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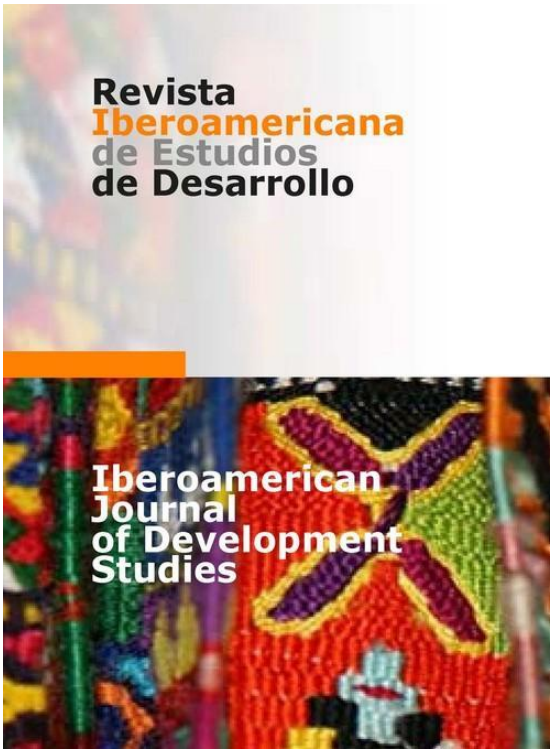

Héctor Javier Bendezú-Jiménez

Aníbal Erik Romero-Bendezú

Giovanna Chuchón-Ochoa

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Determinants of the Employment Quality Index (EQI) among Venezuelan migrants in Peru: social capital, cultural integration, discrimination, and gender inequalities

Determinantes del Índice de Calidad del Empleo (ICE) en migrantes venezolanos en Perú: capital social, integración cultural, discriminación y desigualdades de género

Héctor Javier BENDEZÚ-JIMÉNEZ
hbendezuj@unmsm.edu.pe
Universidad Nacional Mayor
de San Marcos (Perú)
https://orcid.org/0000-0001-9530-6472

Aníbal Erik ROMERO-BENDEZÚ
Universidad Científica del Sur (Perú)
https://orcid.org/0000-0002-2176-5286

Giovanna CHUCHÓN-OCHOA
Universidad Nacional Mayor
de San Marcos (Perú)
https://orcid.org/0000-0001-9814-1415

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Abstract

This study examines the determinants of job quality among Venezuelan migrants in Peru, a country that has received one of the largest migration flows in the region in recent years. It utilizes the National Survey of the Venezuelan Population 2022 and estimates a beta regression model to analyze how factors related to human capital, cultural integration, community social networks, perceived discrimination, and gender are associated with a multidimensional index of job quality. The results show that the level of education attained in Venezuela, continuous education in the host country, and cultural integration are positively associated with higher job quality, while community social networks and discrimination present negative associations. Additionally, gender disparities in access to better-quality jobs are evident. The study contributes to the literature on labor migration in Latin America by providing empirical evidence on the factors associated with job quality for migrants, highlighting the importance of policies aimed at reducing structural barriers and strengthening human and social capital to facilitate labor integration.

Keywords: job quality, Venezuelan migration, human capital, social capital, cultural integration, discrimination.

Resumen

En este estudio, se examinan los determinantes de la calidad del empleo entre migrantes venezolanos en Perú, un país que ha recibido uno de los mayores flujos migratorios de la región en los últimos años. Se utiliza la Encuesta Nacional de la Población Venezolana 2022 y se estima un modelo de regresión beta para analizar cómo factores vinculados al capital humano, la integración cultural, las redes sociales comunitarias, la discriminación percibida y el género se asocian con un índice multidimensional de calidad del empleo. Los resultados muestran que el nivel educativo alcanzado en Venezuela, la educación continua en el país de acogida y la integración cultural se asocian positivamente con una mayor calidad del empleo, mientras que las redes sociales comunitarias y la discriminación presentan asociaciones negativas. Además, se evidencian disparidades de género en el acceso a empleos de mejor calidad. El estudio contribuye a la bibliografía sobre migración laboral en América Latina, al aportar evidencia empírica sobre los factores asociados con la calidad del empleo de los migrantes, destacando

la importancia de políticas orientadas a la reducción de barreras estructurales y al fortalecimiento del capital humano y social, para favorecer la integración laboral.

