Identificación de tipologías sociodemográficas de la fuerza laboral ocupada venezolana en Bogotá: una comparación con la fuerza laboral ocupada nacional utilizando datos de GEIH y análisis de conglomerados

David Esteban Rojas Ospina[1]

Resumen. Este artículo tiene como objetivo indagar en la estructura sociodemográfica de la fuerza laboral ocupada venezolana y sus diferencias en comparación con la fuerza laboral ocupada nacional en la ciudad de Bogotá, Colombia. Para lograr este propósito, esta investigación se basa en datos del año 2021 de la Gran Encuesta Integrada de Hogares (GEIH), una encuesta sociodemográfica mensual que captura información relacionada con las principales características de la población estudiada. En este sentido, se realizaron comparaciones en términos de niveles educativos, ingresos, estatus ocupacional, estructura familiar, género y grupos de edad para determinar diferencias y patrones comunes. Finalmente, se propuso una estrategia de análisis de clúster jerárquico para identificar posibles tipologías sociodemográficas de la fuerza laboral venezolana.
Palabras clave: migración; estructura sociodemográfica; tipologías de hogares; integración; América Latina; Bogotá.

[en] Identifying Sociodemographic Typologies of Venezuelan Occupied Labour Force in Bogotá: A Comparison with National Occupied Labour Force Using GEIH Data and Hierarchical Cluster Analysis

Abstract. This paper aims to inquire for the sociodemographic structure of the Venezuelan occupied labour force and its differences in comparison to the national occupied labour force in the city of Bogotá, Colombia. To achieve this purpose, this research relies on data for the year 2021 from the Integrated Great Survey of Households (Gran Encuesta Integrada de Hogares - GEIH), a monthly socio demographic survey GEIH that captures information related to the main characteristics of the studied population. In this sense, comparisons in terms of educational levels, income, occupational status, family structure, gender and age groups were done in order to determine differences and common patterns. Finally, a hierarchical cluster analysis strategy was proposed to identify possible sociodemographic typologies of the Venezuelan labour force.
Keywords: migration; sociodemographic structure; household typologies; integration; Latin America; Bogotá

Sumario: Introduction. Historical trends of immigration in Latin America and the Venezuelan refugee crisis in Colombia and Argentina. Demographic trends of the Venezuelan refugee crisis.

Introduction

Although Latin America is nowadays mostly associated with considerable emigration trends, mostly to the United States and Western Europe, and most of the research about the migration dynamics of the continent focuses on these trends, Latin American sociodemographic and economic structure has been shaped by different processes of immigration: The Spanish and Portuguese conquest and the African slave trade; the massive influx of immigration in the late XIX and early XIX centuries of European, Arab and Asian populations; the contemporary dynamics of intra

---
[1] Social Sciences University of Ankara
E-mail: davidesteban.rojasospina@student.asbu.edu.tr

continental immigration and the arrival of skilled labour and digital nomads to the region in synchrony with the globalization of labour markets are all important phenomenon to comprehend the impact of immigration in the region.

Particularly, the Venezuelan refugee crisis has created unprecedent challenges in Latin America in terms of institutional design and public policies; these challenges also demand the attention of the scientific community to understand problematics associated with cultural and social integration, labour informality and urban segregation among others. Therefore, it is important to foster research about the immigration phenomenon in the region and to inquire for both the impact that immigration has in contemporary Latin American societies as well to provide insights about the social characteristics of the immigrant population and the structure of their households and communities in the context of the current Venezuelan refugee crisis.

In this sense, this paper aims to inquire for the sociodemographic structure of the Venezuelan workforce and its differences in comparison to the national workforce in the city of Bogotá, Colombia using data for the year 2021 from the Integrated Great Survey of Households (Gran Encuesta Integrada de Hogares - GEIH).

The selection of Bogotá was done due to its importance in the context of the ongoing Venezuelan refugee crisis. The border between Venezuela and Colombia is the longest border of both countries with a length of approximately 2.300 kilometres, and migration has been a common trend trough the history of both republics, although prior to the Venezuelan crisis, immigration from Colombia to Venezuela was more common. Nowadays, Colombia is the country with the biggest number of Venezuelan refugees and is the second country with more refugees in the world after Türkiye (UNHCR, 2021). In particular, Bogotá concentrates around 35 per cent of the total Venezuelan diaspora in Colombia and is the city in the county with the highest proportion of Venezuelan population (DANE, 2021).

For this research, a strategy based on Hierarchical Cluster Analysis was chosen (HCA) to identify latent sociodemographic typologies of the Venezuelan workforce using variables related to age group, income, educational level, family structure, gender, and occupational status. Statistical information related to the educational levels, income occupational status, family structure, gender, and age groups is also presented. Data from 2021 was chosen to conduct this research since is the last year for which it exists consolidated data for the whole year, due to the fact that this research was done during the year 2022.

Historical trends of immigration in Latin America and the Venezuelan refugee crisis in Colombia and Argentina

Transoceanic immigration to Latin America and demographic changes

The history of Latin America is deeply linked to immigration: the colonization of the Americas produced a massive influx of Europeans and African slave workforce that shaped the current demographic structure of the continent alongside with the demographical collapse in the XVI and XVII centuries of the indigenous population caused by wars between indigenous empires, the violent establishment of colonial domain and the irruption of epidemics mainly caused by the introduction of exogenous pathologies by Europeans (Abad et al., 2012).

The process of mixing between the indigenous population and the Spanish and Portuguese colonizers, and later African slaves, known in Spanish as *mestizaje* produced a new social and institutional order and a particular system of social stratification reflected on a likewise castes system, in which racial origin remained as a strong social identifier in colonial life (Giraudo, 2018). Although the colonization of Latin America was characterized by high levels of interethnic exchange, widespread intermarriage, a substantial and relatively fast expansion of Portuguese and Spanish Languages and the establishment of Catholicism as the dominant religion, race-based categories in which citizens of Spanish and Portuguese origin had access to a broader number of rights, remained as a pivotal element of colonial hierarchies.

The emancipation of the Spanish and Portuguese colonies was followed by the building of the republican projects inspired by French liberalism and leaded by the political and economic elites which were mainly formed by the descendants of Spanish and Portuguese inhabitants of the Latin America, known in Spanish as *"criollos"*, who gain a major role in the administration of the colonies and in ecclesiastical life thanks to the Bourbonic reforms and the emergence of new power dynamics in Latin American territories independent from the imperial Iberian authority. Therefore, the process of state nation building of the new Latin American republics was heavily linked with the reinforcement of the *criollo* identity as well as the preservation of colonial hierarchies in terms of political authority, justice administration and economic influence. Overall access to power positions was nominally restricted to the *criollo* elite and a sense of differentiation and superiority in comparison with the inhabitants of indigenous origin was both preserved and fostered (Esencial & Rodríguez, 2019).

Immigration played a major role in shaping the demographic structure of the continent after the establishment of the Latin American republics (Alonso, 2007): contrary to the current situation of the continent characterized by high levels of emigration to the United States and Western Europe, throughout the second half of the XIX century and the first half of the XX century, Latin America was a massive receptor of immigrants, mainly of European origin and on lower scales citizens of Christian Arab origin that where living in territories that at that time belonged to the Ottoman Empire and immigrant communities of Japanese and Chinese citizens.

Several explanations can be given to the massive immigration of this period of Latin American history. The liberal projects of the new-born republics were built around the idea of private property and the fostering of international commerce which combined with cheaper land prices and lower wages in comparison with Europe, helped to attract European capital and entrepreneurs into Latin American economies mainly due to the immense availability of natural resources and optimal land for agricultural exploitation, the scarcity of workforce in some of the Latin American economies also played an important role in the influx of immigration to the continent (Alonso, 2007), these macro-economic conditions also constituted a motivation for communities of Asian and Arabic origin to immigrate to the New World, although at lower rates in comparison with the European population and with a relatively different geographical distribution.

