COVID 19 EFFECT ON VENEZUELAN MIGRANTS' INCOME: THE PERUVIAN CASE RESEARCH STUDY

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ABSTRACT
This paper shed light on analyzing the effect of the Pandemic on Venezuelan Migrants’ Income in Peru. The Covid 19 Pandemic (Coronavirus Pandemic) enforced governments to apply the “Hammer Blow” which produced recession and consequently unemployment. Governments offset the latter effect by applying some subsidies to the Poor. The subsidy was not delivered to Venezuelan Immigrants in Peru. Therefore, our study attempts to explore the effect of the Coronavirus Pandemic on the Income of Venezuelan Immigrants. The study controls for gender and discrimination. Since 2017, the economic and political situation in Venezuela triggered migration beyond their frontiers. Peru is the second country with the high migration of Venezuelans, the first is Colombia which is the neighborhood. The migration reduced the labor force in the country that receives the population but in some cases, the delinquency rates increased after the wave of Venezuelans relocated to a particular country.
We consider the survey: “Encuesta Nacional de la Población Venezolana en Peru” (ENPOVE) to perform the study which was conducted during the peak of migration.

Keywords: ENPOVE, Gender inequality, Venezuelan migration in Peru, COVID 19.

INTRODUCTION
The COVID-19 Pandemic or Coronavirus Pandemic affected the health of the population worldwide. Peru was not alien to the latter phenomenon. For example, As of September 2022, the number of cases hit 4 million people and the deaths achieve 200,000 people (Portal Digital del Gobierno Peruano 2022). The Peruvian economy was also negatively affected. The Peruvian economy was one of the most affected by the “Lockdown”. The economy and unemployment drop almost one-third during the second quarter of 2020 (Central Bank of Peru, 2020).
The policies to lock down the economy performed to avoid an increase in the number of Coronavirus cases produced some heterogeneous economic and health results. Loayza (2020) shows Emerging markets are doing worse than developed countries. The lack of infrastructure, various levels of informality, and capability to cope Pandemic between emerging and developed countries was the key to explaining different health and economic outcome during the pandemic.
The drop in unemployment and the increase in informality were significant during the economic lockdown in Peru. The latter situation may affect Immigrants and Locals. However, the negative
consequence on Immigrants can be deepened since the former group of the population did not receive a subsidy to offset their drop in income (see Emergency Decrees No. 027-2020 and No. 033-2020). Subsidies were granted to the Independent, Rural population, retired, and vulnerable Peruvian population that may be at risk. The subsidy was relatively low in comparison to some countries in the region. It only considered 200 dollars for 6 months, which does not cover the basic basket of consumption of the poor. The Venezuelan migrants in Peru did not receive any financial support to compensate for their drop in income. Peru is the second country in Latin America that holds Venezuelan migrants. According to the Superintendencia de Migraciones, the number of Venezuelan migrants quadruplicated from 2016-2018 and got steady during the Pandemic. ENPOVE survey considers questions to Venezuelan Immigrants in Peru for 2018 and 2022. In 2018, there is a peak and some restrictions triggered the entry of Venezuelans. Restrictions like Passport and Visa were requested to tackle the flow of migrants. Before\(^1\) the Pandemic Venezuelan migrants’ jobs are focused in the areas of provision and business sectors (78.2 percent), with significant duties as cooks and assistant cooks, waiting staff, cleaners, domestic workers, and retail sellers as the most mutual professions amongst. If we consider education levels, a crucial gap exist amongst the expertise of mention migrants as well as their professions (World Bank, 2019). Most Venezuelans are overprepared for their jobs. The main characteristic of Venezuelan jobs is focused on Customer Service since they have better social skills. Most of the Venezuelan migrants compete with Peruvians with lower educational skills. The latter situation is called “skill downgrading” by the latter authors.