Palabras clave: calidad del empleo, migración venezolana, capital humano, capital social, integración cultural, discriminación.

1

Introduction

Venezuelan migration to Peru constitutes one of the most significant migratory phenomena in Latin America over the last decade. This movement, driven by a multifaceted crisis in Venezuela, has led to the settlement of over 1.5 million Venezuelan migrants in Peru, according to data from the International Organization for Migration (IOM 2021b). Among them, it is estimated that 531,000 individuals have applied for asylum or hold «refugee» status in the country, highlighting the importance of addressing the specific needs of this group in terms of economic and social integration (UNHCR 2022). While this migration offers opportunities for economic and social development in the host country, it also presents significant challenges regarding labor, social, and cultural integration.

In this context, the concept of «job quality» becomes a fundamental axis for assessing migrants' working conditions and their impact on human rights protection, as emphasized by the International Labour Organization (ILO 2021) and the World Bank (2024). «Job quality» can be defined as employment that provides adequate income, stability, access to social benefits, and safe and fair working conditions. According to the World Bank, «quality employment» includes essential dimensions such as fair remuneration, job security, decent working conditions, equal opportunities, and respect for fundamental labor rights (Brummund *et al.* 2016). Therefore, beyond addressing economic needs, «job quality» also respects and preserves human dignity as an inherent and fundamental right in modern societies.

Beyond being a key indicator of economic well-being, «job quality» plays a crucial role in promoting social cohesion and human rights protection. This type of employment has a positive impact on the economy by increasing productivity, promoting social inclusion, and contributing to the reduction of structural inequalities. It also strengthens the emotional and psychological stability of workers, an especially relevant factor for migrant populations, who often face multiple vulnerabilities, such as discrimination and economic insecurity, during their integration process into new societies (ILO 2021).

Access to quality jobs extends beyond the economic realm and is intrinsically linked to the protection of fundamental human rights. The Universal Declaration of Human Rights establishes in Article 23 the right to decent work as an inherent principle of human dignity (United Nations 1948). Likewise, the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families reinforces this right, emphasizing the

importance of ensuring fair, safe, and non-discriminatory working conditions for all workers, regardless of their migration status (United Nations 1990). This legal framework underscores the need for inclusive labor policies that ensure access to quality employment as a tool for human development and global social cohesion.

Furthermore, this legal framework includes specific provisions for refugees. According to the 1951 Refugee Convention (UNHCR 1951) and its 1967 Protocol, states must guarantee equal access to employment, fostering the economic and social integration of refugees. In the Peruvian case, migrants with «refugee» status face additional challenges related to the formalization of their migration status and access to quality jobs, highlighting the importance of implementing inclusive policies that help overcome structural barriers and promote their full integration into the formal labor market (UNHCR 2022). This approach aligns with the United Nations Sustainable Development Goals (SDGs), particularly those related to decent work and reducing inequalities, emphasizing the need to ensure equitable working conditions for all workers, regardless of their migration or «refugee» status (UN 2015). However, barriers to accessing quality jobs are particularly evident in vulnerable populations such as migrants, who frequently face discrimination, exploitation, and exclusion from the formal labor market (ECLAC 2006).

For Venezuelan migrants in Peru, access to quality jobs remains a significant challenge. According to the World Bank (2024), more than 70 % of Venezuelan migrants in the country work in the informal sector, which implies a lack of formal contracts, no access to social benefits, and low levels of job security. This precariousness not only perpetuates economic vulnerability but also restricts the exercise of fundamental rights, threatening human dignity. In this context, the International Labour Organization (ILO 2021) has highlighted that labor informality and exploitation constitute direct violations of human rights, exacerbated by cultural prejudices and acts of xenophobia.

Discrimination based on origin is a major obstacle to the social and labor inclusion of Venezuelan migrants. The International Organization for Migration (IOM 2021a) reports that approximately 30 % of this population has experienced discrimination related to their nationality. These situations not only violate fundamental rights but also reinforce negative stereotypes, increasing marginalization and making their full integration into Peruvian society more difficult. In the case of migrant women, wage gaps and unpaid caregiving responsibilities further exacerbate barriers to accessing the formal labor market (Brummund *et al.* 2016).