The *whitened* of Latin American societies was seen by the political elites as a requisite for progress, since their conceptions of social and economic development were deeply influenced by social Darwinism (Gobat, 2013); therefore, indigenous, and African heritage was understood as a symptom of backwardness and as an obstacle for economic and social progress. The analogy between European origin and progress was extended also to the immigration policies developed by the Latin American political elites, in which immigration of citizens of Slavic, Arabic, African and Asian origin was conceived as undesirable (Goebel, 2016).

In this context, European immigration was actively promoted and preferred by the political elites of the continent as part of the project of building a national identity in synchrony with their liberal ideals of progress. Latin American states engaged in campaigns of promotion of their respective countries as a promising destination for Central and Western Europeans (Gómez, 2009), therefore public initiatives to attract white European immigration were developed and Latin American countries were promoted in European newspapers as good destinies for Europeans who decided to emigrate from their societies.

Although these general trends were common among all Latin American societies in the late XIX and early XX centuries, every country had its own immigration trends and characteristics. In the case of Colombia, the country was not a major pole of attraction for European immigrants in the same scale as Brazil, Argentina Uruguay, or Chile, although significant communities of German, Belgium, Spanish and Italian immigrants settled in the territories of Bogotá, Santander, Antioquia, and the Colombian coffee growing axis, and had a big influence in the economic and industrial development of the country (Ospina et al., 2016).

Additionally, the north of Colombia which constitutes the Caribbean region of the country, was subject of important wages of immigration of predominantly Cristian but also small groups of suni Muslim populations from Syria, Palestine, Jordan, and Lebanon which at that time were territories of the Ottoman Empire (Wabgou et al., 2012) The immigration from these territories transformed the Caribbean demographic and socioeconomic structure and enriched Caribbean culture; furthermore, some of descendants of these communities have a predominant role in nowadays Colombia as members of the political and economic elites of the Caribbean region.

Demographic trends of the Venezuelan refugee crisis

It is a consensus among academics, the international and regional community, non-profit organizations and the civil society that the contemporary exodus of Venezuelans from their country can be defined as a refugee crisis: the position of the Inter-American Commission on Human Rights (IACHR) regarding this issue states that due to the systematic violations of human rights by the Venezuelan government and the rampant proliferation of violence and crime, the structural economic crisis which has caused general scarcity, stagnation and hyperinflation alongside with the continuous deterioration of social and economic indicators, the concentration of power in the president figure, corruption scandals, the lack of guarantees for political opposition and the violation of the democratic principal of separation of powers, has forced millions of Venezuelans to emigrate from their country not only to improve their economic conditions but as a matter of survival, to preserve the integrity of themselves and their families (IACHR, 2018).

Since the scope of this research is focused on the sociodemographic characteristics of the Venezuelan occupied labour force in Bogotá, Colombia, it was decided to concentrate only on Latin American countries. This is because a large number of Venezuelan migrants have moved to countries within the region, including Colombia, which has become one of the main destinations for Venezuelans seeking better opportunities. In fact, according to the International Organization for Migration (IOM), Colombia has received the second-highest number of Venezuelan migrants in the world, with over 1.7 million registered by the end of 2020. Therefore, by limiting the analysis to Latin American countries, we can gain a more comprehensive understanding of the social and economic conditions of Venezuelan migrants in the region, and specifically in Bogotá.

According to the UN Refugee agency (UNHCR), approximately 7 million Venezuelans have been displaced from their country since the onset of the ongoing crisis, representing approximately 25% of the country's estimated population of 29 million (UNHCR, 2021). Of the 7 million displaced, only 3% fall under the UNHCR's refugee mandate, while 14% are asylum seekers, 63% require international protection, and 20% present other concerns to the UNHCR. Furthermore, the vast majority of Venezuelans who have fled the country, approximately 75%, have emigrated to other Latin American countries, the following chart shows.

Graphic 1: Venezuelan displaced population in selected Latin American countries in (2021)
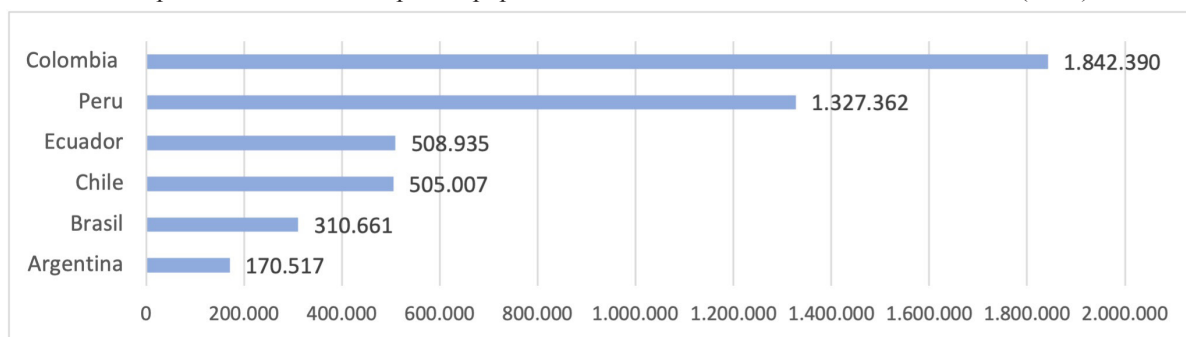
Source: elaborated by author with data from UNHCR (2021). Displaced population includes refugees, asylum seekers, people in need of international protection and others of concern.

The origin of the current phenomenon of displacement in Venezuela can be traced to the late nineties, when high skilled professionals, white collar workers and investors fled the country due to the socioeconomic and political transformations fostered by the newly elected government of Hugo Chavez. The 2002 coup d'état attempt, the general strike of 2002 – 2003 in which around 18.000 workers of the state-owned PDVSA (Petroleum of Venezuela, Inc) oil company were fired, and the re-election of Chávez in 2006 continued to create incentives for citizens with high levels of cultural capital to leave the country (Briceño-León, 2006). This initial emigration from Venezuela was not massive and was mostly associated with movements of capital and investment and highly skilled individuals who worked in the Venezuelan oil sector, as well as members of the upper classes who had the possibility to emigrate to the US or to Europe due to double citizenship or their own favourable economic conditions.

The beginning of the 2010's saw a general deterioration of the socioeconomic conditions of the population as well as the emergence of a severe political crisis. The ending of the 2000's commodities boom affected the Venezuelan economy harshly due to its high dependency on oil to sustain social welfare programs alongside with a systematic deterioration of productivity and efficiency of the oil industry but overall, of the whole Venezuelan economy. The hardening of controls on the exchange rate regime which created a crisis of liquidity for business, the growing scarcity of basic products and the loss of purchasing power due to the rapid increase of inflation, aggravated the already difficult life conditions for Venezuelans. Chávez died in 2013 and his vice president Nicolás Maduro, who continued to be aligned with the principles of the Chavez government took power, followed by massive demonstrations all over the country in 2014 due to the ongoing political and economic crisis.

This period was characterized by the substantial increase in the emigration of the working age population, with a slight predominance of the masculine workforce, which meant changes in the sociodemographic composition of the emigrant population: formally educated middle class citizens, clerks, professionals and small and medium sized entrepreneurs left the country escaping from the Venezuelan social unrest, relying primarily on their preestablished social capital networks to settled mainly in other Latin American countries (Alekséenko & Pyatakov, 2019). The human capital flight had a significant impact in the health and education sectors and also worsened the already stagnated Venezuelan formal economy. It is estimated that between 1 and 1.5 million Venezuelans left their country between 1998 and 2014.