In 2022, most Venezuelan migrants helped the health sector to fight COVID-19 in Peru (see Embassy of Peru news, 2020). They were mainly nurses, health technicians, and physicians who were recruited in Public Peruvian Hospital’s Intensive Care Unit (ICI). The latter situation is a contribution to the Peruvian country that cannot be captured in ENPOVE 2022.\(^2\) Our study attempts to explore the main economic consequences on the income of Venezuelan migrants in Peru after the Coronavirus Pandemic controlling for gender and discrimination effects. The next section will explore Income inequalities in the region focusing attention on Peru.

\[\text{Venezuelan Migration and Income Inequalities in Peru}\]

Peru is considered a country with a relatively stable economy and one of the strongest currencies compared to others in the region. Peru has received more than 1.2 million Venezuelan migrants, which makes it the 2\(^{nd}\) South American nation with the biggest flow of migrants, the first being Colombia with 2.4 million. It is important to note that since 2019, the number of migrants has been reduced due to a set of changes in Venezuelan politics and economy (Del Aguila Tuesta et al., 2021).

According to the national migration superintendence of Peru, by June 2021, 782,000 Venezuelans were reported in the country and around 519,000 went to border countries such as Chile or Bolivia, and another group returned to their country of origin. Only 50% of Venezuelans who remain in the country have a temporary residence permit (PTP) (Del Aguila

\(^1\) See the Survey for 2018

\(^2\) It is a contribution that can not be measured economically. Some Venezuelan die to help Peruvians combat COVID 19. The Venezuelan volunteers were set in the first row in the ICI units.
The political and economic crisis in Venezuela has caused a rapid deterioration of the living conditions of its inhabitants. These conditions have forced a massive migration of Venezuelans to different countries of the world (Muñoz-Pogossian & Tufró, 2020). Data from some international agencies and institutions show that there are around 6.5 million Venezuelans who have migrated and entered South American countries mainly (World Bank, 2019; Del Aguila Tuesta et al., 2021). This migration has generated various changes, questions, and challenges that the academy must address to provide decision-making tools (Borjas, 1995; Card, 2001; Felbermayr et al., 2010; Dustmann et al., 2013).

Venezuelan migration, in broad terms, has been investigated from perspectives that have shown its results in social terms such as the impact on job insecurity and discrimination Bustillos, Contreras Painemal, Albornoz, Flavio and Bustillos, (2018), insecurity and crimes (Knight & Tribin, 2020), among others. In terms of the possible economic impact, Venezuelan migration has been studied regarding its impacts on the labor market (Bonilla-Mejía et al., 2020; Rodrigues & Shrestha, 2022), in local remunerations (Delgado-Prieto, 2021), and others with a more complex analysis that present their impact on the country's productivity (Acemoglu, 1998; Alesina & Ferrara, 2005; Ager & Brückner, 2013; Alesina et al., 2016; Barbieri et al., 2020; Olga Maria et al., 2021).

### Income Inequality

In terms of inequality, there is a lot of literature that focuses attention on Latin America. For instance, Campos-Vazquez and Lara (2021) In Mexico, we find that a 10% increase in men's relative labor supply increases the wage gap between women and men by about 1.1 percentage points. However, the results suggest greater elasticity of substitution between men and women than assumed in previous studies.

In China, authors like Xing, Yuan and Zhang, (2022) found We found that the labor market is denser and more diverse in big cities, easing the problem of collocation for married couples. Also for the same country Magnani and Zhu, (2012), found that on average, male migrants earn 30.2% more hourly wages than female migrants. The gender wage gap is not uniform across migrants' wage distribution, and wage differentials are found to be much higher at the top end than at the bottom and the middle of the wage distribution (Wu et al., 2021). For France, Edo and Toubal, (2017) found that changes in the supply of female labor widen the gender wage gap when males and females are defective alternatives in manufacturing.

From the immigration perspective, Hayfron, (2002) Exploring the possibility that being both 'woman' and 'migrant' imposes an income disadvantage on Norwegian female immigrants. Gindling (2009) examines the impact of resettlement from non-industrial Nicaragua on the

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3 Also Wu, Y., Pieters, J., & Heerink, N. (2021) found similar results for the same country.
We find little evidence to support the hypothesis that Nicaraguan migration to Costa Rica was an important factor contributing to falling earnings, increased inequality, or stagnating poverty in Costa Rica. In Europe, a migration study made by Adsera and Chiswick, (2007) found that approximately 40% of foreign-born children had a significant negative impact on personal income compared to destination-born children. These differences depend not only on gender, but also on origin and destination. Immigrant incomes catch up with native-born incomes after about 18 years in destination. While education is more important to women's income, language proficiency is relatively more important for men. Also, Nicodemo and Ramos (2012) indicated that, on average, immigrant women earn less than native women in the Spanish labor market. Piazzalunga (2015) investigates the gender and ethnic wage differentials for female migrants in Italy by applying the Oaxaca–Blinder decomposition, with and without Heckman correction, to account for self-selection in the labor market. They found a gender wage gap of nearly 15 percent, more than 60 percent of which is unexplained by observable differences (Conover et al., 2021; Nieto, 2021).