At a regional level, the issue of job quality goes beyond Peru and affects Latin America as a whole. Labor informality, which affects 47,6 % of workers in the region,

disproportionately impacts migrant populations (OIT 2025); for example, in Colombia — another country that receives a significant number of Venezuelan migrants — 78 % of migrant workers are employed in informal labor conditions, characterized by low wages and lack of access to social benefits (DANE 2024). This pattern is also observed in other regions, such as the United States, where immigrant workers are disproportionately represented in low-wage and precarious jobs, facing challenges such as unstable schedules, poor working conditions, and limited job security (Columbia University 2022).

In Latin America, low-quality jobs not only reflect the region's structural inequality but also perpetuate cycles of poverty, particularly among the most vulnerable populations, such as migrants. Although economic growth in the region during the early 2000s allowed for significant poverty reduction, these achievements were uneven and largely dependent on the quality of jobs generated (Brummund *et al.* 2016).

«Job quality» is directly related to the sustainability of social and economic achievements at both national and regional levels, as improvements in this area significantly contribute to reducing poverty and inequality in Latin America. In this regard, the World Bank (2024) states that a 0.01 increase in the Job Quality Index (JQI) is associated with a 0.9 % reduction in poverty rates. However, the same report highlights those countries such as Peru, Honduras, and Guatemala record some of the lowest job quality levels in the region, reflecting significant structural challenges.

On the other hand, «quality employment» not only ensures the economic sustainability of migrants but also promotes their social and emotional well-being. Additionally, it contributes to improving productivity, fostering social inclusion, and reducing structural inequalities (ILO 2021).

Within this framework, the present study aims to identify the determinants of job quality among Venezuelan migrants in Peru, analyzing their impact on migrants' living conditions and well-being. This objective addresses an empirical gap in the Latin American literature regarding the multidimensional analysis of employment quality, thus providing relevant quantitative evidence for discussions on economic integration in the Global South. Additionally, the study incorporates human rights and structural inequality perspectives, enriching contemporary migration studies and contributes to the design of labor inclusion policies in high informality contexts.

2

Literature review

2.1. Human capital and cultural capital: education, qualifications, and recognition

Human and cultural capital are fundamental to understanding how migrants secure employment and achieve integration into host-country labor markets. Bourdieu (1986) defines «social capital» as the resources embedded within social networks that provide access to economic and social opportunities, whose effectiveness depends on their recognition and legitimacy in the host society. For migrants, such networks can act as bridges to formal employment, access to resources, and participation in economic life.

Granovetter's (1973) theory of the «strength of weak ties» further explains that weaker social connections — such as acquaintances or occasional contacts — often provide broader access to job opportunities, by linking individuals to diverse social circles where valuable information flows. These connections are particularly relevant in segmented labor markets, as they can help migrants overcome barriers such as discrimination and informality, thereby facilitating integration into better-quality jobs.

Putnam (2000) complements this discussion, by distinguishing «between bonding» and «bridging capital». The former strengthens cohesion within migrant communities, while the latter facilitates integration, by promoting interactions with external groups. Narayan (1999) extends this framework, by emphasizing that «bonding capital» provides solidarity and mutual support, whereas «bridging capital» creates links to individuals and institutions outside the group — an essential condition for overcoming poverty and improving access to economic opportunities. In migration contexts, the coexistence of both forms of capital determines whether networks merely provide subsistence or effectively enhance labor market integration.

«Cultural capital», as conceptualized by Bourdieu (1986), comprises the knowledge, skills, credentials, and behaviors valued in specific social contexts. Its role in migration depends largely on the degree to which host-country institutions and employers recognize these resources. Bourdieu and Passeron (1977) argue that structural inequalities persist, through the differential valuation of cultural capital; a dynamic evident when migrants' foreign credentials and skills are undervalued, relegating them to low-quality or informal jobs. Complementarily, Coleman (1988) highlights that «cultural capital», when combined with «social capital», shapes social mobility, by linking individuals to norms, values, and networks that facilitate access to education and employment.