The period of 2015 -2017 is widely considered of what is known as the Venezuelan exodus. Between 2015 and 2017, the emigration of Venezuelans increased by around 130 per cent worldwide, and in particular for the case of Venezuelans heading to Latin American countries the emigration rate increased by 900 per cent approximately. In net terms during these two years, approximately 1 million Venezuelans fled the country, compared to the 1.5 million migrants that left the country between 1998 and 2014, which means that the percentage of emigrants between 2015 and 2015 is equivalent to around 67 per cent to the total emigration of the previous 16 years. This situation was also aggravated by the rupture of diplomatic relations of several Latin American states with the Venezuelan government, the closing of the boarders with Colombia and Brazil decided by Maduro's administration and the deportations of around 20.000 Colombians who lived in Venezuela.

Graphic 2: Displaced Population and Net Migration Rate in Venezuela and Latin America 2001-2021
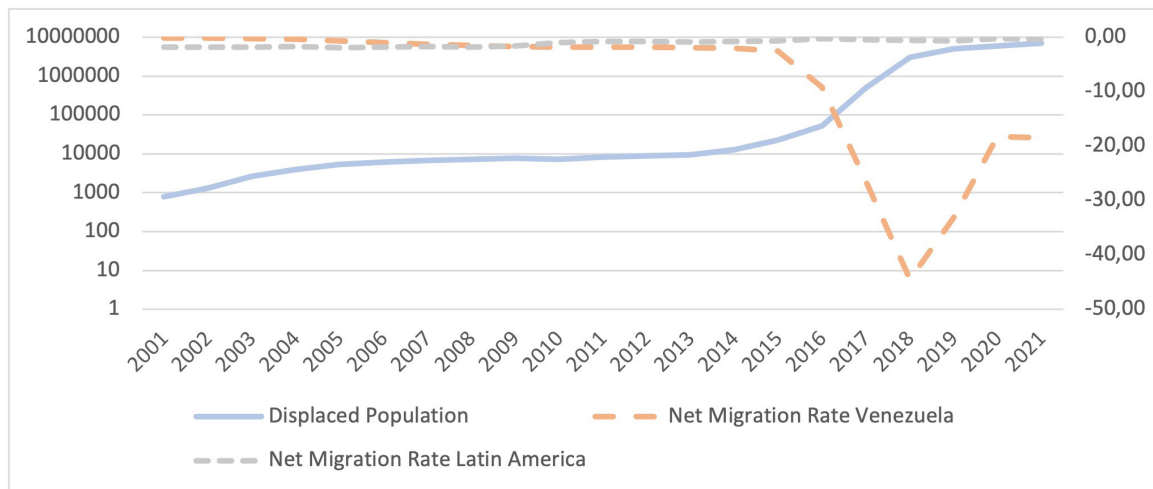
Source: elaborated by author with data from CEPALSTAT (2021) and UNHCR (2021), Displaced Population data is expressed in a base 10 logarithmic scale and Net Migration Rate is expressed per 1.000 habitants

From this this period and on, the emigration from Venezuela started to show socio demographical differences in terms of the previous emigration wages: a predominantly low skilled young population, with relatively low educational levels who belong to the lowest classes of Venezuelan society, fled the country massively in order to survive alongside with very vulnerable Venezuelan citizens with urgent humanitarian needs, such as lactating and pregnant women, chronically ill patients, unaccompanied minors, single-parent families, and elderly people.

Furthermore, during this period, thousands of Venezuelans citizens started leaving their county by foot, entering Colombia or Brazil irregularly trough clandestine border routes either to settle down in these countries or to continue mostly to destinies like Argentina, Chile, Perú and Ecuador but also up to the north in direction to Mexico and the United States. These migrants are particularly vulnerable since they lack resources to guarantee themselves their proper mobility alternatives mobility, food supply, health care and medical attention and shelter. Furthermore, the precariousness of their migration situation makes them extremely vulnerable to human and sex trafficking, sexual violence, labour exploitation and recruitment by illegal groups among others.

The trends of expulsion of Venezuelan population from their country has left a longstanding damage in the socio-economic structure since a significant proportion of the highly skilled and well-educated Venezuelan population escaped from the effects of the crisis, which also had severe impacts in the demographic matrix of the country since most of the Venezuelan diaspora is composed by population in working age. Although with the COVID 19 pandemic, the rhythm of emigration decreased because of the mobility restrictions all over the world, till this day, Venezuelans continue to leave their country on a daily basis, and the remittance that migrants send to their relatives are a vital part of current Venezuelan daily life. The Venezuelan refugee crisis is far from been over and its impacts in the demographic structure of their country and the receptor countries are an important challenge to be addressed by governments and researchers in Latin America.

Colombia currently hosts the largest number of Venezuelan refugees worldwide, estimated at 1.8 to 2 million individuals permanently residing in the country. This is a significant shift from the past, when it was more common for Colombians to migrate to Venezuela. Many Colombians saw Venezuela as an opportunity to settle in a more politically stable context with better economic conditions, higher purchasing power, and as an escape from the impacts of the Colombian armed conflict and economic crises experienced during the 1980s and 1990s (de Flores, 2004).

Venezuelan migration in Colombia follows similar trends to the regional ones in the sense that the majority of the Venezuelan population living in the country arrived after the begging of the crisis with only around 5 per cent of the Venezuelan migrants arriving to Colombia prior to the systematic deterioration of the living conditions in Venezuela and the other 95 per cent arriving during the period of the crisis (Díaz Jiménez, 2021).Venezuelan immigration is concentrated in the regions of Bogotá with 21 per cent of the total, Antioquia with around 11 per cent, Norte de Santander with 9 per cent and Atlántico with 8 per cent. These areas of Colombia are the most important ones in terms of its economic dynamic, except for the case of Norte de Santander which remains as a major attraction point due to the fact that is located in the boarder with Venezuela (DANE, 2021).

The Venezuelan working population is slightly masculinized and shows lower educational levels than their compatriots settled in countries like Argentina, Chile, or Brazil. according to official data around 8 per cent of the Venezuelans living in Colombia do not have any educational level, 43 per cent have only basic education, 27 have secondary education and around 20 per cent reported to have higher education. In terms of informality by contribution to the general system of social security in pensions, identifies that around 90 per cent of the Venezuelan work force in Colombia is informal, and its occupied predominantly as independent workers or in small businesses (DANE, 2021).

Methodology

Samples and sources of information

This research relies on the data gathered for the year 2021 through the application of the Great Integrated Survey of Households (Gran Encuesta Integrada de Hogares - GEIH) using the sample recollected by the Administrative Department of National Statistics of Colombia (DANE) for the city of Bogotá. This survey is a monthly statistical operation designed to capture the most relevant sociodemographic and socioeconomic information alongside with information related to labour market indicators, and due to the design of the questionnaire it is possible to discriminate calculations by immigrant population.

Overall, the final data bases used for this research are subsets of the national aggregated databases for the year 2021, one of the subsets corresponds to the data of the workforce of Bogotá, and the other one is a subset that only contains data for the Venezuelan migrant workforce, microdata is available in DANE's website. This survey is design based on a stratified probabilistic multistage sampling and is calibrated accordingly to census data providing the necessary expansion factors to generate adequate statistical indicators and projections.

Table 1: Sample and expanded populations for Colombian and Venezuelan workers in Bogotá (2021)

Sample and expanded populations		
Number of workers	**Sample data**	**Expanded data**
Colombia	11,396	**3,595,916**
Other countries	47	**13,664**
Venezuela	859	**251,089**

Source: elaborated by author with data from GEIH (2021)

Furthermore, the subset of Venezuelan workers to which the hierarchical cluster analysis was applied was normalized in order to address potential biases and differences in scaling. Normalization is a technique used to scale the range of values of a given feature or set of features in order to ensure that they are on a similar scale. This can be important for many data analysis techniques, including hierarchical clustering. The first step in the normalization process is to calculate the covariance matrix of the data. The covariance matrix is a square matrix that describes the relationships between the different variables in the data. Specifically, the covariance between two variables measures how much they vary together. A positive covariance means that the variables tend to increase or decrease together, while a negative covariance means that they tend to move in opposite directions.