4 On the other side, Salas (2015) found for a Colombian dataset that there is a gap in gender within Colombia (Ortega & Peri, 2014; Otero-Cortés et al., 2022). The latter result is deepened when the male comes from the city and the female is an immigrant. Our study will focus attention on the gender and income inequalities of Venezuelan Migrants in Peru over two periods of time: before and after the Coronavirus Pandemic.

We hypothesize that there is gender income inequality during the period before and after COVID Pandemic. We will control by discrimination effect on the latter disparities. The next section will describe the data and variables considered to test the hypothesis.

**MATERIALS AND METHODS**

We use the “Encuesta Dirigida a la Población Venezolana (ENPOVE)”. The survey is conducted in 2018 and 2022. For 2018 the survey considers 3,611 houses (3,680 houses for 2022). However, the respondents in 2018 are not the same for 2022. The survey covers Tumbes, La Libertad, Lima-Callao, Arequipa, and Cusco, which are the cities that consider 85% of the Venezuelan immigrant population. For 2022, the regions covered were the same as in 2018. The survey attempts to deliver reliable data on the conditions of health, employment, and housing in which they live, as well as some socioeconomic characteristics. The survey is relevant to shape decisions and capture the needs of the Venezuelan population that has arrived in Peru. The survey for 2018 and 2022 considers gender, age, socioeconomic and ethnic self-perception issues. Both survey also studies main aspects of the labor market for the migrants as well as perceptions of violence and discrimination. Covid questions and Vaccine coverage is under consideration in the 2022 Survey.

In 2019 and 2020, the situation for Venezuelans in Peru changed compared to the reality of 2018. This is in part due to changes in immigration regulations and global phenomena.

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4 Conover, E., Khamis, M., & Pearlman, S. (2021) and Nieto (2021) found similar results in the Latin American region.

5 If they were the same, we could have applied difference and difference models.
Therefore, a second study is needed to provide up-to-date information on Peru's Venezuelan population and support public policy decisions based on solid and reliable data. The Instituto Nacional de Estadística e Informática (INEI) along with the support of the World Bank, the United Nations Refugee Agency (UNHCR), the International Organization for Migration (IOM), the United Nations Population Fund (UNFPA), and the United Nations Fund for Children (UNICEF), carried out the Surveys Addressed to the Venezuelan Population living in the country (ENPOVE).

We have gathered some variables to conduct our research. Table 1, below shows the variables collected to perform our research:

<table>
<thead>
<tr>
<th>Variables 2018</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCRIMINATION</td>
<td>0.35</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>SEX</td>
<td>1.47</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL INCOME</td>
<td>841.00</td>
<td>663.58</td>
<td>0</td>
<td>10000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables 2022</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCRIMINATION</td>
<td>0.35</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>SEX</td>
<td>1.69</td>
<td>0.45</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL INCOME</td>
<td>400.17</td>
<td>610.11</td>
<td>0</td>
<td>9500</td>
</tr>
</tbody>
</table>

Elaboration: Own
Source: ENPOVE (2018, 2022)

The next section will show the estimation method to test the hypothesis as well as the results of the inference.

RESULTS AND DISCUSSION

Since respondents are not the same for both periods of surveys, we can not study over time of the surveyed. We can test for any difference within a period of time and test our hypothesis of gender income inequality during the period before and after COVID Pandemic. We will control by discrimination effect as well.

