV and who hold a PEP permit. Migrants were contacted through associations and established networks of Venezuelan migrants.

The qualitative study revealed relevant lessons for the survey design. First, migrants have trust issues— for example, they are afraid of being deported— and contact through other migrants can facilitate and build trust. For example, Venezuelan migrants in Colombia are subject to scams and fake information sent through WhatsApp, Facebook or to their phones and are frequently contacted. This has rendered them distrustful and could affect their willingness to participate in surveys and provide true information on the phone on sensitive topics such as their migratory status, their income or questions on integration. Second, several migrants had relatives and/or friends in Colombia before migrating. These networks provided information and some form of help upon arrival. Third, migrants reported a stronger pull to get the PEP visa to get access to full health services and access to social safety nets than to access formal labor markets. Fourth, migrants reported that often local authorities and NGOs produce information in a language that was difficult to understand for them. Despite the fact that Venezuelans and Colombians share common language, there are important differences in their day-to-day choice of words. Fifth, the life of migrants was linked to their families in Venezuela. Most migrants were part of slit families

were one member migrated and will send for the rest of the family once a secure source of income and shelter is in place.

Based on these observations the survey was collected by migrant enumerators, the language was adjusted to reflect "Venezuelan" day-to-day common words, and the instrument included a comprehensive set of questions that measured networks in Colombia, and social and economic characteristics of households in Venezuela.

IV.2 Sampling frame

The sampling frame was built separately for the population in the RAMV census and irregular migrants. For the former we used a representative sample of the census, as the contact data of all the migrants in the RAMV census was facilitate for this study by the Colombian migration authorities. The sample was stratified by education, gender, and age. The sample included individuals who satisfy the following criteria: i) they are Venezuelan, ii) they are older than 18 years of age, iii) they are registered in the RAMV, and iv) they registered for the RAMV in Barranquilla, Bogotá, Medellín, Cúcuta, Villa del Rosario, Cali, Cartagena, Riohacha, Maicao, Uribia, Valledupar, Santa Marta or Arauca.

The sampling frame for irregular migrants was created using databases shared by organizations of migrants together with a rich pool of referrals. At the end of each survey with regular or irregular migrants we asked to provide, if they felt comfortable doing so, the contact information of up to five irregular migrants. The referrals had to satisfy the following criteria: i) they are Venezuelan, ii) they are 18 years of age, iii) they do not have a passport, ii) they arrived to Colombian between January, 2017 and December 31st, 2018 to Colombia, and iii) they do not have any PEP. The referral rate was low, with 1.1 referrals on average per survey, so an important share the sample was built from the lists shared by organizations of Venezuelan migrants.

IV.3   Sample collection

The survey was designed to be collected in person but because of the COVID-19 pandemic it was adjusted to be collected by phone. It was collected in a two-stage process. A first call was made to screen test the contact, to verify if the phone number worked, check if the respondent was eligible and consent participation in the study, and to schedule the call for the survey. For the PEP holders and migrants in the census we checked if they had indeed registered in the census and if they held a PEP or not. For the irregular migrants we asked for their migration date as only migrants who had arrived to Colombia between January 2017 and December 2018 were included in the sample, and if they were older than 18 years, and if they did not have a PEP visa.[6]

Respondents were given an incentive of $40,000 Colombian pesos (approximately USD 11) to participate in the survey which they could receive as cellphone credit, as a supermarket voucher, or through an electronic transfer. Given that most migrants are still excluded from the financial system, the delivery of this incentive was a big challenge the field work.

In the second call, which was usually a few days after the screening, the survey was collected. The questionnaire has three components: a family roster, a labor module and a household module. The roster includes socio-demographic questions for all members of the nuclear family (household head, partner, kids, parents, parents-in-law, daughters-in-law, sons-in-law) and a PEP module where we ask among other questions if they hold any kind of PEP, the date of issue, the benefits they perceive from it, and their monthly and weekly income. The labor module was applied to the respondent and to the partner or other member of the family of working age. It includes information on the migrant's labor history for Venezuela and Colombia. The household module has six sections: i) migration, ii) health and access to healthcare, iii) integration to society, iv) pro-social preferences, v) housing, and vi) expenditure and remittances. On average the survey collection lasted one hour and forty minutes. Appendix A presents more details on the survey instrument.

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[6]A second type of PEP has been granted in five waves to migrants who entered Colombia regularly using a passport. In the screening we asked the respondent if they had a Venezuelan passport as a way to exclude this other type of PEP holders as they are typically wealthier and more selected population.

V Impacts of the PEP Visa: observations from administrative records

The main objective of the PEP program was to give Venezuelan migrant's full access to Colombian formal labor markets and facilitate their integration to society. The Colombian Ministry of Health and Social Protection requires all formal workers in Colombia to register in the *Plantilla Integrada de Liquidación de Aportes* (PILA). The PILA registry information was matched with the RAMV census to assess how many migrants were registered as formal workers after the program. Figure III shows the number of individuals in the RAMV census, who were eligible to apply for the PEP visa, and were registered in the Colombian social security data as formal workers. In the figure the bars illustrates time periods in which the RAMV census was opened for registration, the PEP visa was offered for application, and the beginning of the COVID-19 pandemic in Colombia. The two lines graphed illustrate the overall number of individuals in the RAMV census who were registered as formal workers (dotted-line) and the number of individuals who only have the PEP visa offered between August and December (crossed-line), 2018 who were registered as formal workers).

Figure (III) Individuals in the RAMV census registered in Social Security as Formal Workers
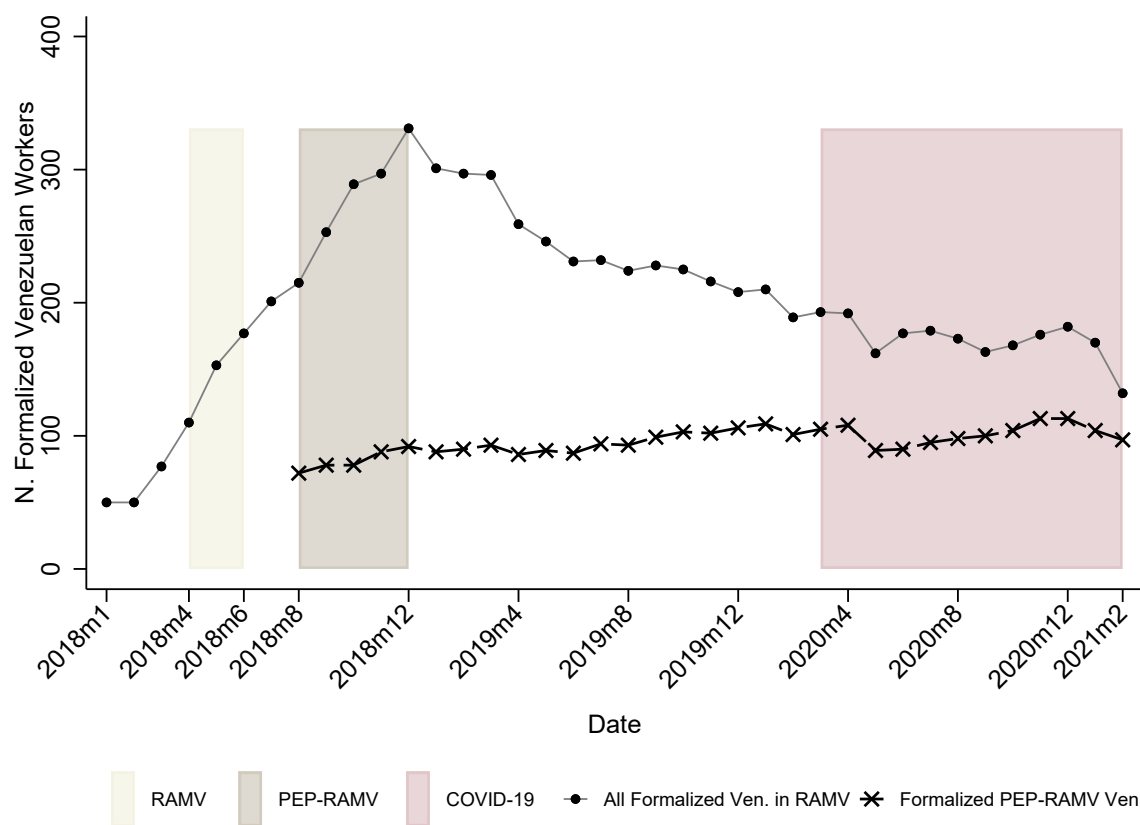
Note: All formalized Ven. include contributors with passport, citizenship card, and any PEP visa

Important observations can be drawn from the administrative data. The most important observation is that few migrants for the RAMV census were registered as formal workers after obtaining a PEP visa. In fact, of the 442,464 individuals registered in the RAMV census of which 281,803 applied for a PEP visa only a little more than 300 were registered at the maximum peach of registration. Additionally, a few of those registered migrants were not irregular in Colombia since they show having passports or other visas issued by the government in the previous years.

In fact, when the number of individuals registered in the RAMV census that appear as formal workers in the administrative data, is cleaned to show only individuals that did not had any other form of documentation, the number of workers who transition to the formal sector from the PEP program was close to 100 individuals. This implies a formalization rate of $100/281{,}803 \times 100 = 0.035\%$.
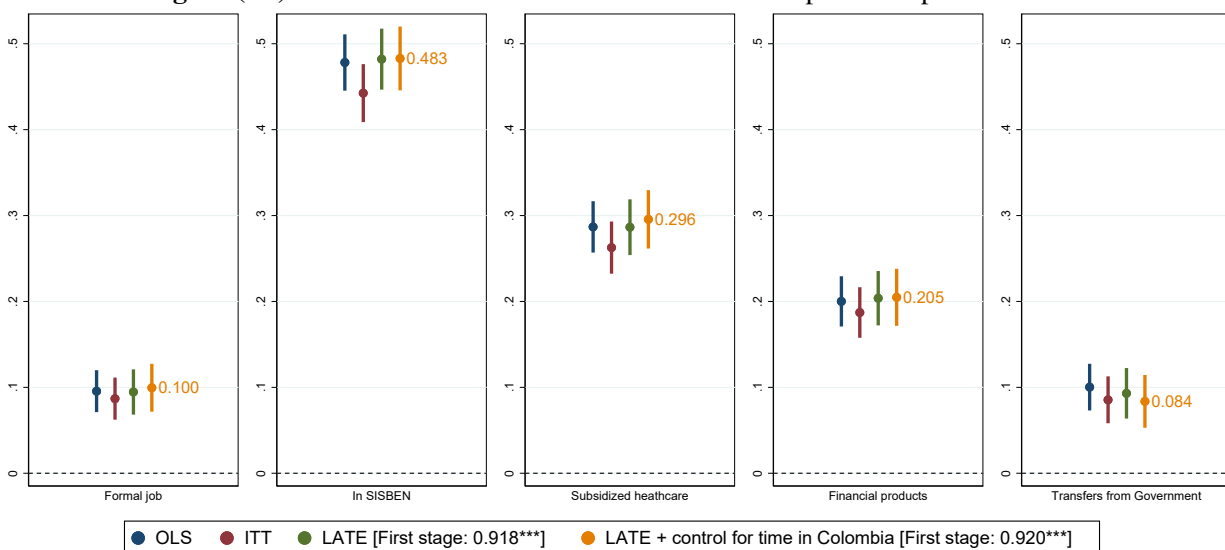
VI Impacts of the PEP Visa: results from the survey

This section presents the estimates of the impacts of the PEP program using the survey data. The results are grouped in three groups of outcomes including mechanical effects of the program, primary outcomes, and secondary outcomes, as described earlier. For each group of outcomes we first present plots of the point estimates for the specifications that use all the sample, which include the OLS (equation 1), the ITT (equation 2), and the LATE (subsection III.3). A separate table presents the results of the regression discontinuity estimates as they correspond to a restricted sample.