After calculating the covariance matrix, the next step is to apply a linear transformation to the data in order to obtain a new matrix of data with unit variance and zero mean. This transformation is calculated using the eigenvalues and eigenvectors of the covariance matrix. The resulting transformed matrix is sometimes referred to as a "whitened" or "decorrelated" matrix. The reason why normalization is important for hierarchical clustering is that it helps to ensure that all of the variables are on a similar scale. This can help to avoid biases in the clustering results and ensure that all of the variables are given equal weight in the analysis. Additionally, normalizing the data can help to reduce the impact of outliers or extreme values that may skew the clustering results.

Although census and survey microdata provided by official institutions has high standards of quality and statistical reliability, it is important to point out the limitations of the scope of these instruments such as oversimplification and a higher rejection rate among immigrant households, specially from those composed by irregular immigrants (Logan, 2018). Additionally, since the current research is relying on household surveys there is no information available for the population who does not have a permanent location to live in or who are homeless, which may create situations of underrepresentation, especially in the most vulnerable and marginalized segments of the immigrant population in these situations, as well as sub-estimations of the levels of income may emerge both for the national and Venezuelan workers.

However, to rely on continuous surveys has several advantages that other sources of information do not offer, mainly, the variables of these instruments allow to capture relevant sociodemographic and socioeconomic information which constitutes a significant advantage in comparison with administrative registers that are mainly dedicated to counting and registration purposes. Furthermore, although household survey data may find difficulties associated with attrition, especially in context of marginalized social groups that may be reflected in higher rejection rates or inconsistencies in the data collected, overall longitudinal continuous surveys are statistically stable (Alderman et al., 2001).

Data Analysis methods

Theoretically speaking, systematic methods of classification of social groups have been a major interest in the development of sociology since its origin, for example in the formulation of social class schemes and stratification systems or the identification of socio demographic structures (Blackstone, 2018); therefore, cluster analysis and in

general, several types of dimensional reduction techniques and classification approaches, have a long standing theoretical relation with sociology and are extensively used nowadays in empirical research thanks to the improvement of computational resources (Białowolski, 2015).

Cluster analysis refers to the set of techniques design for grouping elements or variables from a set of data into subsets that share similar characteristics. The identification of the most optimal classification of these subsets or clusters constitutes the task to be solved, therefore clustering analysis is based on a broad variety of algorithms that rely on different measurements to provide consistent results; therefore, the definition of a cluster is not static, and it may differ depending on the algorithm implemented and the theoretical framework of the research (Fonesca, 2013). Important characteristics that can differentiate types of cluster analysis are the measure of distance selected in a particular algorithm and theoretical assumptions of the existence of a predeterminate number of clusters.

For this research, a strategy based on Agglomerative Hierarchical Cluster Analysis was chosen. HCA is a family of exploratory clustering techniques that aims to describe the latent structure of the elements of a data set by clustering the data into progressively bigger subsets until all the elements of the data set are linked by a common final cluster. HCA is generally used when the optimal number of clusters is theoretically unknown by the researcher (Szekely et al., 2005) and its purpose is precisely to find the most optimal classification of the elements of the data set based on its common characteristics.

For the process of clustering to be successful, a measure of similarity must be chosen as well as a specific linkage method; similarity is achieved by choosing a particular measure of distance while linkage is the distance between the clusters expressed as function of the distances between pairs of elements (Fonesca, 2013). The selection of linkage and distance criteria is not standardized, and it depends both on the theoretical frame of the research and the inner structure of the data set.

Given the theoretical intentions of this research, the HCA conducted was based on the Ward linkage Method and Euclidian distance was used as the criteria to determine similarity among the elements. The Ward Linkage Method is an algorithm that aims to find partitions with the smallest sum of squares possible: initially, every single element of the data set its consider as a cluster itself, therefore the sum of squares will have an initial value of zero, then elements will be merged (or clusters) with the criteria of producing the minimal increase possible in the sum of squares, the iteration of the algorithm will continue until a k number of clusters is formed (Sharma & Batra, 2019) The process of forming clusters based on minimal sums of squares is known as merging cost and its defined mathematically as it follows:

$$\Delta(A,B) = \sum_{i \in A \cup B} || \vec{x}_i - \overrightarrow{m_j} ||^2 - \sum_{i \in A} || \vec{x}_i - \overrightarrow{m_A} ||^2 - \sum_{i \in B} || \vec{x}_i - \overrightarrow{m_B} ||^2$$

$$= \frac{n_A n_B}{n_A + n_B} || \vec{x}_i - \overrightarrow{m_A} ||^2$$

Where is the merging cost of merging the and clusters, corresponds to the center of a cluster and corresponds to the number of elements in the cluster.

The Ward method is a method used in hierarchical cluster analysis to measure the similarity between clusters during their merging. The Ward method focuses on minimizing the variance within each cluster and seeks to create more homogeneous clusters in terms of the variance of the variables being analysed. This method begins by considering each object as an individual cluster and then merges the closest clusters based on a measure of distance (e.g. Euclidean distance). During this merging process, the Ward method seeks to minimize the sum of squared differences between the values of the variables in each object and the mean value of the variables in the cluster to which it belongs. The Ward method aims to minimize the total variance within each cluster and is considered especially useful when analysing continuous or interval variables, as is the case in this article.

Euclidean distance its simply the distance between two points in a Euclidean space and it can be defined mathematically as it follows:

$$d(P_1, P_2) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Additionally descriptive statistics are presented for occupational status, educational levels and age groups and income alongside with the results of hypothesis tests to measure differences in income, age, and members of household between Venezuelan and Colombian workers. The variables used to conduct the proposed analysis are the following:

- Sex
- Age
- Educational level
- Total monthly income
- Occupational category
- Number of members of the household

Results

When comparing the socio demographic profiles of both the Venezuelan workforce and the Colombian workforce in Bogotá, it is possible to identify several differences between both groups. Overall, Venezuelan workforce in Bogotá is younger than the local workforce, its predominantly masculine and their members live in more numerous households in comparison with the local workforce. According to research about the topic, similar sociodemographic patterns of the are shared by Venezuelans who have settled in the countries of the region (Gandini et al., 2019). The following chart shows the distribution of both the Colombian and Venezuelan workforces by gender, where it is possible to appreciate the fact that the masculine workforce is approximately a 6.6 per cent higher as part of the total of the Venezuelan workforce than for the case of the male Colombian workers.

Graphic 3: Workforce by country of origin and gender in Bogotá (2021)
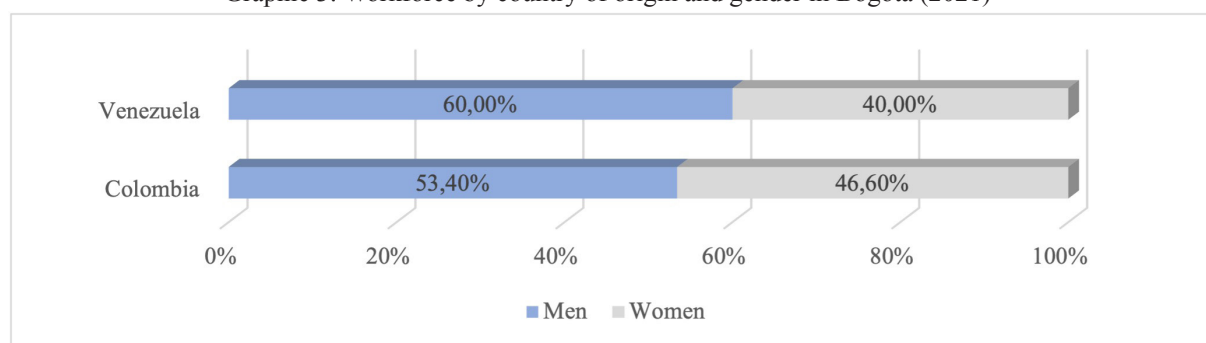
Source: elaborated by author with data from GEIH (2021)

Furthermore, the weight of the young population in the Venezuelan workforce is substantial: workers in the age group of 18 to 28 are equivalent to the 46.3 per cent of the total Venezuelan workforce in Bogotá, compared to the 25.9 per cent reported by the same age group for the case of Colombian workers. When data is disaggregated by gender it is possible to appreciate the same pattern: in both cases there is a bigger representation as part of the total of the age group between 18 and 28 years for both men and women of Venezuelan origin, than there is for Colombians. In the case of the women 25.7 per cent of the Colombian workers belong to the age group between 18 and 28, by contrast the Venezuelan female workers in the same age group are around 42.7 per cent of the total Venezuelan female workforce. For the case of the men the proportions are 26 per cent for the case of Colombians and 48.7 per cent for the case of Venezuelans. The predominance of young male workers in the sociodemographic structure of the Venezuelan migrant workforce in Bogotá is a reflect of the overall situation of the Venezuelan migration in the region (López et al., 2019).