2.2. Structural barriers and labor segmentation

Crenshaw's (1989) intersectionality theory provides a framework to understand how overlapping systems of oppression — such as race, gender, and nationality — interact with migrants' social and cultural capital. These intersections amplify structural barriers, limit access to formal employment, and shape migrants' overall living conditions.

Building on this perspective, the labor market segmentation theory developed by Piore (1979) explains how modern economies divide labor markets into segments with limited mobility. It distinguishes between a «primary segment», characterized by higher wages, job stability, and benefits, and a «secondary segment», marked by precarious, unstable, and poorly paid jobs. Migrants frequently become concentrated in the secondary segment, due to factors such as legal status constraints, discrimination, and limited access to labor market information.

In line with this argument, Pager and Shepherd (2008) review empirical evidence on racial discrimination in employment and demonstrate that both overt and subtle forms of discrimination reduce access to quality jobs, reinforce segmentation, and perpetuate inequalities. Their findings indicate that even when migrants possess adequate qualifications, structural discrimination can significantly hinder labor market integration and limit upward mobility.

2.3. Human capital, over-education and labor welfare: challenges in accessing skilled jobs

Schultz (1961) was among the first to conceptualize education and skills acquisition as investments in human capital that enhance both individual productivity and aggregate economic growth. Building on this foundation, Becker's (1964) human capital theory formalized the idea that education and training increase workers' productivity and, consequently, their earnings and employment conditions. In migration contexts, this framework underscores the importance of skills obtained in both the origin and host countries for successful labor market integration.

Nevertheless, empirical evidence shows that education does not always translate into equivalent labor market outcomes; for example, Dustmann and Glitz (2011), using European microdata, documented that highly educated migrants often experience skill underutilization and overeducation, leading to persistent mismatches between qualifications and occupations. These mismatches contribute to structural disadvantages and reduced access to high-quality employment.

Moreover, human capital theory alone does not fully account for structural factors — such as discrimination, labor market segmentation, and administrative barriers — that limit the recognition of foreign credentials. In this regard, Czaika and De Haas (2013) found that restrictive bureaucratic procedures and high credential validation costs significantly reduce skilled migrants' labor mobility, increasing the likelihood of employment in lower-quality jobs.

To address these limitations, Amartya Sen's (1999) capability approaches posits that well-being should be evaluated not only by income or material resources but also by individuals' real freedoms to achieve valued ways of living. Applied to the labor market, this perspective emphasizes the relevance of having genuine opportunities to develop skills, make choices, and participate fully in economic and social life.

In this regard, Peter Edward introduced the Ethical Poverty Line (EPL) as a more inclusive measure compared to traditional poverty thresholds, which set arbitrary limits of $1 or $2 per day based solely on monetary indicators. His approach critiques the standard definition of «extreme poverty», which focuses on minimum income without considering broader aspects of well-being, such as life expectancy. Edward (2006) argued that conventional poverty lines fail to accurately reflect an individual's capacity to live a dignified and fulfilling life.

The EPL is based on the empirical relationship between «consumption» and «life expectancy», known as the Preston Curve, to determine a threshold that ensures a minimally acceptable standard of living. Below a certain level of consumption, life expectancy declines sharply, whereas marginal increases beyond this point contribute to extended longevity. Edward established this threshold at $7.40 per day in 2017 (Purchasing Power Parity, PPP), representing the minimum income necessary to prevent severe deprivation and secure dignified existence. This approach broadens the understanding of poverty, by integrating human well-being indicators and provides an ethical foundation for evaluating living conditions and formulating more effective public policies.

2.4. Practical impact of social and cultural capital and structural barriers on the labor market integration of migrants

Several studies have examined the role of social and cultural capital in the labor market integration of migrants using different empirical strategies. Wahlbeck and Fortelius (2019), based on in-depth interviews with 32 Swedish migrants in Helsinki, found that language proficiency and bridging social networks — especially through relationships with Finnish

spouses and friends — significantly increased the likelihood of obtaining formal employment, despite the limited recognition of foreign credentials in Finland. Using data from the Survey of Adult Skills (PIAAC), the OECD (2018) shows that migrants with proficiency in the host-country language exhibit significantly better labor market outcomes, including a higher likelihood of accessing medium- and high-skilled jobs, even after accounting for differences in education and work experience.