VI.1 Mechanical effects of the PEP visa

Figure IV illustrates the effects of the program for the specifications that use all the sample. The figure presents the point estimates for the impacts of the program for five dependent variables: (i) formal employment, an indicator variable equal to one if the respondent has written/verbal contract and they save in a pension fund; (ii) SISBEN, an indicator variable equal to one if the household is enrolled in the proxy mean test used to asses vulnerability in Colombia; (iii) subsidized healthcare, an indicator variable equal to one if the has access to the public healthcare, iv) financial products, an indicator variable equal to one if the household has a savings account or other financial or banking products; and (v) transfers, an indicator variable equal to one if the household received transfers from any official social assistance program. In the figure the bars represent 95% confidence intervals.

Figure (IV)   Mechanical Effects of the PEP Visa: Complete Sample Estimates

Legend: ● OLS   ● ITT   ● LATE [First stage: 0.918***]   ● LATE + control for time in Colombia [First stage: 0.920***]

Panels (left to right): Formal job (0.100), In SISBEN (0.483), Subsidized heathcare (0.296), Financial products (0.205), Transfers from Government (0.084)

Notes: Dependent variables: (i) formal employment is [=1] if respondent has written/verbal contract and they save in a pension fund; (ii) SISBEN is [=1] if the household is enrolled in the vulnerability assessment system; (iii) subsidized healthcare is [=1] if household benefits from public healthcare and financial products is [=1] if household has a savings account or other financial or banking products; (iv) Transfers is [=1] if household received transfers from any official social assistance program. Individual controls: age, gender, years of education before migration. Labor history in Venezuela: ever worked [=1], type of job, written contract [=1], and gap between last job and migration. Household controls, in Venezuela: number of children, household size and composition, energy, water and sewage [=1], owner of dwelling [=1], had smartphone [=1]. Migration decision: had family/friends in Colombia [=1], knew of job opportunities before migrating [=1], head migrated for health reasons [=1]. All estimates include fixed effects by sampling city and department of residence. Bars illustrate 95% confidence intervals.

The results are consistent across the different methodologies. Additionally, although the program had some limited effects in terms of formalization measured as having a contract (10% difference between individuals with PEP visa and those without), the PEP visa had large and positive effects in terms of access to safety nets and financial inclusion. Particularly, migrants who applied for the PEP visa had almost 50% higher registration rates in the SISBEN (the proxy means test used in Colombia to target social programs), almost 30% more access to subsidized health services, 20% more access to financial services, and 8% more access to transfers from the government, relative to migrants who did not had a PEP visa. Interestingly, the results for formal contract suggest a bigger effect of the program than the administrative data described in the previous section. This could be explained by the fact that the PEP is helping migrants improve their material working conditions

which in most forms is not yet reflected in contributions to the social security system as formal workers (the explicit measures observed in the government administrative data).

Table II presents the effects of the program as measured by the RD specification. The table presents the conventional estimation procedures for the RD including the conventional, bias-corrected, and the robust bias correction as presented by Cattaneo et al. (2019). The forcing variable reflected (i.e., was multiplied by -1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. Of the three our preferred estimates are those estimated by using the robust bias correction as they are both theoretically sound and lead to improved inference in finite samples.

Although we do not observe statistically significant results for having a contract (as illustrated in column 1), the results are significant for all of the other dependent variables suggesting large and robust effects of the program on improving access to health services, public programs, and financial products. Particularly, the point estimates point to even larger effects that the ones obtained by using methods that include all the sample. For example, that migrants with a PEP visa who arrived to Colombia close to June 8th, 2018 had 54.4% higher SISBEN registration, 23% more access to subsidized health services, 52.2% higher access to financial services, and 18.8% larger access to transfers from the government.The results of the fuzzy RD are also illustrated in Figure V with their 95% confidence intervals.

**Table (II)** Mechanical Effects of the PEP Visa: Fuzzy RD Estimates

	Formal job	SISBEN Access	Subsidized heathcare	Financial products	Transfers
	(1)	(2)	(3)	(4)	(5)
Conventional	0.0856	0.527	0.235	0.465	0.144
	(0.093)	(0.151)	(0.112)	(0.123)	(0.116)
Bias-corrected	0.0981	0.545	0.230	0.529	0.188
	(0.093)	(0.151)	(0.112)	(0.123)	(0.116)
Robust	0.0981	0.545	0.230	0.529	0.188
	(0.115)	(0.175)	(0.131)	(0.153)	(0.139)
Observations	1643	2207	2192	2215	2217
Effective Obs. left	164	209	214	222	232
Effective Obs. right	330	366	384	429	463
Bandwidth left	91.50	80.78	84.46	91.60	97.09
Bandwidth right	91.50	80.78	84.46	91.60	97.09
Order est.	1	1	1	1	1

Notes: This table shows the results of a fuzzy RD of the mechanical outcomes on the date of arrival centered around June 8th 2018 as running variable. The forcing variable reflected (i.e., was multiplied by -1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. The estimation uses a triangular kernel and a common MSERD optimal bandwidth. The dependent variables are: (i) formal employment, an indicator variable equal to one if the respondent has written/verbal contract and they save in a pension fund; (ii) SISBEN, an indicator variable equal to one if the household is enrolled in the proxy mean test used to asses vulnerability in Colombia; (iii) subsidized healthcare, an indicator variable equal to one if the has access to the public healthcare, iv) financial products, an indicator variable equal to one if the household has a savings account or other financial or banking products; and (v) transfers, an indicator variable equal to one if the household received transfers from any official social assistance program.
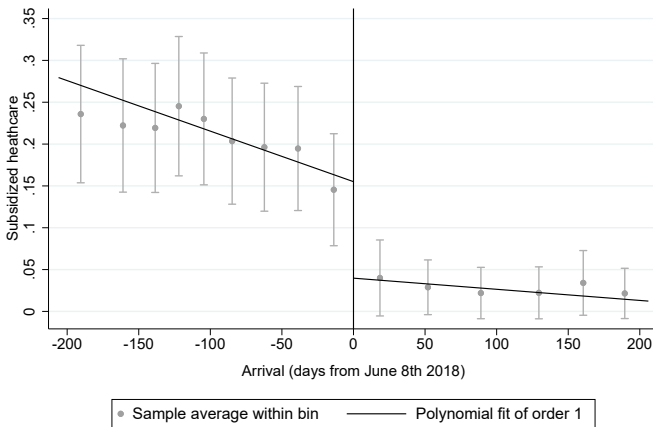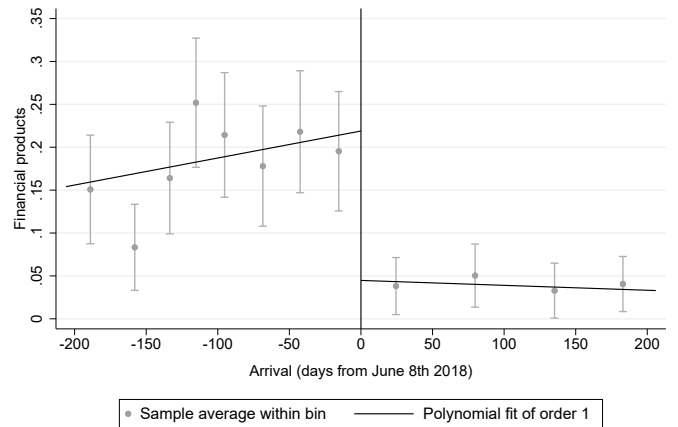
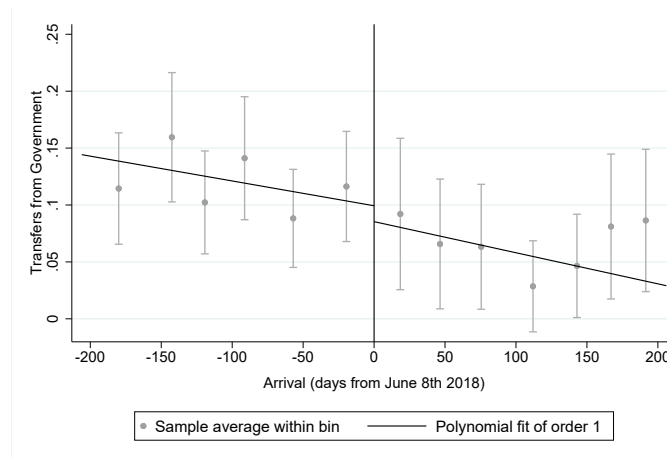**Figure (V)   Mechanical Outcomes RD Plots**
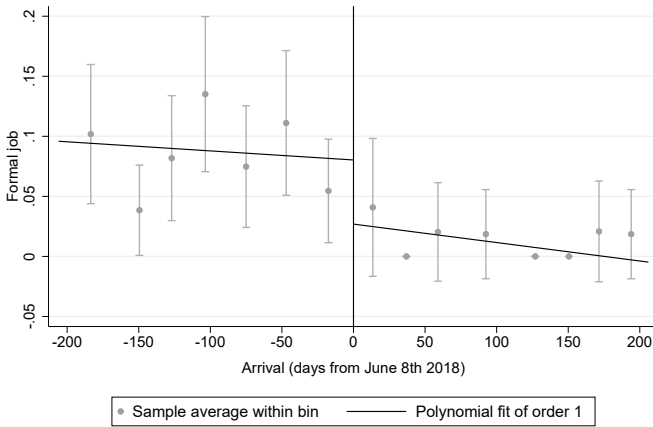
(a) Formal Job
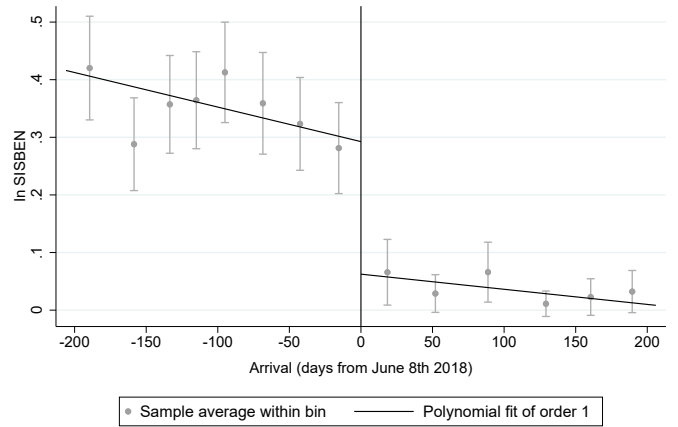
(b) In SISBEN

(c) Subsidized Healthcare

(d) Financial Products

(e) Transfers from Government

Notes: The figures illustrate the treatment effects 200 days around June 8, 2018, when the RAMV census closed. The bars illustrate 95% confidence intervals. In the figure individuals eligible for the program arrived before June 8th, 2018 when the forcing variable takes a value of zero. As such outcomes for migrants in the treatment group are illustrated to the left of the discontinuity. For inference, we follow Cattaneo et al. (2019) and use the mean squared error (MSERD) optimal bandwidths, and the robust bias corrected estimator and confidence intervals.