Table 2: Workforce by age groups and gender for Venezuelans and Colombians (2021)

Country	Colombia		Venezuela		Colombia	Venezuela
Age	**Male**	**Female**	**Male**	**Female**	**Total**	
Younger than 18	1.00%	1.00%	3.50%	2.00%	1.00%	2.90%
Between 18 and 28	26.00%	25.70%	48.70%	42.70%	25.90%	46.30%
Between 29 and 56	57.70%	62.70%	46.00%	53.50%	60.10%	49.00%
Older than 56	15.30%	10.60%	1.70%	1.70%	13.10%	1.70%

Source: elaborated by author with data from GEIH (2021)

Up next it is shown hypothesis tests for the variables of age, number of people per household and income where statically significant differences can be seen when both groups are compared. As it is well known, the null hypothesis refers to the absence of statistically significant differences when the means of the normally distributed variables are measured, and the alternative hypothesis refers to the opposite case, in which differences exits. In the context of this research, the variable income refers to the sum of income from the main occupation, income in kind (housing and food) and income from a second economic activity, if exists. The analysis reveals that Venezuelan workers earn around 40 per cent less their Colombian pairs are approximately 9 years younger.

Table 3: Hypothesis testing tests for age, number of people in the household
and income for Venezuelans and Colombians in Bogotá (2021)

Variable	Country of origin	Mean	SD	SE	Confidence interval	T value	Two side test p value
Age	Colombians	40.1	13.3	0.1	39.8 - 40.3	18.1962	0.000
	Venezuelans	31.6	9.6	0.3	31.0 - 32.3		
Number of people in the house-hold	Colombians	3.5	1.6	0	3.4 - 3.5	-8.1157	0.000
	Venezuelans	3.9	1.9	0.1	3.8 - 4.1		
Income	Colombians	365.9	625.6	5.9	354 - 377	6.6218	0.000
	Venezuelans	223.8	220	7.5	209 - 238		

P-value = 0.000, α=5%, income is expressed in dollars of 2021 for Colombia
Source: elaborated by author with data from GEIH (2021)

In the last two decades Latin American societies have had major improvements in their labour market indicators, increases in productivity and improvement in working conditions, the regional labour market structures faces the challenges of dealing with high levels of informality and precariousness: many workers in the region are self-employed workers or salaried workers in micro-enterprises which in some cases do not provide adequate social security coverage to the workers who also work, in some circumstances, under nonregulated contractual relations (Tornarolli et al., 2014). These situations are mostly associated with low skilled workers, but it can also affect workers with relatively intermediate or high levels of skilfulness, creating important levels of subemployment, negative effects on productivity, low wages, and considerable volatility in the expected income.

According to the existing bibliography about the link between immigration and labour market, immigrant workforce has a tendency to integrate into the local labour market through low skill and informal occupations and generally at a slower pace compared to the local workforce; although there are important differences on immigrants occupational outcomes which are correlated to their educational levels and their countries of origin, the existent evidence suggest that, migratory status, low skill levels or the impossibility to demonstrate proficiency in previously acquired capabilities due to institutional barriers in the hosting country, the linguistic barrier if existent and a lack of social capital and professional connections, alongside with possible prejudices and stigmas about foreigners, shape the general profile of the majority of the immigrant workforce in a society, evidence for France (Simon & Steichen , 2014), United States (Gleeson, & Gonzales, 2012), Colombia (Salas-Wright et al., 2021), Brazil (Cavalcanti et al., 2015) and Argentina (Durán, 2021) can be found in specialized research.

In terms of their occupations, a bigger proportion of the Venezuelan workforce are occupied in activities classified as elementary and service activities in comparison with the Colombian workforce in Bogotá, occupations which are characterized by low skill levels, a higher levels of informality, difficulties in access to social security and health services and a more vulnerable situation in terms of labour rights (Sanchez-Torres, 2020); by contrast, a bigger proportion of Colombian workers is dedicated to activities considered as more stable and that requires higher levels of formal training or education as it can be seen in the predominance that Colombian workers have in professional and managerial positions. The table 3 shows the distribution of foreign workers according to their occupational status in comparison with the national workers and the table 3 shows the same comparison in terms of gender.

Table 4: National and immigrant workforce by occupational categories in Bogotá (2021)

Occupations	Colombians	Venezuelans
Service workers and shop and market sales workers	19.3%	29.3%
Clerks	16.7%	20.7%
Elementary occupations	16.5%	22.6%
Technicians and Associate Professionals	12.7%	6.4%
Legislators, Senior officials and Managers	10.2%	2.3%
Other activities	9.9%	3.5%
Professionals	5.7%	1.6%

Plant and machine operators and assemblers	4.6%	7.1%
Craft and related trades worker	3.9%	6.4%
Skilled agricultural and fishery workers	0.5%	0.0%

Source: elaborated by author with data from GEIH (2021)

The labour market of Bogotá and overall, of the Colombian economy as a whole, faces similar challenges than developing economies all over the world like stagnation of productivity, high informality rates, low salaries, and a high tendency to employ people in low skilled service activities. The fact that the absorption of the Venezuelan workforce in the city is done precisely trough these segments of occupation, creates important challenges in terms of public policy and academic research. Analysis regarding the effects of the relatively new introduced Venezuelan workforce into the labour market of Colombia are still a matter of debate, with research pointing out the existence of reasonable doubts to accept this claim as a fact (Bahar et al., 2018) and evidence in favour of a slight negative impact on wages and a tendency to substitute local workers for Venezuelan workers in specific economic activities(Obando-Arias, 2022), therefore, further research about this topic can be beneficial.

Furthermore, these tendencies of integration into the labour market may create additional difficulties and precariousness for Venezuelan workers, since evidence shows that the influx of Venezuelan immigrants do not have significant effects on the total levels of unemployment but particularly, it affects negatively the unemployment levels of the migrant population, where women, young workers and people with lower educational levels are more vulnerable to the negative dynamics of the labour market (Bonilla-Mejía et al., 2020). These difficulties can contribute to the development of situations of isolation and marginalization of an already very vulnerable social group.

Table 5: National and Venezuelan workforce by occupational categories and gender in Bogotá (2021)

Occupations	**Men**		**Women**	
	Colombia	**Venezuela**	**Colombia**	**Venezuela**
Elementary occupations	27.3%	34.8%	4.2%	4.4%
Clerks	14.1%	16.1%	19.7%	27.6%
Service workers and shop and market sales workers	12.3%	17.5%	27.3%	47.1%
Other activities	12.0%	4.7%	7.4%	1.7%
Technicians and Associate Professionals	8.9%	5.0%	17.1%	8.4%
Legislators, Senior officials, and Managers	8.1%	2.1%	12.5%	2.6%
Plant and machine operators and assemblers	7.9%	10.7%	0.8%	1.7%
Professionals	5.3%	1.7%	6.2%	1.5%
Craft and related trades worker	3.4%	7.4%	4.6%	4.9%
Skilled agricultural and fishery workers	0.6%	0.0%	0.4%	0.0%

Source: elaborated by author with data from GEIH (2021)

Latin American population is characterized by extremely low levels of illiteracy and high rates of formal schooling thanks to the massive expansion of education coverage occurred largely due to a predominant participation of the official sector in satisfying the national demand of basic and secondary education, a situation articulated with the modernizing projects conducted by the Latin American States during the 20th century (López, & Moncada, 2012), therefore it is logical to expect high levels of institutionalization of cultural capital among both nationals and foreigners, since immigration to Latin America is mainly an intercontinental process.