Zhang *et al.* (2024) analyzed the impact of social capital on migrant integration in China using microdata from the 2018 China Migrant Dynamic Survey (CMDS), which included over 150,000 respondents. Employing structural equation modeling, the authors found that both bonding and bridging social capital were positively associated with migrants' social integration (standardized coefficients of 0.28 and 0.31, respectively), while perceptions of inequality or «relative deprivation» partially mediated these effects, reducing the strength of social ties on integration outcomes by approximately 20 %. These findings extend social capital theory, by showing that different forms of social capital influence integration through distinct mechanisms and that perceived inequality can weaken these positive effects.

Nohl *et al.* (2014) implemented a mixed-methods approach combining semi-structured interviews (n = 220 highly skilled migrants) in Germany, Canada, and Turkey, along with survey data analyzed via logistic regression. Their quantitative analysis revealed that migrants whose credentials were formally recognized had 35 % higher odds ($OR \approx 1.35$, $p < 0.05$) of attaining employment in occupational categories matching their qualifications, compared to those whose credentials were not validated. Additionally, qualitative findings emphasized that cultural mismatches — such as differences in communicative style or social norms — resulted in symbolic exclusion, as many respondents described feeling compelled to accept jobs below their qualifications, despite having equivalent credentials to local peers. This dual approach highlights that both institutional procedures and cultural assimilation are crucial for the effective utilization of migrants' skills in host labor markets.

Battisti *et al.* (2021) analyzed a longitudinal administrative dataset of approximately 500,000 immigrants residing in Germany between 1995 and 2010, combined with pre-migration controls such as country of origin, age, and education. Using fixed-effects panel regressions, they estimated the causal impact of co-ethnic networks on labor market outcomes. Their results showed that immigrants living in districts with a one-standard-deviation larger co-ethnic network had a 6-percentage-point higher probability of employment in their first year after arrival and earned; on average, 4% higher wages ($p < 0.05$). However, this advantage declined over time; by the fourth year, the employment gap narrowed to 1 percentage point, as

migrants in areas with smaller networks invested more in host-country human capital — such as language courses and professional training —, improving their long-term employment prospects and wage growth.

Evidence from Latin America supports these findings Olivieri *et al.* (2020) examine how Venezuelan migration has affected Ecuador's labor market. Using microdata from Ecuador's EPEC survey, administrative records and cell-phone-based indicators to map migrant settlement, they apply a difference-in-differences design across cantons for 2016-2019. They show that Venezuelan migrants are generally more educated and have higher employment rates than Ecuadorian workers yet face poorer job quality: informality among migrants is 15-29 percentage points higher, contracts are more often temporary, and monthly earnings are roughly 36 % lower, despite longer working hours. About 72 % of migrants report that their skills were better used in Venezuela, indicating a considerable occupational downgrade. The authors also assess spillovers on host communities. In cantons with large inflows of migrants, low-educated Ecuadorian workers experience a rise in informality of about five percentage points and an average hourly wage decline of around 13 %. The study concludes that highly educated migrants face structural obstacles to formal employment, which can worsen labor outcomes for low-skilled locals; it recommends easing credential recognition and access to work permits, to curb informality and improve prospects for migrants and host communities alike.

Also, Melo-Vega *et al.* (2023), using ENPOVE 2018 data and a logistic regression model, found that the likelihood of accessing quality employment among Venezuelan migrants increases significantly with educational attainment ($OR = 1.42$; $p < 0.05$) and possession of a residence permit ($OR = 2.05$; $p < 0.01$). Being female reduces this probability by 21 % ($p < 0.05$), while length of stay, although positive, is not statistically significant. The authors conclude that the devaluation of foreign credentials and lack of legal permits explain a substantial share of occupational segregation.

Similarly, Asencios and Castellares (2020) analyzed ENAHO 2019 data using an Oaxaca-Blinder decomposition to compare occupational distribution between Venezuelan migrants and Peruvians. They found that 68 % of migrants work in the informal sector, compared with 72 % of Peruvians, but migrants are overrepresented in low-skilled jobs (59 % vs. 42 %). Although migrants have on average 1.6 more years of schooling, the wage penalty associated with non-recognition of credentials accounts for 28 % of the explained earnings gap. The authors attribute this gap to institutional discrimination and limited educational credential recognition in the Peruvian labor market.