All in all, the different methodologies consistently suggest that migrants with the PEP visa had larger access to public safety nets and the financial sector. We also document that the effects on labor formalization are small and not consistently significant across the different methodologies implemented. In fact, official data from social security registry shows negligible effects of the program on the formalization of migrants with PEP visa.

## VI.2   Primary Outcomes: PEP visa impacts on migrant's well-being

This section presents the effects of the program in the primary outcomes of interest. Figure VI illustrates the point estimates for the OLS, ITT, and LATE specifications for three panels. Panel A presents the point estimates for 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). Both variables are expressed in Colombian pesos millions. Panel B presents the estimates for employment 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. Finally, panel C illustrates the estimates for mental health using the EQ-5D tool. The first variable indicates whether a respondent has extreme symptoms for anxiety or depression and it is equal to one if the respondent´s report to be very or extremely depressed or anxious (the other three response options are moderately/slightly/not depressed or anxious). The second variable is the first score 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.

Figure (VI)   Impacts of PEP visa on Primary Outcomes: Complete Sample
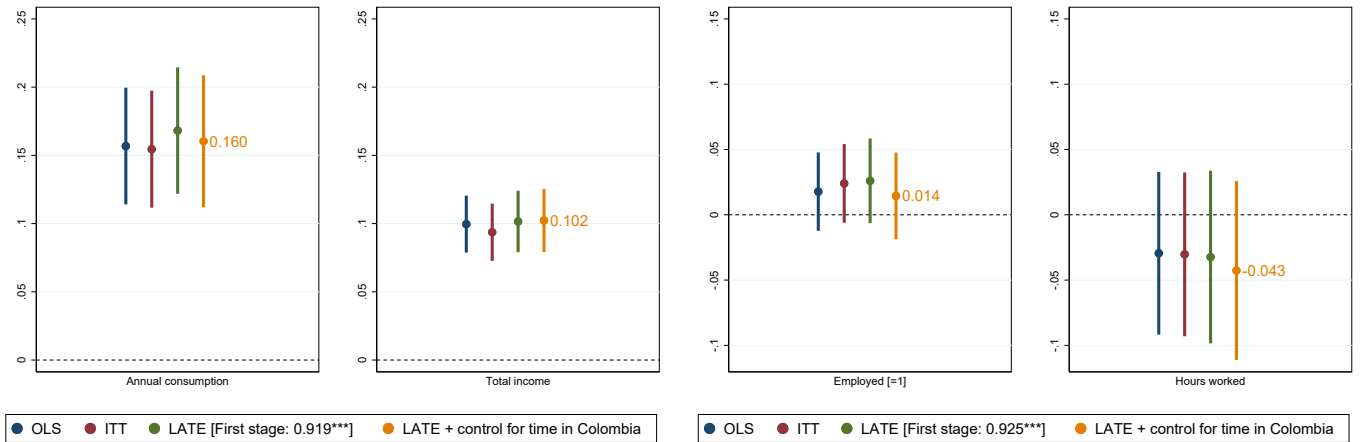
(a) Annual consumption and labor income

(b) Employment and hours worked
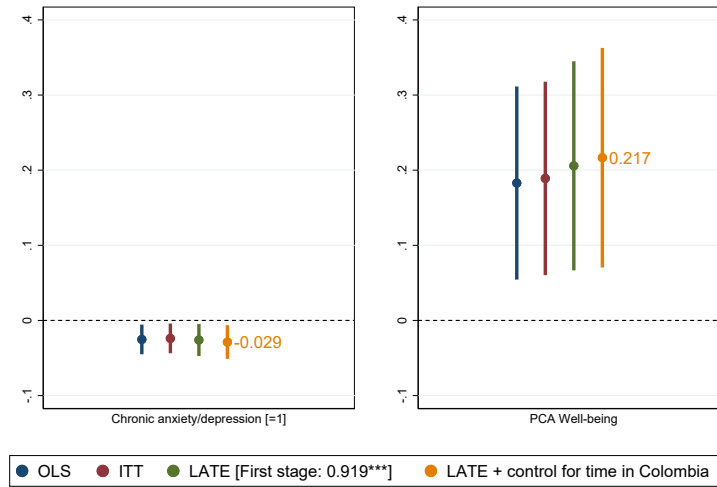
(c) Mental health and well-being

Notes: All confidence intervals at 95% level of significance. Dependent variables: Panel a) logarithm of total annual consumption per capita in million COP and logarithm of total labor income (sum of wage, extra pay and revenue from independent work) in million COP; Panel b) dummy [=1] when a person is employed (wage, independent or family worker) and the logarithm of weekly hours worked; Panel c) dummy [=1] when respondent has extreme symptoms for anxiety or depression and the first score of a PCA index for (i) Mobility, (ii) Anxiety and depression (iii) Daily activities, (iv) Personal care, (v) Pain and fatigue, (vi) Health perception. Individual controls: age, gender, years of education before migration. Labor history in Venezuela: ever worked [=1], type of job, written contract [=1], and gap between last job and migration. Household controls, in Venezuela: number of children, household size and composition, energy, water and sewage [=1], owner of dwelling [=1], had smartphone [=1]. Migration decision: had family/friends in Colombia [=1], knew of job opportunities before migrating [=1], head migrated for health reasons [=1]. The estimates include fixed effects by sampling city and department of residence.

Across all the methodologies that use the complete sample the results suggest strong and large effects of the PEP visa on consumption and income per capita. Particularly, the LATE estimates

that control for the time that the migrant has stayed in Colombia, suggest that migrants with a PEP visa had 16% more annual per capital consumption and 10.2% higher total income per capita. The estimates also suggest no statistical differences in employment or hours worked for migrants with and without a PEP visa. As illustrated in Panel B, all the confidence intervals include the zero, implying we cannot reject the null hypothesis of negligible effects of the program in those dimensions. Lastly, as illustrated in Panel C, migrants with the PEP visa have less extreme anxiety and depression and better well-being. Specifically, migrants with the PEP visa are 2.9% less likely to have symptoms of extreme depression and show improvements of 21.7% in their PCA well-being indexes.

Table III and Figure VII present the results for the RD. The preferred results are those given by the robust bias corrected coefficients which are the ones illustrates in the figures. Consistent with the estimates from the OLS, ITT, and LATE methodologies the RD estimates show positive and large effects of the program on per capita consumption and income. Particularly, they suggest that migrants with a PEP visa who arrived close to June 8th, 2018 to Colombia had 18% more per capita consumption and 24.9% per capita income relative to migrants without PEP. The RD estimates do not allow to identify any statistical significant effects of the PEP visa on employment conditions, hours worked, and mental health. The results are significant and positive for overall health conditions, as measured by the PCA index (albeit only at the 10% significance level). Yet, the effects are larger and more imprecise.

**Table (III)** Impacts of the PEP visa on primary outcomes: Fuzzy RD Estimates

	Annual Consumption	Total income	Employed	Hours worked	Anxiety Depression	PCA Well-being
	(1)	(2)	(3)	(4)	(5)	(6)
Conventional	0.502	0.150	0.218	0.226	0.00983	0.726
	(0.197)	(0.082)	(0.171)	(0.319)	(0.111)	(0.682)
Bias-corrected	0.598	0.186	0.249	0.508	-0.0112	1.145
	(0.197)	(0.082)	(0.171)	(0.319)	(0.111)	(0.682)
Robust	0.598	0.186	0.249	0.508	-0.0112	1.145
	(0.239)	(0.098)	(0.206)	(0.386)	(0.138)	(0.825)
Observations	2219	1971	3876	1343	2219	2219
Effective Obs. left	226	187	370	99	231	223
Effective Obs. right	447	392	723	202	457	424
Bandwidth left	94.76	89.88	85.98	60.09	96.64	89.89
Bandwidth right	94.76	89.88	85.98	60.09	96.64	89.89
Order est.	1	1	1	1	1	1

Notes: This table shows the results of a fuzzy RD of the primary outcomes on the date of arrival centered around June 8th 2018 as running variable. The forcing variable reflected (i.e., was multiplied by −1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. The estimation uses a triangular kernel and a common MSERD optimal bandwidth. Dependent variables: Panel a) logarithm of total annual consumption per capita in million COP and logarithm of total labor income (sum of wage, extra pay and revenue from independent work) in million COP; Panel b) dummy [=1] when a person is employed (wage, independent or family worker) and the logarithm of weekly hours worked; Panel c) dummy [=1] when respondent has extreme symptoms for anxiety or depression and the first score of a PCA index for (i) Mobility, (ii) Anxiety and depression (iii) Daily activities, (iv) Personal care, (v) Pain and fatigue, (vi) Health perception. Individual controls: age, gender, years of education before migration. Labor history in Venezuela: ever worked [=1], type of job, written contract [=1], and gap between last job and migration. Covariate variables included: age, gender, years of education before migration; Labor history in Venezuela: ever worked [=1], type of job, written contract [=1], and gap between last job and migration; household in Venezuela: number of children, household size and composition, energy, water and sewage [=1], owner of dwelling [=1], had smartphone [=1]; migration: had family/friends in Colombia [=1], knew of job opportunities before migrating [=1], head migrated for health reasons [=1]. Fixed effects: sampling city and department of residence.