When compared by educational level, it is possible to appreciate these characteristics in both the national workers and the Venezuelans. The percentage of people with higher education degrees is higher for the case of the national workers than for Venezuelans and for both nationalities and a higher percentage of women hold university degrees

in comparison to the masculine workforce. It is also possible to contrast empirically the fact that absence of formal scholarity is practically non existing for both groups, which is coherent with the regional trends described previously.

Table 6: National and Venezuelan workforce by educational level in 2021

Educational level	Colombians	Venezuelans
Higher Education	45.30%	33.90%
Lower Secondary Education	9.10%	12.60%
None or incomplete primary education	0.60%	0.60%
Primary Education	11.50%	4.50%
Upper Secondary Education	33.60%	48.40%

Source: elaborated by author with data from GEIH (2021)

However, the case of Bogotá has its own particularities: although in Bogotá the Venezuelan workforce has lower levels of educational achievement, evidence for the cases of cities in Argentina (Biderbast P & Nuñez M. E, 2018), Spain (Del álamo Gómez. N & Peña A. T, 2020) and Chile (Cienfuegos-Illanes J & Ruf-Toledo I, 2022) shows higher levels of academic qualification of the Venezuelan migrants settled in these cities than the ones living in Bogotá, which is an indicator of the existence of a stronger tendency for the most vulnerable Venezuelans to move to Colombia than to other countries.

However as it has been shown, the magnitude of the Venezuelan crisis makes emigration a transversal phenomenon to every single social class in the country, therefore the existence of a very diverse sociological and demographic profile among the members of the Venezuelan diaspora, although research about the educational levels of the Venezuelan diaspora has described the situation points out the existence of a very severe process of human capital flight from the country (Garcia Zea, D. (2020).

Table 7: National and Venezuelan workforce by educational level and gender in Bogotá (2021)

Educational level	Men		Women	
	Colombia	Venezuela	Colombia	Venezuela
Higher Education	39.9%	28.5%	51.4%	41.9%
Lower Secondary Education	10.2%	14.0%	7.8%	10.5%
None or incomplete primary education	0.6%	0.6%	0.7%	0.6%
Primary Education	13.1%	5.2%	9.5%	3.5%
Upper Secondary Education	36.2%	51.7%	30.6%	43.6%

Source: elaborated by author with data from GEIH (2021)

There is an important core of specialized bibliography about the impact of immigrant workers in the general system of stratification of their hosting societies (Riederer et al., 2019) and in its inequality trends (Zhang & Wu, 2019) however research about the inner structure of the immigrant workers remain scarce. The following analysis can contribute to have better theoretical and empirical insights about the sociodemographic structure of immigrant workforce and can foster the discussion about this topic. The Hierarchical Cluster Analysis reveals the existence of three well defined latent groups of Venezuelan workers in Bogotá in terms of the variables described extensively so far. The cluster the Cluster A, held 39.9 per cent of the Venezuelan workers, the Cluster B 36.0, and the Cluster C 24.1 per cent. Up next, the dendrogram for the HCA is shown:

Graphic 4: Dendrogram for the HCA of the Venezuelan workers in Bogotá
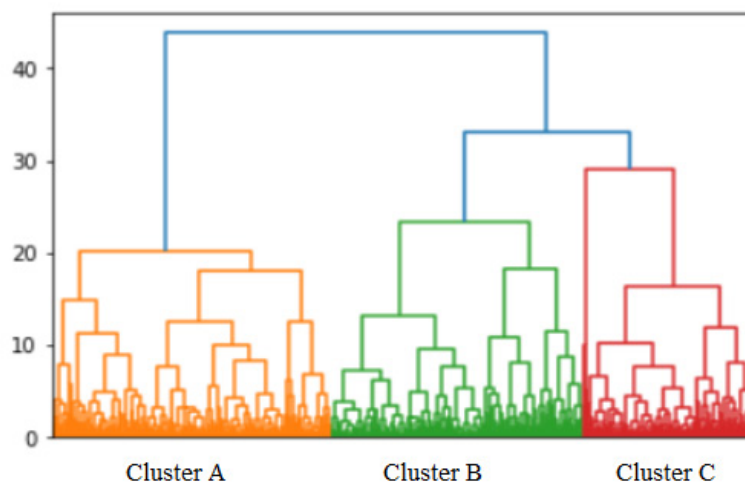
Source: elaborated by author with data from GEIH (2021)

The HCA reveals a clearly stratified structure: in terms of the occupational categories, the cluster A has an important proportion of workers occupied as service workers and shop and market sales workers (47.2 per cent) and as clerks (27.7 per cent), by contrast, the workers in the cluster B are occupied predominantly in activities classified as elementary occupations (57.3 per cent). In the case of the Cluster C, which is the smallest one, although the services workers and the clerks are the occupational categories with the highest per centages, this cluster has the bigger proportion of workers occupied in activities classified in the categories of Technicians and Associate Professionals (12.6 per cent) and Legislators, Senior officials, and Managers (5.3 per cent). The following table summarize in detail the characteristics of each cluster by occupational categories:

Table 8: HCA by occupational categories for Venezuelan workers in Bogotá

Occupations	Cluster A	Cluster B	Cluster C
Other occupations	1.70%	0.30%	11.10%
Clerks	27.70%	8.70%	27.10%
Craft and related trades worker	5.00%	11.00%	1.90%
Elementary occupations	4.40%	57.30%	1.00%
Legislators, Senior officials, and Managers	2.60%	0.00%	5.30%
Plant and machine operators and assemblers	1.70%	17.20%	1.00%
Professionals	1.20%	0.00%	4.80%
Service workers and shop and market sales workers	47.20%	5.50%	35.30%
Technicians and Associate Professionals	8.50%	0.00%	12.60%

Source: elaborated by author with data from GEIH (2021)

In terms of educational levels, the patterns are coherent with the results of the occupational categories: the Cluster A (41.7 per cent) and the Cluster C (46.4 per cent) have a substantial proportion of people with higher education degrees while the Cluster B has overall the lowest educational levels, with the percentage of people with higher education in this cluster been only of 16.8 per cent, and also the highest levels of workers with only primary education (9.4 per cent) or lower secondary education (23 per cent). The data for the HCA and educational levels is summarized in the following table:

Table 9: HCA by educational levels for Venezuelan workers in Bogotá

Educational level	Cluster A	Cluster B	Cluster C
Higher Education	41.70%	16.80%	46.40%
Lower Secondary Education	10.50%	23.00%	0.50%
Primary Education	4.10%	9.40%	0.50%
Upper Secondary Education	43.70%	50.80%	52.70%

Source: elaborated by author with data from GEIH (2021)

With respect to age, there are no significant differences between the workers that integrate each one of the clusters although as it was shown previously, overall, the Venezuelan workforce is younger than the Colombian workforce. However, when the number of members of the household is analysed, the Cluster B has on average a considerably higher number of members per household than the rest of the clusters, the total of the Venezuelan workers and the total of Colombian workers.

Although it is outside of the scope of this research, evidence shows that the most vulnerable Venezuelan migrants often recure to their previously build social capital when arriving for the first time to a new country to find a temporal residence, often in the households of Venezuelans who arrived before them, as well as a tendency to build new links of social capital through social media and common friendships between migrants that did not have any relationship in Venezuela (Escobar et al., 2021). The important differences in terms of the number of members in the household for the Cluster B may be a consequence of it alongside with the well-known dynamics of poverty and marginalization and segmentation of the housing renting market.