Despite the extensive literature on social and cultural capital, as well as labor market segmentation, few studies have quantitatively analyzed the determinants of job quality for Venezuelan migrants in Peru using recent and representative data. Most existing research in Latin America focuses on employment outcomes, such as labor force participation, informality, or earnings, without adopting a multidimensional approach to employment quality. Furthermore, there is limited evidence on how education obtained in the country of origin, continuing education in the host country, cultural integration, and perceived discrimination jointly shape migrants' labor market outcomes in contexts of high informality.

3

Method and data

3.1. Data and sample

This study uses data from the 2022 National Survey of the Venezuelan Population (ENPOVE 2022), focusing on individuals aged eighteen and older. After filtering, the final sample comprises 12,487 observations. The research adopts a quantitative, empirical, and explanatory approach to identify and analyze the determinants of job quality among Venezuelan migrants in Peru, aiming to establish causal relationships between key predictors and job quality outcomes.

3.2. Descriptive statistics

Table 1 summarizes the descriptive statistics and percentiles of the predicted conditional mean values from the beta regression model. The mean is 0.152 ($SD = 0.019$), with a variance of 0.000 (rounded to three decimals), indicating low dispersion. The skewness is 0.385, suggesting a slight asymmetry toward higher values, while the kurtosis is 2.082, indicating a relatively flat distribution. Percentiles show that the 1st percentile has a minimum value of 0.113, and the 99th percentile reaches 0.211. The median (50th percentile) is 0.151, meaning half of the observations fall at or below this value. These results confirm that the model's predictions are concentrated within a narrow range, with a slight skew toward higher values.

Figure 1 provides a descriptive overview of the sample of Venezuelan migrants included in the study. Men represent 49.4 % of the sample, while women account for 50.6 %. Regarding education, 37.1 % completed tertiary studies in Venezuela, and 3.8 % are pursuing additional studies in Peru. In terms of social integration and vulnerability, 24.9 % of respondents reported having experienced discrimination, while only 1.3 % reported participation in community social networks. Migrants have resided in Peru for an average of 8.6 months. These descriptive statistics provide context for the explanatory variables used in the regression model and highlight the heterogeneity of the sample in terms of education, social capital, and integration experiences.

3.3. Econometric model

The beta regression model was selected, due to its ability to handle proportional variables with strict upper and lower bounds, making it suitable for evaluating how independent variables influence job quality among Venezuelan migrants while accounting for the heterogeneity of their experiences in Peru (Ferrari & Cribari-Neto 2004, Smithson & Verkuilen 2006). The general specification of the model is:

$$JQI_i = \beta_0 + \sum_{k=1}^{n} \beta_k X_{ik} + \epsilon_i$$

Where:

JQI_i: Job Quality Index of individual i

β_0: model intercept

β_k : coefficients associated with the independent variables

X_{ik}: independent variables of individual i corresponding to predictor k

ϵ_i: error term

3.3.1. Job Quality Index (JQI)

The JQI is defined as a multidimensional indicator that integrates four critical dimensions of job quality: income, security, benefits, and job satisfaction. This index, based on the approach of Brummund *et al.* (2016), is expressed as a proportion within the range [0,1] but has been transformed to the range (0.0001, 0.9999) to meet the assumptions of the beta

model. This type of transformation is common in the analysis of dependent variables expressed as proportions or indices (Ferrari & Cribari-Neto 2004). The index is constructed using the following formula:

$$JQI = \{ \frac{JQI_{income} + JQI_{segurity} + JQI_{benefits} + JQI_{satisfaction}}{4}, \ 0,99999 \ if \ JQI_{income} \geq S/.843{,}60 \ 0{,}00001 \ if \ JQI_{income} < S/.843{,}60 \}$$

JQI_{income}: it indicates whether the respondent's labor income exceeds a monthly threshold of S/. 843.60 (Peruvian soles), which is approximately $ 222 at the reference exchange rate.

$JQI_{security}$: it reflects whether the respondent has a formal contract or, at least, six months of job.

$JQI_{benefits}$: it evaluates access to social benefits, such as health insurance, and pension contributions.