Figure (VII) Primary Outcomes: Fuzzy RD Plots
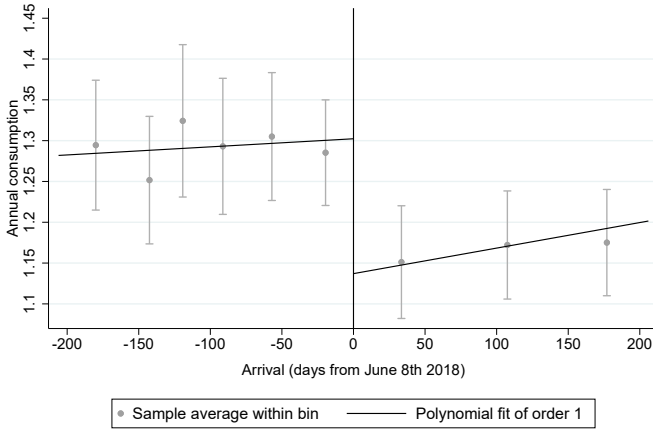
(a) Annual Consumption
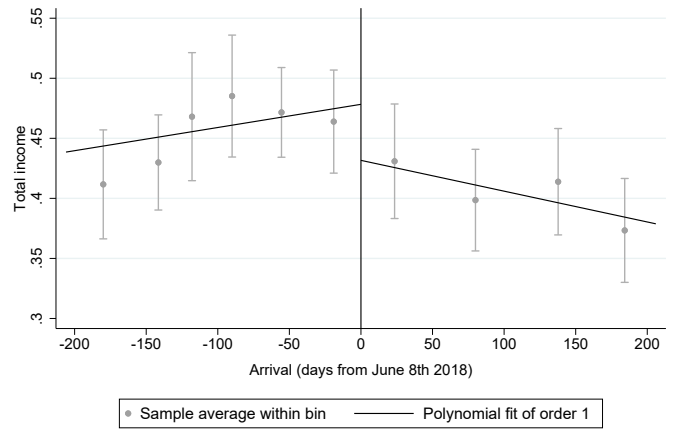
(b) Total Income
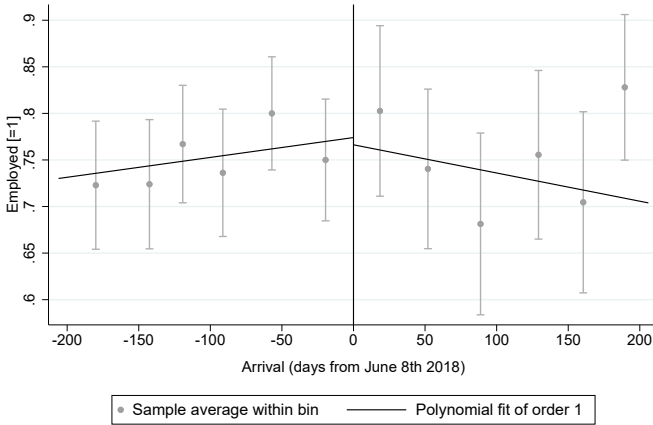
(c) Employed [=1]
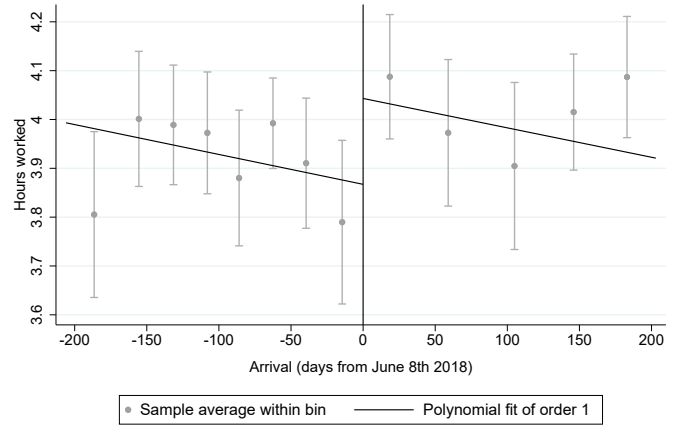
(d) Hours Worked
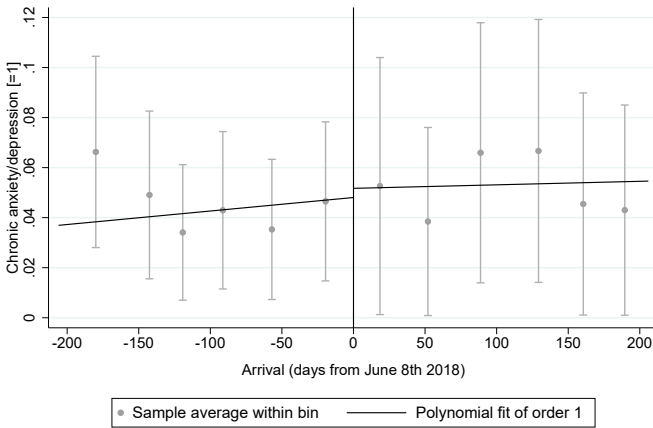
(e) Chronic Anxiety / Depression [=1]
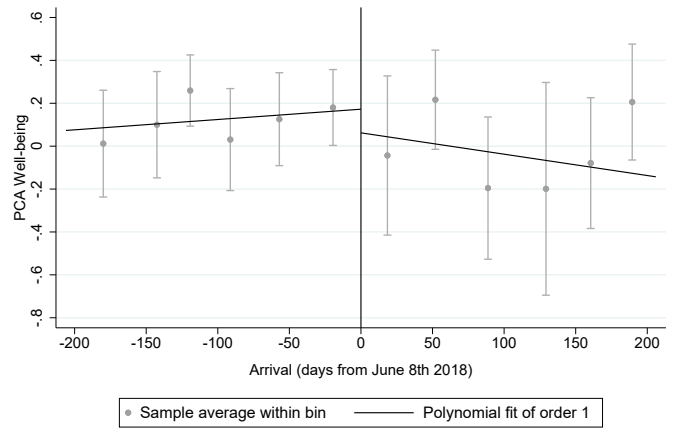
(f) PCA Well-being

Notes: The figures illustrate the treatment effects 200 days around June 8, 2018, when the RAMV census closed. The bars illustrate 95% confidence intervals. In the figure individuals eligible for the program arrived before June 8th, 2018 when the forcing variable takes a value of zero. As such outcomes for migrants in the treatment group are illustrated to the left of the discontinuity. For inference, we follow Cattaneo et al. (2019) and use the mean squared error (MSERD) optimal bandwidths, and the robust bias corrected estimator and confidence intervals.

Overall, we find consistent evidence that migrants holding a PEP visa had higher consumption and income per capita and better overall health, relative to migrants without PEP.

VI.3   Secondary outcomes: Exploratory analysis of the impacts of the PEP visa

This section explores the effects of the PEP visa on four groups of outcomes: i)labor outcomes, ii) health and nutrition, iii) integration to Colombian society, and iv) COVID-19 resilience.

VI.3.1   Impacts of PEP visa on other labor outcomes

Figure VIII presents the estimates of the OLS, ITT, and LATE specifications for the complete sample. Particularly, it presents the effects of holding a PEP v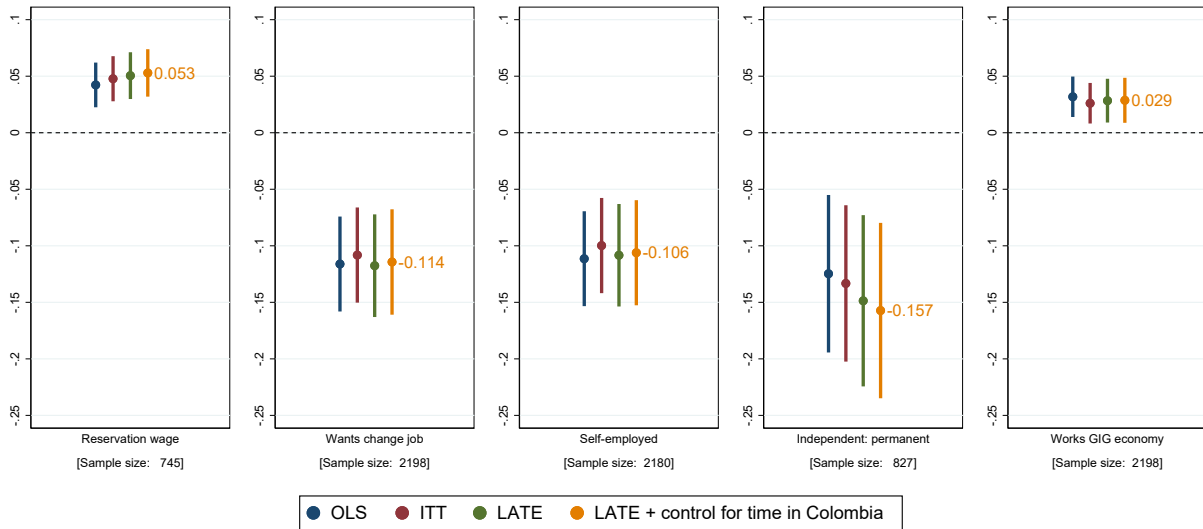isa on five variables: (i) reservation wage is the logarithm of the minimum monthly wage an unemployed worker would accept to take a job (expressed in Colombian millions of pesos); (ii) wants to change employment is an indicator variable equal to one if the individual wants to change employment; (iii) self-employed is an indicator variable equal to one if the type of worker for main occupation is independent or self-employed; (iv) permanent is an indicator variable equal to one if self-employed workers say their work status is permanent; and (v) works GIG economy is an indicator variable equal to one if any job is performed through a mobile app or website. These variables comprise those covariates which we found to have interesting results when exploring the effects of the program in the collected labor outcomes. Table IV presents the estimates of the fuzzy RD specification for those migrants who arrive to Colombia close to June 8th, 2018 when the RAMV census closed.

All estimates suggest that migrants with a PEP visa have better labor conditions and opportunities. For example, migrants with a PEP visa have higher reservation wages, are more satisfied with their jobs, and report less self-employment, relative to those migrants without a PEP visa. However, although the effects are significant for the estimates of the methodologies that use all

Figure (VIII)   Impacts of PEP visa on other labor outcomes: Complete sample

Notes: This table shows the results of a fuzzy RD of the secondary outcomes on the date of arrival centered around June 8th 2018 as running variable. The forcing variable reflected (i.e., was multiplied by -1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. The estimation uses a triangular kernel and a common MSERD optimal bandwidth. Dependent variables: (i) reservation wage is the minimum monthly wage an unemployed worker would accept to take job (logarithm, in million of Colombian pesos); (ii) wants to change employment is an indicator variable equal to one if the individual wants to change employment; (iii) self-employed is an indicator variable equal to one if the type of work for main occupation is reported as independent or self-employed; (iv) permanent, is an indicator variable equal to one if self-employed workers say their work status is permanent (the survey question is: Is your business/activity: occasional/seasonal/permanent?); and (v) works GIG economy is equal to one if any job is performed through a mobile app or website. The estimates include fixed effects by sampling city and department of residence.

Table (IV) Impacts of the PEP visa on labor outcomes: Fuzzy RD estimates

	Reservation wage	Wants change job	Self-employed	Independent: permanent	Works GIG economy
	(1)	(2)	(3)	(4)	(5)
Conventional	0.0780	-0.0338	-0.249	-0.414	-0.0374
	(0.082)	(0.178)	(0.181)	(0.375)	(0.054)
Bias-corrected	0.0809	-0.00800	-0.305	-0.512	-0.0447
	(0.082)	(0.178)	(0.181)	(0.375)	(0.054)
Robust	0.0809	-0.00800	-0.305	-0.512	-0.0447
	(0.101)	(0.220)	(0.221)	(0.449)	(0.063)
Observations	756	2442	2412	959	2442
Effective Obs. left	91	262	252	91	229
Effective Obs. right	128	554	532	182	473
Bandwidth left	87.88	101.7	99.71	94.46	86.80
Bandwidth right	87.88	101.7	99.71	94.46	86.80
Order est.	1	1	1	1	1

Notes: This table shows the results of a fuzzy RD of the secondary outcomes on the date of arrival centered around June 8th 2018 as running variable. The forcing variable reflected (i.e., was multiplied by -1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. The estimation uses a triangular kernel and a common MSERD optimal bandwidth. Dependent variables: (i) reservation wage is the minimum monthly wage an unemployed worker would accept to take job (logarithm, in million of Colombian pesos); (ii) wants to change employment is an indicator variable equal to one if the individual wants to change employment; (iii) self-employed is an indicator variable equal to one if the type of work for main occupation is reported as independent or self-employed; (iv) permanent, is an indicator variable equal to one if self-employed workers say their work status is permanent (the survey question is: Is your business/activity:occasional/seasonal/permanent?); and (v) works GIG economy is equal to one if any job is performed through a mobile-app or website. The estimates include fixed effects by sampling city and department of residence.

the sample (as illustrated in Figure VIII) they are less precise and statistically insignificant for the RD estimates (see Table IV). Moreover, the different estimates show different directions of the effects of the program on whether migrants report having a permanent job and being part of the GIG economy. As such it is not possible to make a conclusion on the impacts of the program in those variables.