The test used in the paper is the difference in means. The latter test provides a confidence interval for the difference between the two means, indicating the range of values over which the difference between the means of the two populations may exist. This test is commonly used by medical researchers wishing to estimate the difference in mean responses of patients who received two different treatments. The confidence interval for the difference between the two means contains all the values of ($\mu_1 - \mu_2$) (the difference between the two sample means) which would not be rejected in the two-sided hypothesis test of $H_0: \mu_1=\mu_2$, against the alternative hypothesis $H_a: \mu_1 \neq \mu_2$. 
The size of our two samples (one for 2018 and the other for 2022) permits us to infer and consider a normal distribution for the inference estimation. The statistical test is Z and we will consider the rejection of the null hypothesis (Ho) at 95% of confidence. The Z is constructed as follows:

\[
Z = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{\sqrt{s_1^2/n_1 + s_2^2/n_2}}
\]  

(1)

Where \(x_1\) and \(x_2\) are sample means. The symbols: \(\mu_1\) and \(\mu_2\) are population mean. The variables \(\sigma_1\) and \(\sigma_2\) are standard deviations and \(n_1\) and \(n_2\) are sample sizes.

Before estimation, we must clean any outliers. The sample in 2018, contains some outlier that needs to be removed. The Figure 1 below show the data before cleaning.

For 2022, we have applied the same procedure and then we can proceed with the estimation. The following Table 2 show the results for the test of difference in means, controlling for gender and discrimination perception across the two periods under.

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>9,577</td>
<td>691.4874</td>
<td>5.585883</td>
<td>546.6465</td>
<td>680.5379 - 702.4369</td>
</tr>
<tr>
<td>2022</td>
<td>12,085</td>
<td>291.4203</td>
<td>3.962894</td>
<td>283.6524</td>
<td>283.6524 - 299.1882</td>
</tr>
<tr>
<td>combined</td>
<td>21,662</td>
<td>468.2942</td>
<td>3.578919</td>
<td>461.2793</td>
<td>475.3091</td>
</tr>
<tr>
<td>diff</td>
<td>400.0671</td>
<td>6.848841</td>
<td>386.6428</td>
<td>413.4915</td>
<td>t = 58.4138</td>
</tr>
</tbody>
</table>

Ho: diff = 0  
Welch's degrees of freedom = 18024.9
Table 2, above shows a drop in income after COVID Pandemic\(^6\) between 2018 and 2022. The difference ranges from 386 to 416 soles within a month.

Tables 3 and 4 show an assessment by Gender. For 2018, there is gender inequality as well as for 2022. Male earns more than Female and the gap deepens after the COVID-19 Pandemic. On average, the gap can hit until 70 soles more in favor of men.

### Table 3. Two-sample t-test with equal variances

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4,681</td>
<td>908.2442</td>
<td>9.952229</td>
<td>680.91</td>
<td>888.7331 – 927.7552</td>
</tr>
<tr>
<td>Female</td>
<td>4,155</td>
<td>765.2513</td>
<td>9.852834</td>
<td>635.1067</td>
<td>745.9344 – 784.5681</td>
</tr>
<tr>
<td>combined</td>
<td>8,836</td>
<td>841.0038</td>
<td>7.059366</td>
<td>663.5804</td>
<td>827.1658 – 854.8418</td>
</tr>
<tr>
<td>diff</td>
<td></td>
<td>142.9929</td>
<td>14.06256</td>
<td>115.427</td>
<td>170.5588</td>
</tr>
</tbody>
</table>

Ho: diff = 0  
Ha: diff < 0  
Ha: diff > 0

\(Pr(T < t) = 1.0000\)  
\(Pr(|T| > |t|) = 0.0000\)  
\(Pr(T > t) = 0.0000\)

We can infer from the previous result that the Pandemic has deteriorated the income, increasing the gap gender as well. This result is interesting for policymakers that look for reducing any inequality and the negative economic consequences of the latest Pandemic. As we have seen in the previous section, the Pandemic has deteriorated many economic and financial variables and we have shed light on some relationships.