$JQI_{satisfaction}$: it represents the perception of job satisfaction with the primary job. Since the ENPOVE 2022 survey does not include a specific question on job satisfaction, it is assumed that workers are satisfied if they do not have another job or are not actively seeking a new one.

3.3.2. Independent variables and Index Construction

The explanatory variables include «demographic characteristics», «human capital», «cultural integration», and «experiences of discrimination». Table 5 («Summary of variables, definitions, and data sources») provides a detailed description of each variable, including its definition, scale, and data source:

Duration in Peru (Duration_in_Peru): measured in months, this variable represents the length of residence in the country. The literature suggests that longer stays enhance economic and cultural integration, facilitating labor market insertion (Esser 2004, Chiswick & Miller 2005).

Integration into Peruvian Culture: this index evaluates the migrant's cultural adaptation for economic and social integration in the host country. It is constructed using three binary questions from the ENPOVE 2022 survey, where each answer is coded as «1» (Yes) or

«0» (No). These questions assess identification with Peruvian culture, the perception of feeling like a stranger, and feelings of social isolation. The index is calculated by summing the responses and dividing by three, generating a score between 0 and 1. Higher values (closer to 1) indicate greater cultural integration into Peruvian society. This approach follows Berry's (1997) acculturation framework and Zimmermann *et al.*'s (2007) evidence on the role of cultural adaptation in reducing social barriers and improving migrants' labor market outcomes. It is calculated as follows:

$$Cultural\ integration = \frac{ICP\ (1 = Yes)\ +\ NSE\ (1 = Yes)\ +\ NSA\ (1 = No)}{3}$$

Where:

ICP: identification with Peruvian culture
NSE: not feeling like a stranger
NSA: not feeling isolated

Community Social Network Participation: this index measures the level of participation of Venezuelan migrants in community spaces or associations in their place of residence in Peru. Greater participation in social networks fosters social cohesion and reduces isolation, key elements for the migrant's economic and social success (Putnam 2000, Granovetter 1973). The index is based on eight possible associations that a migrant can select in question 707 of the ENPOVE 2022, which asks: «In the community or neighborhood where you live, do you participate in associations or community meeting spaces, such as» (see Table 4). Each answer takes values between «0» (he/she does not participate in any association) and «1» (he/she participates in all possible associations), and it is calculated as follows:

$$Participation\ in\ social\ networks\ = \frac{Number\ of\ selected\ associations}{8}$$

Where the associations considered are:

$Church$
$Neighborhood\ council$

Parent associations

Venezuelan association

Refugee association

Youth groups

Sports groups

Other institution

Discrimination Experience (Discrimination_Experience): a binary variable (= 1, if the migrant reports having experienced discrimination). Discrimination has been identified as a significant obstacle to economic integration (Heath & Cheung 2007).

Continuing Education (Continuing_Edu): this binary variable indicates whether the migrant continued their education in Peru (1 = Yes, 0 = No). Local education helps align human capital with labor market demands, improving employability and reducing the risk of overeducation (Dustmann & Glitz 2011).

Gender (Gender_i): a binary variable that takes the value of 1, if the migrant is male and 0 if female. Gender, as it influences employment opportunities and working conditions, reflects potential structural inequalities (Acker 1990, Blau & Kahn 2000). In the migration context, gender interacts with other factors, such as discrimination and cultural norms, shaping migrants' economic integration and job quality (Bastia & Piper 2024).

Educational Level in Venezuela (Edu_Level_Vene): this variable, normalized on a scale from 0 to 1, captures the level of education attained in both countries. This approach allows for an analysis of how human capital acquired in different contexts influences labor market outcomes (Becker 1964, Borjas 1999).

4

Results

The results are presented in Table 2. The duration of stay in the country (Duration), measured in months, shows a positive coefficient (0.0008078) but is not statistically significant (p = 0.912) (Table 2). This result suggests that the length of residence does not have a decisive effect on job quality, likely due to structural labor market barriers in Peru that hinder integration

regardless of the time spent in the country. Such barriers include bureaucratic processes related to the recognition of educational degrees and labor skill certification, which limit migrants' opportunities to access quality jobs. While informal employment accounts for 71.1 % of total jobs in Peru (INEI 2024), more than 70 % of Venezuelan migrants work informally (ILO 2021). Although informality is high for the general population, Venezuelan migrants are more likely to face additional constraints — such as lack of formal recognition of credentials, limited access to work permits, and discrimination —, that exacerbate their vulnerability in the informal sector (IOM 2022). These factors explain why informality can have a disproportionate impact on migrants despite similar aggregate rates.