VI.3.2   Impacts on food security and immunizations

Figure IX and Table V present the estimates for the effects of the program for all the specifications proposed in the empirical analysis. Specifically, they illustrate the estimates for the effects of the program in the following variables: i)-ii) skipped meals, are indicator variables equal to one if

the household skipped a meal in the last month before COVID and during COVID, (iii) Access to healthcare is an indicator variable equal to one the last time someone in that household needed heath care, they did they get it; and (iv) children on immunization schedule, is equal to one if all children are up to date with their vaccines.

All the coefficients point to positive effects of holding a PEP visa on food security, health access, and vaccination access. However, the results are only consistently significant for all the methodologies for the variable of skipped a meal before COVID, are more imprecise for the other outcomes specially for the RD estimates. This last may be a problem of power as the RD has a limited sample by design.

Figure (IX) Impacts of PEP visa in food security and immunization: Complete sample
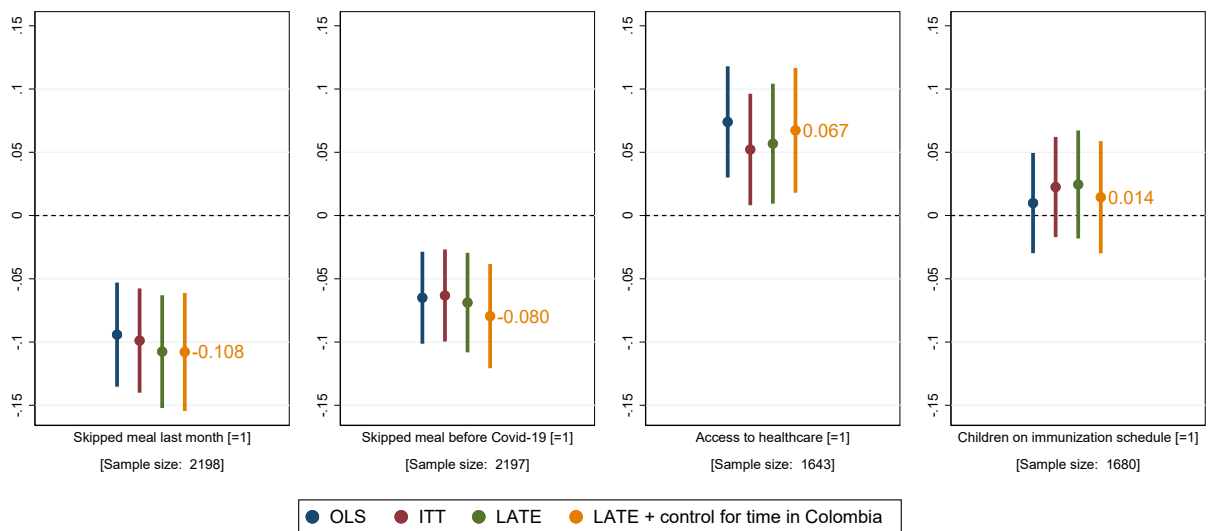
Notes: Dependent variables: skip meal is [=1] if answer to it: In the last month/Before Covid-19, how often did someone in your household skipped a meal? is equal to one, it is measured daily or weekly; (iii) Access to healthcare is [=1] if answer to it:Last time someone in your household needed heath care, did they get it? is yes; and (iv)children on immunization schedule [=1]. The estimates include fixed effects by sampling city and department of residence.

VI.3.3 Impacts on Integration

Figure X and Table VI illustrate the estimates for the effects of the PEP visa on proxies for integration. Particularly, we explore the effects of the program in the following variables: (i) integration

Table (V)   Impacts of the PEP visa on food security and immunizations: Fuzzy RD Estimates

	Skipped meal last month [=1]	Skipped meal before Covid-19 [=1]	Access to healthcare [=1]	Children on immunization schedule [=1]
	(1)	(2)	(3)	(4)
Conventional	-0.430	-0.0432	0.234	0.00696
	(0.131)	(0.085)	(0.116)	(0.053)
Bias-corrected	-0.361	-0.0384	0.200	0.0528
	(0.131)	(0.085)	(0.116)	(0.053)
Robust	-0.361	-0.0384	0.200	0.0528
	(0.155)	(0.099)	(0.147)	(0.062)
Observations	8266	8262	6386	7043
Effective Obs. left	516	833	584	869
Effective Obs. right	894	1386	940	1523
Bandwidth left	53.04	83.71	74.29	106.1
Bandwidth right	53.04	83.71	74.29	106.1
Order est.	1	1	1	1

Notes: This table shows the results of a fuzzy RD of the secondary outcomes on the date of arrival centered around June 8th 2018 as running variable. The forcing variable reflected (i.e., was multiplied by -1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. The estimation uses a triangular kernel and a common MSERD optimal bandwidth. Dependent variables: skip meal is [=1] if answer to it: In the last month/Before Covid-19, how often did someone in your household skipped a meal? is equal to one, it is measured daily or weekly; (iii) Access to healthcare is [=1] if answer to it:Last time someone in your household needed heath care, did they get it? is yes; and (iv) Children on immunization schedule [=1]. The estimates include fixed effects by sampling city and department of residence.

to Colombian society, is an indicator variable equal to one if the migrant answers that they feel somewhat or very much that they feel part of the Colombian society, ii) integration to neighborhood, is an indicator variable equal to one if the migrant answers that they feel somewhat or very much that they feel part of their neighborhood, (iii) Colombian friends, is an indicator variable equal to one if the answer to the question how many of your friends are Colombian is all or most; (iv) discrimination, is an indicator variable equal to one if the migrant has ever felt discriminated in Colombia; and (v) trust government, is an indicator variable equal to one if the migrant says they strongly agree or agree with the idea that they trust the Colombian government.

Figure (X) Impacts of PEP visa on Integration: Complete sample
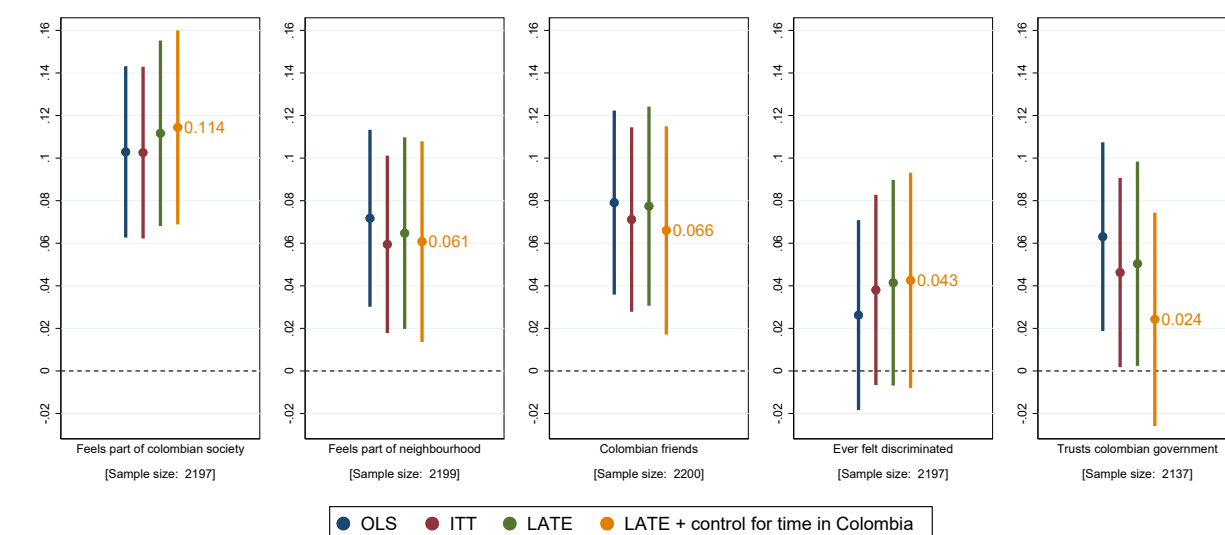
Notes: Dependent variables: (i)-(ii) integration to Colombian society/neighbourhood *(How much do you feel part of the Colombian society/your neighbourhood?)* is equal to one if answer is "Very much" or "Somewhat"; (iii) Colombian friends *(How many of your friends are Colombian?)* is equal to one if the answer is all or most; (iv) discrimination *(Have you ever felt discriminated?)* is equal to one if the answer is yes; (v) trust government, *(Can you trust the Colombian government?)* is equal to one if the answer is "Strongly agree" or "agree". All estimates include fixed effects by sampling city and department of residence.

Table (VI) Impacts of the PEP visa on integration: Fuzzy RD estimates

	Feels part of colombian society	Feels part of neighbourhood	Colombian friends	Ever felt discriminated	Trusts colombian government
	(1)	(2)	(3)	(4)	(5)
Conventional	0.184	0.131	-0.448	-0.526	-0.0831
	(0.108)	(0.096)	(0.128)	(0.114)	(0.106)
Bias-corrected	0.149	0.145	-0.546	-0.613	-0.121
	(0.108)	(0.096)	(0.128)	(0.114)	(0.106)
Robust	0.149	0.145	-0.546	-0.613	-0.121
	(0.136)	(0.113)	(0.149)	(0.139)	(0.124)
Observations	8258	8266	8265	8259	8056
Effective Obs. left	659	770	512	770	773
Effective Obs. right	1102	1195	855	1183	1285
Bandwidth left	65.36	72.61	52.43	71.73	79.31
Bandwidth right	65.36	72.61	52.43	71.73	79.31
Order est.	1	1	1	1	1

Notes: This table shows the results of a fuzzy RD of the secondary outcomes on the date of arrival centered around June 8th 2018 as running variable. The forcing variable reflected (i.e., was multiplied by -1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. The estimation uses a triangular kernel and a common MSERD optimal bandwidth. Dependent variables: (i)-(ii) integration to Colombian society/neighbourhood *(How much do you feel part of the Colombian society/your neighbourhood?)* is equal to one if answer is "Very much" or "Somewhat"; (iii) Colombian friends *(How many of your friends are Colombian?)* is equal to one if the answer is all or most; (iv) discrimination *(Have you ever felt discriminated?)* is equal to one if the answer is yes; (v) trust government, *(Can you trust the Colombian government?)* is equal to one if the answer is "Strongly agree" or "agree". All estimates include fixed effects by sampling city and department of residence.