Table 10: HCA by average household size for Venezuelan workers in Bogotá

Size of household	Cluster A	Cluster B	Cluster C
Average number of members in the household	3.80	5.40	3.30

Source: elaborated by author with data from GEIH (2021)

When the average income is analysed, the inner social stratification structure of the Venezuelan workforce becomes clearer; the Venezuelan workers in the Cluster C earns 14 per cent more than the workers in the cluster A and around 32 per cent more than the workers in the cluster B. The average income of the Cluster C is also slightly higher than the average income of the total Venezuelan workers, although it is around 31.5 per cent lower than the average income of the Colombian workers in Bogotá (365.9 dollars of 2021). The underperformance of the Venezuelan workers in comparison to the Colombian workers when average income is taken as criteria of comparison reveals a situation of sub-optimal integration into the labour market of Bogotá and may be the signal of a broader phenomenon of marginalization that requires more attention from researchers and public authorities.

Table 11: HCA by average income of the household for Venezuelan workers in Bogotá

Average income in the household	Cluster A	Cluster B	Cluster C
Average income in 2021 dollars	218	137.5	253.5

Income is expressed in dollars of 2021 for Colombia.
Source: elaborated by author with data from GEIH (2021)

Conclusion

It is possible to appreciate a clear hierarchization in the sociodemographic structure of the Venezuelan workers living in Bogotá, three clearly defined clusters were identified which show differences between the Venezuelan workers in terms of income, educational levels, occupational status, number of members in the household, age, and gender. The Cluster B is composed by workers with the lowest average income, lowest educational level and the individuals that belong to this Cluster are occupied mainly in activities that according to the existing bibliography are associated with higher levels of informality, precariousness and that do not demand high skill or educational levels, by contrast, the Cluster C is composed by individuals who in relative terms, have a higher average income and are more educated,

as well as they seem to be occupied in more formal and stable occupations, while the Cluster A is in between both cluster B and C in terms of its sociodemographic characteristics.

Furthermore, in comparison to the Colombian workers, the Venezuelans earn less, they are occupied in activities considered more likely associated with informality and non-skilled work, are younger, their workforce is slightly more masculinized and tend to live in more numerous households. In terms of educational levels, although overall the Venezuelan workforce shows lower academic qualifications, the workers of the Cluster C have similar levels than those of the national workforce. These sociodemographic characteristics may suggest that the process of integration of the Venezuelan workforce into the labour market of Bogotá presents many challenges in terms of preventing precariousness, isolation, sub-employment and raises questions about the life quality and the well-being the of Venezuelan migrants who currently reside in the city.

Since the expectations of return of the Venezuelan population remine elusive, and the crisis in Venezuela persist till now, it is important to expand the scope of research to comprehend the impact that their immigration has in the region outside of the context of the labour market, but also, for example, in terms of the integration of Venezuelan migrants to the schooling system or the impact that their pattens of settlement has in the characteristics of cities and neighbours. Furthermore, to inquire for the sociodemographic profiles of the Venezuelan diaspora in Latin American countries can provide interesting and useful insights about their inner structure, when there are considered as a group with its own dynamics and characteristics and not only as exogenous factors. The comprehension of these elements can contribute to the development of institutional initiatives and public policies that can improve the process of integration of Venezuelans and to rase awareness about the risks of structural marginalization.

The impact of Venezuelan immigration on the labour market in host countries is an essential aspect to consider and this article intents to contribute, although modestly, to the ongoing discussion about the problematics that the Venezuelan diaspora experiences day by day. Venezuelan migrants often face challenges in finding formal employment due to a lack of documentation, language barriers, and discrimination. This can lead to underemployment or even exploitation in the informal economy. To address these challenges, policymakers can create initiatives that facilitate the recognition of foreign credentials, offer language classes, and provide job training and placement programs. Moreover, it is crucial to combat discrimination and promote diversity and inclusion in the workplace to ensure that Venezuelan migrants have equal opportunities to succeed.

Additionally, policymakers can work to promote the social protection of Venezuelan migrants in the labour market by extending social security coverage, access to healthcare, and other benefits to this vulnerable population. This can help to mitigate the risks of exploitation and promote the social and economic integration of Venezuelan migrants into their new communities. In summary, the labor market impact of Venezuelan immigration is a critical area to consider in developing policies to facilitate integration and promote social and economic well-being for Venezuelan migrants and host communities. By addressing challenges such as discrimination, lack of documentation, and language barriers and promoting social protection, policymakers can help Venezuelan migrants to access formal employment, reduce the risk of exploitation, and make positive contributions to their new communities.

Bibliography

Abad, L. A., Davies, E., & Van Zanden, J. L. (2012). Between conquest and independence: Real wages and demographic change in Spanish America, 1530–1820. Explorations in Economic History, 49(2), 149-166.

Alderman, H., Behrman, J. R., Kohler, H.-P., Maluccio, J. A., & Watkins, S. C. (2001). Attrition in Longitudinal Household Survey Data: Some Tests for Three Developing-Country Samples. Demographic Research, 5, 79–124.

Alekséenko, O. A., & Pyatakov, A. N. (2019). Venezuela: prueba por la crisis. Iberoamérica, (2), 57-83.

Alonso, B. (2007). The Other Europeans: Immigration into Latin America and the International Labour Market (1870–1930). Revista De Historia Económica / Journal of Iberian and Latin American Economic History, 25(3), 395-426. doi:10.1017/S0212610900000185

Bahar, D., Dooely, M., & Huang, C. (2018). Integrating Venezuelans into the Colombian labor market. Global Economy and Development at Brookings, Policy Brief. Retrieved from https://www. brookings. edu/wp-content/uploads/2018/12/Venezuelan-Migrants_English. pdf.

Białowolski, P. (2015). Concepts of Confidence in Tendency Survey Research: An Assessment with Multi-group Confirmatory Factor Analysis. Social Indicators Research, 123(1), 281-302. doi: 10.1007/s11205-014-0736-1.

Biderbast, P. y Nuñez, M. E. (2018). Del Río de la Plata al Orinoco y viceversa. Patrones y flujos migratorios entre Argentina y Venezuela. J. y. E. R. Koechlin, Joaquín (Ed.), El éxodo venezolano: entre el exilio y la emigración,135-166. Madrid: Observatorio Iberoamericano sobre Movilidad Humana, Migraciones y Desarro

Blackstone, A. (2018). Principles of sociological inquiry: Qualitative and quantitative methods. Saylor Academy Open Textbooks.

Bonilla-Mejía, L., Morales, L. F., Hermida-Giraldo, D., & Flórez, L. A. (2020). El mercado laboral de los inmigrantes y no inmigrantes. Evidencia de la crisis venezolana de refugiados (No. 1119). Banco de la Republica de Colombia.

Briceño-León, R. (2006). Violence in Venezuela: oil rent and political crisis. Ciência & Saúde Coletiva, 11(2), 315-325.

Cavalcanti, L., Oliveira, A. T., Tonhati, T., & Dutra, D. (2015). A inserção dos imigrantes no mercado de trabalho brasileiro. *Relatório anual*.

Cienfuegos-Illanes, J., & Ruf-Toledo, I. (2022). Profesionales de nacionalidad venezolana en Chile: barreras, estrategias y trayectorias de su migración. *Estudios Públicos*, (165), 77-104.

DANE (2015) Perfil demográfico, laboral y educativo de la migración venezolana, 2014-2021 Un panorama usando la Gran Encuesta Integrada de Hogares. Avaliable from: https://www.dane.gov.co/files/investigaciones/notas-estadisticas/dic-2021-nota-estadistica-perfil-demografico-laboral-poblacion-venezolana-en-colombia-2014-2021

de Flores, R. Á. (2004). La dinámica migratoria colombo-venezolana: evolución y perspectiva actual. *Geoenseñanza*, *9*(2), 191-202.