### Table 4. Two-sample t-test with equal variances

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Female</td>
<td>5,088</td>
<td>286.3245</td>
<td>7.064107</td>
<td>503.8843</td>
<td>272.4758 – 300.1732</td>
</tr>
<tr>
<td>combined</td>
<td>10,020</td>
<td>400.1765</td>
<td>6.0951</td>
<td>610.1192</td>
<td>388.2289 – 412.1242</td>
</tr>
<tr>
<td>diff</td>
<td></td>
<td>231.3053</td>
<td>11.97127</td>
<td>207.8392</td>
<td>254.7714</td>
</tr>
</tbody>
</table>

\(diff = mean\ (1.Hombre) - mean\ (2.Mujer)\)  
\(t = 19.3217\)

Ho: diff = 0  
Ha: diff < 0  
Ha: diff > 0

\(Pr(T < t) = 1.0000\)  
\(Pr(|T| > |t|) = 0.0000\)  
\(Pr(T > t) = 0.0000\)

\(^6\) We can assume normality since there is a large amount of observations on each dataset. The dataset is clean for outliers and the variance are similar between groups. Variance ratio test show similar results.
Next Tables 5 and 6 test whether there is a gap between people who feel discriminated or not. The first consider the 2018 and the next 2022 surveys. The results show that the people who feel discriminated against have better income in comparison to the group that does not feel left behind. The result goes against the line of the literature on immigration discrimination. The gap between groups who feel discriminated shortens in 2022.

**Table 5. Two-sample t-test with equal variances**

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Discrim.</td>
<td>2,724</td>
<td>453.4938</td>
<td>11.73765</td>
<td>612.6109</td>
<td>430.4782  476.5094</td>
</tr>
<tr>
<td>Discriminated</td>
<td>304</td>
<td>426.5658</td>
<td>46.64179</td>
<td>813.2273</td>
<td>334.783  518.3486</td>
</tr>
<tr>
<td>combined</td>
<td>3,028</td>
<td>450.7903</td>
<td>11.54891</td>
<td>635.505</td>
<td>428.1458  473.4348</td>
</tr>
<tr>
<td>diff</td>
<td>26.92797</td>
<td>38.43201</td>
<td>-48.42753</td>
<td>102.2835</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td>0.7007</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ho: diff = 0</td>
<td></td>
<td>Ha: diff &lt; 0</td>
<td>Ha: diff != 0</td>
<td>Ha: diff &gt; 0</td>
<td></td>
</tr>
<tr>
<td>Pr(T &lt; t)</td>
<td>0.7582</td>
<td>Pr(</td>
<td>T</td>
<td>&gt;</td>
<td>t</td>
</tr>
</tbody>
</table>

**Table 6. Two-sample t test with equal variances**

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Discrim.</td>
<td>2,819</td>
<td>1070.812</td>
<td>10.41181</td>
<td>552.8075</td>
<td>1050.396  1091.227</td>
</tr>
<tr>
<td>Discriminated</td>
<td>232</td>
<td>1109.586</td>
<td>38.04787</td>
<td>579.5279</td>
<td>1034.621  1184.551</td>
</tr>
<tr>
<td>combined</td>
<td>3,051</td>
<td>1073.76</td>
<td>10.04567</td>
<td>554.8812</td>
<td>1054.063  1093.457</td>
</tr>
<tr>
<td>diff</td>
<td>-38.77457</td>
<td>37.89887</td>
<td>-113.0845</td>
<td>35.53535</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td>-1.0231</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ho: diff = 0</td>
<td></td>
<td>Ha: diff &lt; 0</td>
<td>Ha: diff != 0</td>
<td>Ha: diff &gt; 0</td>
<td></td>
</tr>
<tr>
<td>Pr(T &lt; t)</td>
<td>0.1532</td>
<td>Pr(</td>
<td>T</td>
<td>&gt;</td>
<td>t</td>
</tr>
</tbody>
</table>

**CONCLUSION**

We have concluded that the COVID 18 Pandemic deepened gender disparities. The latter relationship broadens after the worldwide recession of 2020. The late economic event deteriorated income but also inequalities as well. However, we concluded that people who perceived themselves as discriminated against did not suffer from a drop in income. Conversely, people who do not feel discriminated against gain lower salaries than the control group discriminated against. This result contrasts the literature on discrimination. The prejudice does not come from racial issues since Peru is a country with a variety of races and hybrid breeds. The feeling of being left behind comes from nationality and migration status.
Our results permit us to explore inequalities in gender before and after the event of COVID 18 Pandemic. Most of the paper focuses attention on the economic consequences of the Pandemic, missing any effect on immigrants that come from one emergent country to another.

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References