We only find consistent results for the effects of the program on the feeling of integration of migrants to the Colombian society and their neighborhood. The results however are imprecise for the RD estimates. The point estimates for the other outcomes do not allow to make any conclusions as they point to different directions and have large standard errors.

VI.3.4 Impacts on COVID-19 Resilience

Figure XI and Table VII present the estimates for the effects of the program for the following indicator variables variables:(i) household head had COVID-19 symptoms [=1]; (ii) household head had access to healthcare if they had COVID-19 symptoms [=1]; (iii) members of household did not get heath care or COVID-19 tests for fear of deportation; (iv) because of the COVID-

19 crisis the household was evicted from their home [=1], v) because of COVID-19 crisis the households had to sell assets [=1], vi) because of COVID the household received help in cash or kind [=1]. The estimates for the coefficients for variables ii) and iii) for the Fuzzy RD are not presented as there was not enough density of responses to estimate the regressions around the discontinuity.

Figure (XI) Impacts of PEP visa on COVID-19 resilience: Complete sample
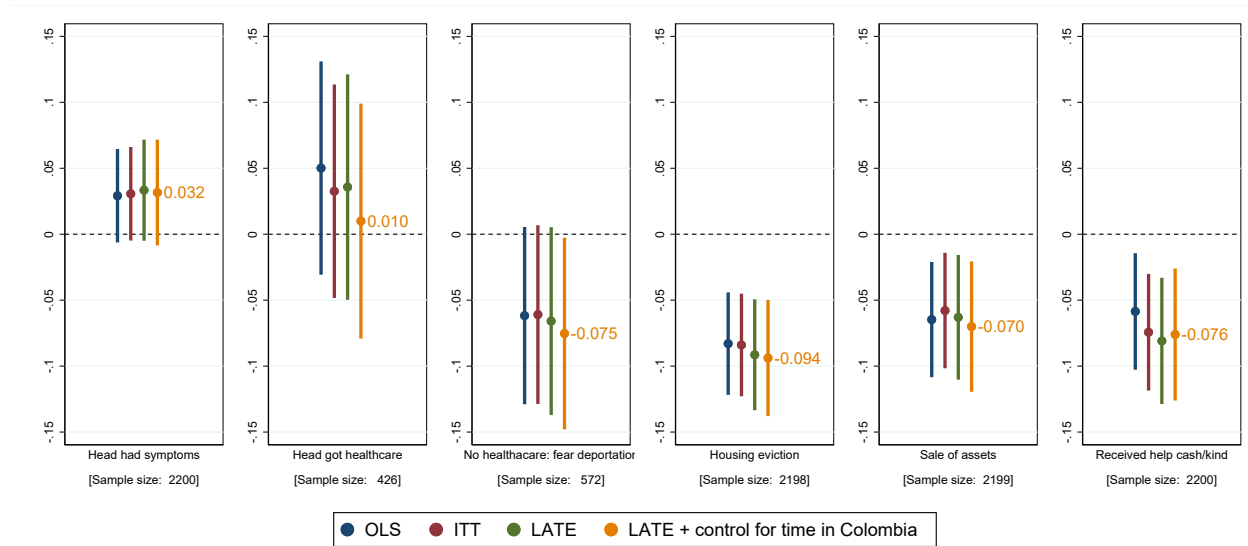
Notes: Dependent variables: (i) household head had COVID-19 symptoms [=1]; (ii) Household head got healthcare if they had COVID-19 symptoms [=1]; (iii) Member of household did not get heath care or COVID-19 test for fear of deportation; (iv)(v)(vi) because of the COVID-19 crisis this household was evicted from their home [=1], had to sell valuable goods [=1], or received help in cash or in kind [=1]. All estimates include fixed effects for sampling city and department of residence.

We only find consistent and significant effects of the program across all methodologies for the effects of the program in the probability of being evicted from a home and selling assets. Particularly, migrants with a PEP visa show more resilience to the COVID-19 economic shock and have a lower probability of being evicted from their homes or selling their assets relative to migrants without a PEP visa.

Table (VII) Impacts of the PEP visa on COVID-19 resilience: Fuzzy RD Estimates

|	Head had symptoms	Housing eviction	Sale of assets	Received help cash/kind
	(1)	(2)	(3)	(4)
Conventional	0.388	-0.394	-0.271	-0.0915
	(0.073)	(0.118)	(0.088)	(0.104)
Bias-corrected	0.416	-0.465	-0.277	-0.0388
	(0.073)	(0.118)	(0.088)	(0.104)
Robust	0.416	-0.465	-0.277	-0.0388
	(0.077)	(0.140)	(0.101)	(0.131)
Observations	8270	8263	8265	8270
Effective Obs. left	217	582	797	659
Effective Obs. right	408	1005	1301	1106
Bandwidth left	27.45	58.55	78.34	65.75
Bandwidth right	27.45	58.55	78.34	65.75
Order est.	1	1	1	1

Notes: This table shows the results of a fuzzy RD of the secondary outcomes on the date of arrival centered around June 8th 2018 as running variable. The forcing variable reflected (i.e., was multiplied by -1) around June 8th, to get a standard specification in which the treated observations with the PEP visa are to the right of the cutoff. The estimation uses a triangular kernel and a common MSERD optimal bandwidth. Dependent variables: (i) household head had COVID-19 symptoms [=1]; (ii) Household head got healthcare if they had COVID-19 symptoms [=1]; (iii) Member of household did not get heath care or COVID-19 test for fear of deportation; (iv)(v)(vi) because of the COVID-19 crisis this household was evicted from their home [=1], had to sell valuable goods [=1], or received help in cash or in kind [=1]. All estimates include fixed effects for sampling city and department of residence.

VI.4 Heterogeneous Effects

In this section we estimate heterogeneous effects of the program by gender, age, and education level of the respondent. We focus only on the LATE estimates that include the control for time spent in Colombia since RD estimates have a small sample and become imprecise once the sample is restricted to specific groups.

Figure XII presents the estimates of the LATE specification diving the sample in gender, age, and education groups. Each point is a separate regression and the bars present the 95% confidence intervals. All the regressions include the same controls as the main specifications. Across the panels the estimates suggest that males, older than 40 years, who have higher education tend to benefit more of the PEP visa.

Figure (XII)   Heterogeneous Effects for LATE estimates
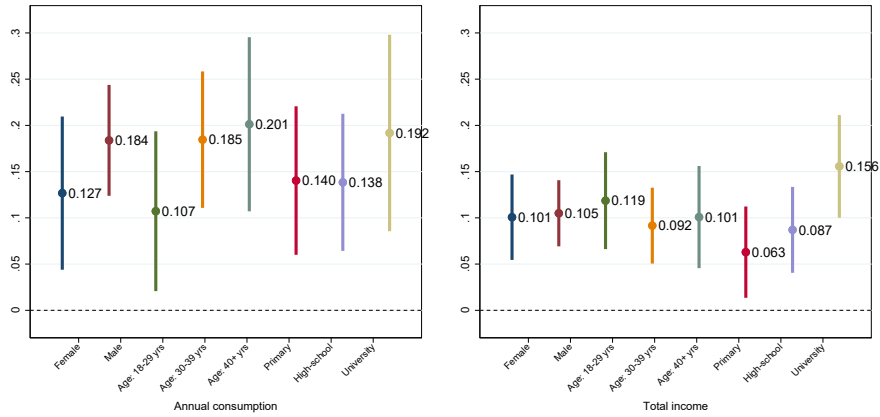
a) Consumption and Income
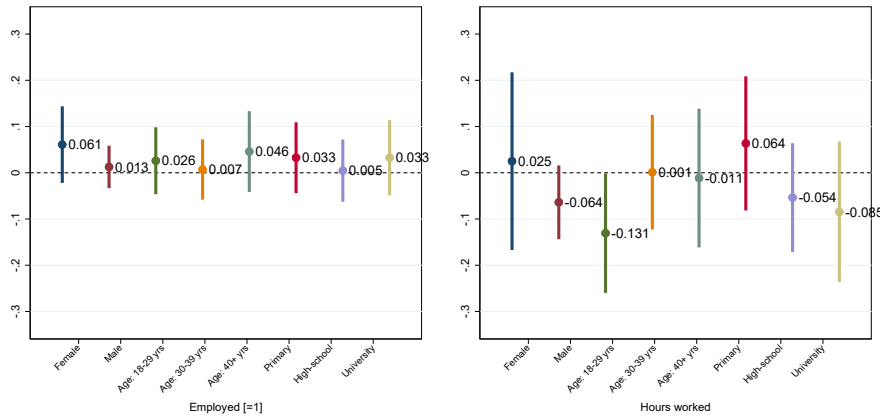
b) Employment and Hours Worked

c) Mental and Overall Health

Notes: Each point represents a different regression for the sample that satisfies the criteria. Bars illustrate 95% CI. All the variable have the same representation as described in Figure VI.

VII   Robustness Tests

VII.1   Other RDD specifications

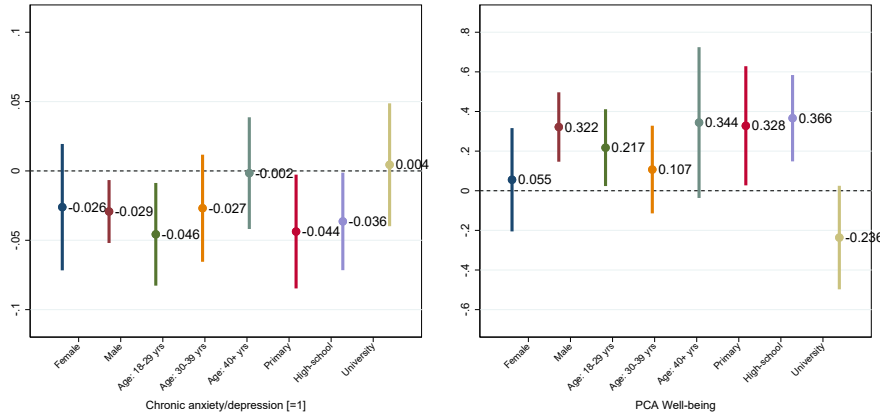This section presents additional tests that support the validity of the regression discontinuity estimates. Particularly, Figure XIII presents the point estimates of the effects of the PEP visa on our primary outcomes of for the robust bias-corrected point estimators and confidence intervals. Each point corresponds to a different estimation and its corresponding 95% confidence intervals for different bandwidths and estimation techniques. The figures show that as the sample is restricted to observations closer to the cutoff date (June 8th, 2018) there is less precision since the sample size shrinks. However, across the board the estimates reveal robust effects of the program on annual consumption per capita (see panel A). The estimates also illustrate positive effects of the program in income per capital although the effects are less precise.

The estimates also show consistent null effects of the PEP visa on employment, hours worked, and measures of anxiety and depression and overall health.