Del álamo Gómez, N., & Peña, A. T. (2020). Los estudiantes venezolanos en España: un colectivo migratorio cualificado afectado por el conflicto. *América Latina Hoy*, *85*, 91-109.

Durán, J. M. (2021). Estudio Sociológico de las Percepciones sobre Inmigración: El Caso de los Colombianos y Venezolanos en Argentina. *Perspectivas: Revista Científica de la Universidad de Belgrano*, *4*(1), 42-55.

ESENCIAL, A., & Rodríguez, A. B. (2019). Discriminación étnica y genérica de las indígenas en el siglo XIX. In M. B. Heras (Ed.), Mercedes Olivera: Feminismo popular y revolución. Entre la militancia y la antropología (pp. 475–512). CLACSO. https://doi.org/10.2307/j.ctvt6rm5c.24

Fonseca, J. R. (2013). Clustering in the field of social sciences: that is your choice. International Journal of Social Research Methodology, 16(5), 403-428.

Ferreira, S. R., & Almeida-Pittito, B. D. (2009). Reflexão sobre a imigração japonesa no Brasil sob o ângulo da adiposidade corporal. *Arquivos Brasileiros de Endocrinologia & Metabologia*, *53*, 175-182.

Gandini, L. C., Lozano Ascencio, F. C., & Prieto, V. C. (2019). Crisis y migración de población venezolana: entre la desprotección y la seguridad jurídica en Latinoamérica. Universidad Nacional Autónoma de México.

Garcia Zea, D. (2020). Brain drain in Venezuela: the scope of the human capital crisis. *Human Resource Development International*, *23*(2), 188-195.

Gleeson, S., & Gonzales, R. G. (2012). When do papers matter? An institutional analysis of undocumented life in the United States. *International Migration*, *50*(4), 1-19.

Giraudo, L. (2018). Casta (s),"sociedad de castas" e indigenismo: la interpretación del pasado colonial en el siglo XX. Nuevo Mundo Mundos Nuevos. Nouveaux mondes mondes nouveaux-Novo Mundo Mundos Novos-New world New worlds.

Gobat, M. (2013). The invention of Latin America: A transnational history of anti-imperialism, democracy, and race. The American Historical Review, 118(5), 1345-1375.

Goebel, M. (2016). Immigration and national identity in Latin America, 1870–1930. In Oxford Research Encyclopedia of Latin American History.

Gómez, M. A. (2009). La política internacional migratoria colombiana a principios del siglo XX. Memoria y sociedad, 13(26), 7-17.

Gómez, S. (2005). Nikkei Argentinos: identidad en construcción. Analisis preliminar de un grupo nikkei en la ciudad de La Plata. In *Jornadas Nacionales de Estudios Japoneses "La investigación del Japón en la Argentina. Intercambios para una Asociación"*. Centro de Estudios Japoneses, Instituto de Relaciones Internacionales, UNLP.

Guataquí, J. U. A. N., García-Suaza, A., Ospina Cartagena, C., Londoño Aguirre, D., Rodríguez Lesmes, P., & Baquero, J. U. A. N. (2017). Características de los migrantes de Venezuela a Colombia. *Informe*, *3*, 1-9.

Levy, M. S. F. (1974). O papel da migração internacional na evolução da população brasileira (1872 a 1972). *Revista de Saúde Pública*, *8*, 49-90.

Logan, J. R. (2018). Relying on the Census in Urban Social Science. City & Community, 17(3), 540–549. https://doi.org/10.1111/cico.12331

López, L, J. Koechlin y J. Eguren (2019). El éxodo venezolano: entre el exilio y la emigración. *Migraciones. Publicación del Instituto Universitario de Estudios sobre Migraciones*, (46), 213-217.

López, C. M. y Moncada, L. Z. (2012). Expectativas de acceso a la universidad en los jóvenes de sectores populares de Bogotá. *Educ. Educ*. Vol. 15, No. 3, 383-409. doi: 10.5294/edu.2012.15.3.3

Mejía, W (2022) Venezuela: The Golden Magnet. In *The Routledge History of Modern Latin American Migration* (pp. 215-231). Routledge.

Modolo, V. E. (2016). Análisis histórico-demográfico de la inmigración en la Argentina del Centenario al Bicentenario. *Papeles de población*, *22*(89), 201-222.

Nicolao, J., Debandí, N y Penchasadeh, A. (2022). Migración venezolana en la República Argentina. Desafíos emergentes de su integración laboral en el marco de la pandemia. *Polis Revista Latinoamericana*, *21* (62), 111-141. doi: http://dx.doi.org/10.32735/S0718-6568/2022-N62-1671

Obando Arias, A. J., Ramoni-Perazzi, J., & Guerrero Rincón, I. (2022). Efectos de la migración venezolana sobre los salarios en colombia. *Estudios de economía*, *49*(1), 91-113.

Ospina, A. T., Muñoz, A. M., Niño, L. A., & Scharnholz, L. (2016). Industria, comercio y arquitectura. Alemanes en la industrialización en Colombia. *Quaestiones Disputatae-Temas en debate*, *9*(18), 158-171.

Peñaloza-Pacheco, L. Living with the neighbors: the effect of Venezuelan forced migration on the labor market in Colombia. *J Labour Market Res* **56**, 14 (2022). https://doi.org/10.1186/s12651-022-00318-3

Ribas, C. V. (2018). La migración en Venezuela como dimensión de la crisis. *Pensamiento propio*, *47*, 91-128.

Riederer, B., Verwiebe, R., & Seewann, L. (2019). Changing social stratification in V ienna: W hy are migrants declining from the middle of society?. Population, Space and Place, 25(2), e2215.

Rhenals Doria, Ana Milena, & Flórez Bolívar, Francisco Javier. (2013). Escogiendo entre los extranjeros "indeseables": afro-antillanos, sirio-libaneses, raza e inmigración en Colombia, 1880-1937. Anuario Colombiano de Historia Social y de la Cultura, 40(1), 243-271. Retrieved November 18, 2022, from http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-24562013000100009&lng=en&tlng=es.

Salas-Wright, C. P., Oh, S., Vaughn, M. G., Pérez-Gómez, A., Mejía-Trujillo, J., Montero-Zamora, P., ... & Schwartz, S. J. (2021). A validation of the Perceived Negative Context of Reception Scale with recently-arrived Venezuelan immigrants in Colombia and the United States. *Cultural Diversity and Ethnic Minority Psycholog*

Sanchez Torres, R. (2020). Poverty and labor informality in Colombia. IZA Journal of Labor Policy, 10(1).

Sharma, S., & Batra, N. (2019, February). Comparative study of single linkage, complete linkage, and ward method of agglomerative clustering. In 2019 International Conference on Machine Learning, Big Data, Cloud and Parallel Computing (COMITCon) (pp. 568-573). IEEE.

Simon, P., & Steichen, E. (2014). Slow motion: The labor market integration of new immigrants in France. *Migration Policy Institute, Reports*.

Szekely, G. J., & Rizzo, M. L. (2005). Hierarchical clustering via joint between-within distances: Extending Ward's minimum variance method. Journal of classification, 22(2), 151-184.

Tornarolli, L., Battistón, D., Gasparini, L., & Gluzmann, P. (2014). *Exploring trends in labor informality in Latin America, 1990-2010* (No. 159). Documento de Trabajo.

UNHCR (2021). Global report. Available from https://reporting.unhcr.org/globalreport2021/pdf

Wabgou, M., Vargas, D., & Carabalí, J. A. (2012). Las migraciones internacionales en Colombia. *Investigacion y desarrollo*, *20*(1), 142-167.

Zhang, Z., & Wu, X. (2017). Occupational segregation and earnings inequality: Rural migrants and local workers in urban China. Social science research, 61, 57-74.