VIII   Concluding Remarks

This paper examines the short term effects of a large and generous regularization on migrant's life outcomes. The amnesty not only granted a job permit but gave irregular migrants access to all safety nets in Colombia for 2 years.

The main conclusion of the analysis is that migrants with a PEP visa had overall better well-being compared to the other migrants. For example, migrants with a PEP visa had higher consumption and income per capita, better labor conditions, more access to safety nets and financial markets, they felt more integrated to the Colombian society, had better food security, and were more resilient to the COVID-19 crisis than migrants without a PEP. As such, migrants with a PEP visa became more self-sufficient compared to migrants without access to the amnesty.

Figure (XIII) Primary outcomes estimates using RD and different bandwidths
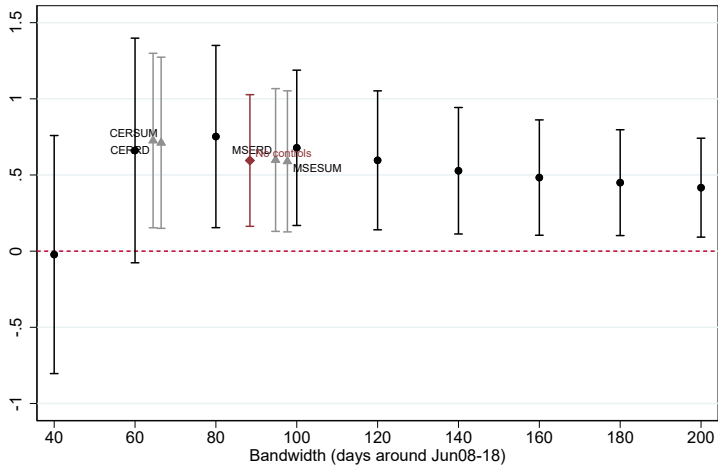
(a) Annual Consumption
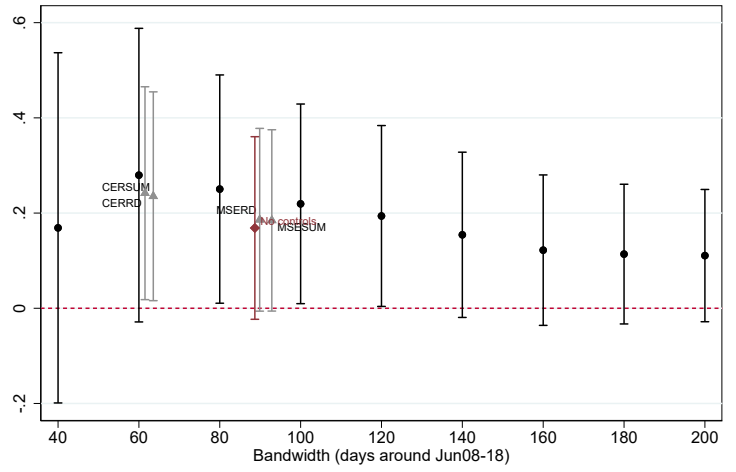
(b) Income
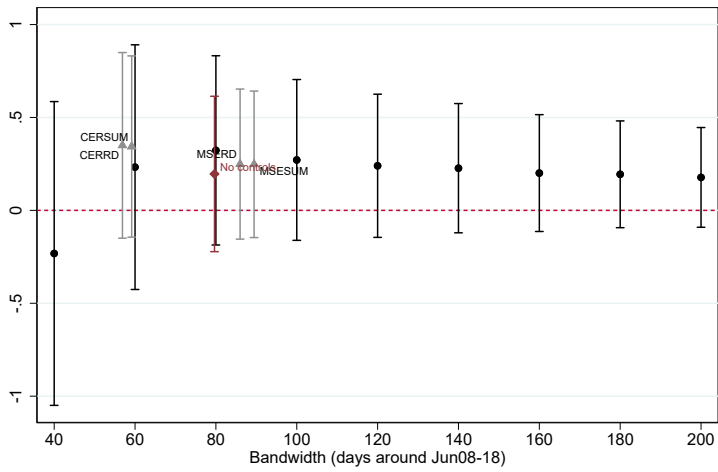
(c) Employment
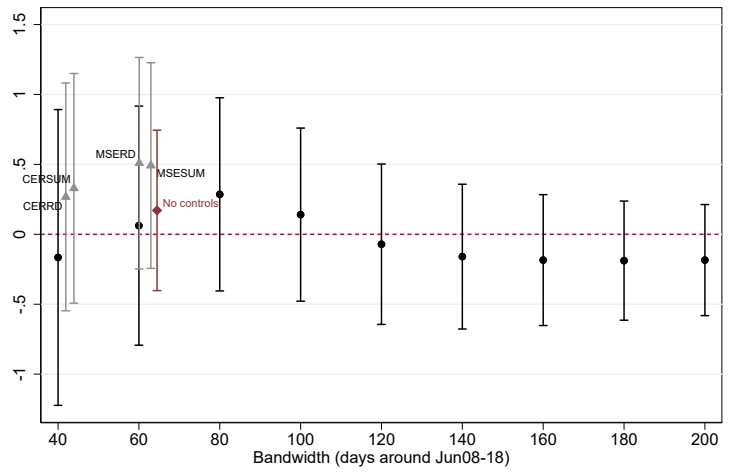
(d) Hours Worked
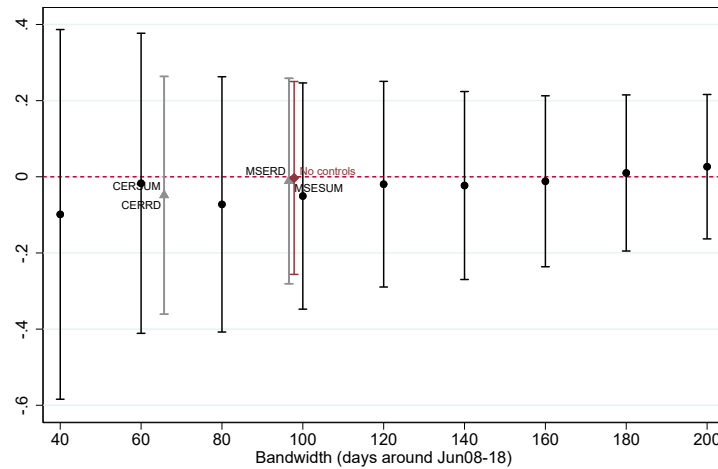
(e) Anxiety and Depression

(f) Well-Being

46
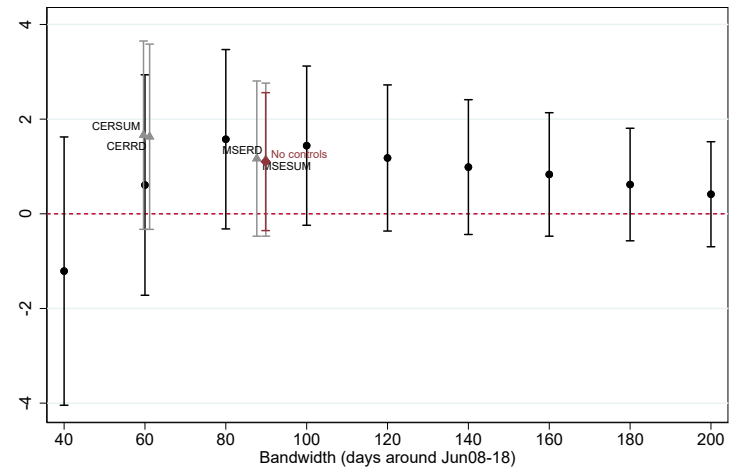
However, the amnesty effects on the labor formalization of migrants was negligible. This could have been the consequence of a combination of factors. First, the pandemic and the subsequent sharp economic crisis made difficult the creation of additional jobs. Second, migrants report other bottlenecks preventing them from securing a formal job, including the difficulty of getting a bank account. Third, some formal firms may be uninformed on the validity of the PEP visa. Fourth, Venezuelan refugees may be reluctant to move to a formal job as they will have to pay taxes. Previous work by Bahar et al. (2021) suggest that there is a large premium for working in the formal sector in Colombia, so that the last hypothesis is unlikely to explain the results. Fifth, there might not be demand for workers in the formal sector. According to the Colombian Statistics Agency, informal employment in 2019 accounted for roughly 62.9% of the total employed population. As such, formal jobs are likely available for individuals who have high education, are well connected, and have been working in Colombia for many years. Refugees have less networks and even if educated face the barriers of education certification/validation. Future research should try to evaluate the effectiveness of interventions targeting each of these barriers in increasing the formalization rate of refugees.

The important distinction on the effects of migrant's amnesties inside developing countries that we document in this paper, is that migrants in countries with large informal sectors are already part of the informal sector even without a job permit. So the amnesties are not giving a migrant the right to work per se, they are only giving them access to the formal sector. As such, granting a permit may or may not allow a worker to join the formal sector, but it improves migrant's material labor conditions, gives them access to social safety nets, and facilitates their feelings of integration to host societies.

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Appendix A: Details on the Survey Instrument

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

   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 census in 2018. If the contact came from the sampling frame of irregular migrants we asked them if hey had a PEP and for the date of arrival to Colombia. For the census sample we knew this information from the data in the census. Only families whose main respondent arrived to Colombia from January 2017 to December 2018 were eligible.

2. **Household Roster:** in the roster we asked socio-demographic, education and PEP related question to every member of the nuclear family (household head, partner, kids, parents,

parents-in-law, daughter/son-in-law):

- Socio-demographic: age, relation to head, citizenship (Colombian and/or Venezuelan) and proof of citizenship, gender, civil status, date of arrival to Colombia, date when they became part of the family, city of birth and residence in Venezuela.

- Education: maximum level of education before migration, current level of education and enrollment, title validation in Colombia, reasons why their title has not been validated and whether they have lost a job because the title is not valid in Colombia.

- PEP: whether they have PEP, date of issue of the PEP, reason why they do not have a PEP, perceived benefits of having a PEP, renovation information of the PEP (the PEP had to be renewed every two years) and whether they registered in the census. We also ask last week's and last month's income, healthcare regime, and expected lenght of stay in Colombia.

3. **Labor module:** the main respondent and a second member of working age in the household had to respond the labor module.

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 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 registered, monthly revenue, type of business (permanent, temporal or seasonal), fre-

quency of activity (daily, weekly, monthly, etc...) and reason for being independent worker.

- Unemployed: reason for not finding a job, minimum wage they would accept to work, duration of unemployment, and means through which they are looking for a job.

- Covid-19: we ask 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 ask 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 ask them about the number of jobs they have had, if they have been unemployed and the duration of the longest period of unemployment, and whether the knew of opportunities of employment before migrating.

Labor history in Venezuela: we ask about the best job they had in Venezuela to capture the full length of the skill downgrade: area of employment, contract, relevance of work with previous training or education, and reason for leaving that job. We also ask about the area of employment of immediate job before migrating and about the gap between the last job and migration.

4. **Household Module:**

- Migration: time spent in the current *municipio* of residence, household composition in Venezuela, reasons why partner/spouse/kids moved at a different time or stayed in Venezuela, whether they had friends or family in Colombia before migrating, if they helped upon arrival and how they helped. We also ask them if they know of people who have returned to Venezuela and why they have done so.

- Health and healthcare:

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- 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 ask if children are on their immunization schedule, if there are pregnant women in the household if the have access to prenatal care, if any member of the family has a chronic condition if they receive care and have access to medicine.

- Mental health: We collected the EQ-5D (revisar nombre con Andrés), 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 ask about symptoms of members of the family. If the household head had symptoms we ask if they got a test, the result of the test and the type of healthcare they received. We ask if because of the pandemic any member of the family has perceived more discrimination, has had lower incomes, has been evicted, has had to sublet their dwelling, has been afraid to seek healthcare for fear of deportation, has had to borrow money, has received help from NGOs/Government or had thought of returning to Venezuela.

- Food insecurity: we ask if the family has 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 to society: we ask how much they feel part of the Colombian society and of their neighbourhood, if the have Colombian friends, if they are part of an organization of migrants, and if they have ever felt discriminated, in what context and how frequently. We laos ask if they have access to official services such as SISBEN (vulnerability assessment system), cash transfer programs, and if they have ever filed a report, for what reason and if not what kept them from doing so.

- Pro-social behaviour: We ask them how much they agree or disagree with the follow-

ing 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, 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 had some impact in their answers.

- Housing and connectivity:

  - Housing: we ask 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 live in the dwelling besides from the nuclear family recorded in the household roster.

  - Connectivity: 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 ask respondents to tell us how much the household spent on different food and services categories the last time they bought them. We also ask them for the total expenditure of the family and the total expenditure on food.

Appendix B: Descriptive Statistics

Table (B.1)   Descriptive statistics: Venezuelan migrants

	Irregular	PEP	Mean Diff. (p-value)
	(1)	(2)	(3)
Individual variables*			
Age (years)	31.971	35.467	0.000
	(8.870)	(9.294)	
Female [=1]	0.470	0.330	0.000
	(0.499)	(0.470)	
Venezuelan ID [=1]	0.989	0.998	0.008
	(0.103)	(0.042)	
Time in Colombia (months)	40.351	45.701	0.000
	(9.147)	(10.371)	
Level of education before migration:			
Pre-school[=1]	0.013	0.005	0.051
	(0.115)	(0.073)	
Primary [=1]	0.302	0.240	0.001
	(0.459)	(0.427)	
Middle or high school [=1]	0.447	0.411	0.081
	(0.497)	(0.492)	
Technical [=1]	0.087	0.153	0.000
	(0.282)	(0.360)	
University [=1]	0.128	0.182	0.000
	(0.335)	(0.386)	
Title recognised [=1]	0.001	0.005	0.099
	(0.030)	(0.067)	
Household variables			
Size of household	5.589	5.150	0.001
	(3.474)	(2.746)	
Size of household roster	3.635	3.412	0.001
	(1.487)	(1.662)	
Households in dwelling	1.811	1.887	0.158
	(1.202)	(1.308)	
Number of children	1.803	1.455	0.000
	(1.268)	(1.308)	
Colombian kids in household (number)	0.305	0.193	0.000
	(0.517)	(0.432)	
Number of members by age group:			
0-5 yrs old	0.757	0.441	0.000
	(0.803)	(0.664)	
6-18 yrs old	0.922	0.798	0.004
	(1.016)	(1.006)	
19-25 yrs old	0.568	0.437	0.000
	(0.711)	(0.668)	
26-65 yrs old	1.354	1.685	0.000
	(0.855)	(0.904)	
65+ yrs old	0.035	0.051	0.064
	(0.183)	(0.237)	
Friends/family in Col. before migrating	0.745	0.706	0.040
	(0.436)	(0.456)	
Friends/family helped upon arrival	0.586	0.583	0.864
	(0.493)	(0.493)	
Observations	1,122	1,110	2,232

Table (B.2) Descriptive statistics: Controls at Baseline

	Irregular	PEP	Mean Diff. (p-value)
	(1)	(2)	(3)
Individual variables			
Female [=1]	0.589	0.531	0.000
	(0.492)	(0.499)	
Age (years)	32.022	35.251	0.000
	(9.903)	(10.556)	
Time in Colombia (months)	37.178	41.934	0.000
	(10.006)	(16.461)	
In Venezuela, before migrating:			
Ever worked [=1]	0.973	0.988	0.001
	(0.164)	(0.110)	
Employed at private firm [=1]	0.589	0.610	0.193
	(0.492)	(0.488)	
Employed with Government [=1]	0.153	0.153	0.980
	(0.360)	(0.360)	
Self-employed or employer [=1]	0.170	0.185	0.216
	(0.376)	(0.389)	
Written contract [=1]	0.414	0.507	0.000
	(0.493)	(0.500)	
Knew of job opportunity before migrating [=1]	0.350	0.336	0.338
	(0.477)	(0.472)	
Gap between last job and migration (months)	0.781	1.013	0.066
	(3.539)	(4.296)	
Observations	1,929	1,971	3,900
Household Controls			
Household Venezuela: parents or siblings [=1]	0.473	0.435	0.071
	(0.500)	(0.496)	
Household Venezuela: partner/spouse [=1]	0.505	0.554	0.021
	(0.500)	(0.497)	
Household Venezuela: others [=1]	0.115	0.101	0.284
	(0.319)	(0.301)	
Number of children	1.581	1.418	0.010
	(1.473)	(1.520)	
Years of education before migration	12.873	13.495	0.000
	(2.953)	(2.789)	
Migrated for health reasons	0.097	0.113	0.233
	(0.296)	(0.316)	
Friends/family in Colombia	0.745	0.706	0.040
	(0.436)	(0.456)	
Had smartphone [=1]	0.510	0.652	0.000
	(0.500)	(0.476)	
Owner of dwelling in Venezuela [=1]	0.868	0.868	0.971
	(0.339)	(0.339)	
Electricity in Venezuela [=1]	0.994	0.994	0.984
	(0.079)	(0.079)	
Running water in Venezuela [=1]	0.855	0.882	0.057
	(0.353)	(0.323)	
Sewage in Venezuela [=1]	0.930	0.938	0.434
	(0.256)	(0.242)	
Observations	1,122	1,110	2,232

Notes: sample is restricted to household who do not have a Colombian (by birth or naturalization) in their family or another migrant that holds a different PEP visa. Authors calculations.

Table (B.3) Descriptive statistics: treatment variables

	Irregular	PEP	Mean Diff. (p-value)
	(1)	(2)	(3)
Household members with PEP (%)	0.000	0.666	0.000
	(0.000)	(0.299)	
Registered in census [=1]	0.074	1.000	0.000
	(0.262)	(0.000)	
Time in Colombia (months)	38.684	44.034	0.000
	(9.147)	(10.371)	
Households by treatment group	1,122	1,110	2,232

Notes: sample is restricted to household who do not have a Colombian (by birth or naturalization) in their family or another migrant that holds a different PEP visa. Authors calculations

Table (B.4) Descriptive statistics: primary outcomes

	Irregular	PEP	Mean Diff. (p-value)	Observations
	(1)	(2)	(3)	(4)
Annual consumption	1.154	1.352	0.000	2,232
	(0.463)	(0.532)		
Total income	0.351	0.479	0.000	1,982
	(0.213)	(0.253)		
Employed [=1]	0.561	0.592	0.057	3,900
	(0.496)	(0.492)		
Hours worked	3.937	3.897	0.188	1,353
	(0.571)	(0.541)		
Chronic anxiety/depression [=1]	0.071	0.032	0.000	2,232
	(0.257)	(0.175)		
PCA Well-being	0.013	0.157	0.020	2,232
	(1.570)	(1.363)		

Notes: sample is restricted to household who do not have a Colombian (by birth or naturalization) in their family or another migrant that holds a different PEP visa. Authors calculations

Table (B.5)   Descriptive statistics: secondary outcomes

	Irregular	PEP	Mean Diff. (p-value)	Observations
	(1)	(2)	(3)	(4)
Reservation wage	0.564	0.616	0.000	750
	(0.136)	(0.130)		
Wants change employment [=1]	0.675	0.553	0.000	2,249
	(0.469)	(0.497)		
Overqualified for work [=1]	0.439	0.554	0.000	2,249
	(0.496)	(0.497)		
Type worker: self-employed	0.429	0.307	0.000	2,230
	(0.495)	(0.461)		
Type independent: permanent	0.723	0.581	0.000	850
	(0.448)	(0.494)		
Works GIG econ [=1]	0.026	0.060	0.000	2,249
	(0.159)	(0.238)		
HH head had symptoms [=1]	0.178	0.210	0.059	2,232
	(0.383)	(0.407)		
Head with symptoms got healthcare [=1]	0.150	0.210	0.106	433
	(0.358)	(0.408)		
No healthacare for fear deportation [=1]	0.220	0.129	0.004	582
	(0.415)	(0.336)		
Housing eviction [=1]	0.326	0.206	0.000	2,230
	(0.469)	(0.405)		
Sale of assets [=1]	0.460	0.359	0.000	2,231
	(0.499)	(0.480)		
Received help cash/kind [=1]	0.446	0.379	0.001	2,232
	(0.497)	(0.485)		
Feels part of colombian society [=1]	0.650	0.776	0.000	2,229
	(0.477)	(0.417)		
Feels part of neighbourhood [=1]	0.642	0.725	0.000	2,231
	(0.480)	(0.447)		
Colombian friends [=1]	0.349	0.443	0.000	2,232
	(0.477)	(0.497)		
Ever felt discriminated [=1]	0.505	0.520	0.480	2,229
	(0.500)	(0.500)		
Trusts colombian government [=1]	0.560	0.639	0.000	2,168
	(0.497)	(0.481)		
Access to healthcare [=1]	0.736	0.802	0.001	1,669
	(0.441)	(0.399)		
Children on immunization schedule [=1]	0.825	0.820	0.810	1,702
	(0.381)	(0.384)		
Skipped meal last month [=1]	0.391	0.264	0.000	2,230
	(0.488)	(0.441)		
Skipped meal before Covid-19 [=1]	0.252	0.171	0.000	2,229
	(0.435)	(0.376)		

Notes: sample is restricted to household who do not have a Colombian (by birth or naturalization) in their family or another migrant that holds a different PEP visa. Authors calculations

Table (B.6)   Descriptive statistics: mechanical outcomes

	Irregular	PEP	Mean Diff. (p-value)	Observations
	(1)	(2)	(3)	(4)
Formal job	0.001	0.125	0.000	1,652
	(0.035)	(0.331)		
In SISBEN	0.021	0.507	0.000	2,220
	(0.145)	(0.500)		
Subsidized Healthcare	0.014	0.305	0.000	2,205
	(0.119)	(0.461)		
Financial products	0.032	0.252	0.000	2,228
	(0.176)	(0.434)		
Transfers from Government	0.063	0.147	0.000	2,230
	(0.242)	(0.354)		

Notes: sample is restricted to household who do not have a Colombian (by birth or naturalization) in their family or another migrant that holds a different PEP visa. Authors calculations