In terms of cultural integration, the coefficient is positive and statistically significant ($0.0569, p = 0.037$). The positive sign indicates that greater cultural adaptation is associated with higher job quality. Migrants who adapt culturally can interact more effectively with the host society and labor market, facilitating access to formal and better-quality jobs.

Conversely, participation in community social networks shows a negative and significant coefficient ($-0.3307, p = 0.042$). The negative sign indicates that greater involvement in these networks is associated with lower job quality. Although such networks may help migrants secure initial employment, they are often concentrated in informal or precarious sectors, which limits access to better opportunities.

Regarding gender, the coefficient is positive and highly significant ($0.0658, p < 0.001$). The positive sign shows that being male is associated with higher job quality. This pattern reflects gender segmentation in the Peruvian labor market, where men are overrepresented in formal and better-paid sectors, while women are more frequently concentrated in lower-paid and less secure occupations.

Similarly, continuing education in Peru has a positive and significant coefficient ($0.0574, p = 0.015$). The positive sign indicates that pursuing further education in the host country is associated with improved job quality. Additional studies allow migrants to acquire skills valued locally, facilitating their insertion into better jobs and helping overcome barriers related to the non-recognition of foreign credentials.

Experiences of discrimination, on the other hand, show a negative and significant coefficient ($-0.0379, p = 0.019$). The negative sign indicates that migrants who report discrimination tend to have lower job quality, underscoring how exclusionary practices reduce access to good employment opportunities.

Finally, the educational level attained in Venezuela presents the strongest positive association with job quality ($0.4785, p < 0.001$). The positive sign indicates that higher

education in the country of origin is associated with better job quality in Peru. This finding emphasizes the relevance of prior human capital for labor market integration, even when formal degree recognition is limited.

Table 3 reports the marginal effects from the beta regression model for the JQI. These estimates show the average change in JQI associated with a one-unit variation in each explanatory variable, keeping the others constant. As noted by Cameron and Trivedi (2005), marginal effects provide an intuitive interpretation of results in nonlinear models, such as beta regression.

Regarding duration in Peru, the estimated marginal effect is positive but small (0.0001038) and not statistically significant (p = 0.912; 95 % *CI* = –0.00173 to 0.00194), indicating that an additional month of residence is not associated with a meaningful change in job quality.

In contrast, cultural integration has a positive and significant marginal effect (0.0073, p = 0.037; 95 % *CI* = 0.0004 to 0.0142), showing that a one-unit increase in cultural adaptation is associated with an average rise of 0.73 % in the JQI. However, community social networks exhibit a negative and significant marginal effect (–0.0425, p = 0.042; 95 % *CI* = –0.0836 to –0.0014), indicating that greater participation in these networks is associated with an average reduction of 4.25 % in the JQI.

Similarly, gender has a positive and highly significant marginal effect (0.0085, $p <$ 0.001; 95 % *CI* = 0.0051 to 0.0118), meaning that being male, compared to female, is associated with an average increase of 0.84 % in the JQI. Continuing education in Peru also shows a positive and significant marginal effect (0.0074, p = 0.015; 95 % *CI* = 0.0014 to 0.0133), which implies that migrants pursuing further studies in the host country have, on average, a 0.74 % higher JQI.

Moreover, discrimination experience presents a negative and significant marginal effect (–0.0049, p = 0.019; 95% *CI* = –0.0089 to –0.0008), suggesting that migrants reporting discrimination tend to have an average 0.49 % lower JQI.

Continuing, the educational level attained in Venezuela shows the strongest positive and highly significant marginal effect (0.0615, $p <$ 0.001; 95 % *CI* = 0.0547 to 0.0683), indicating that migrants with higher education levels have, on average, a 6.15 % higher JQI.

Finally, the educational level attained in Venezuela (Education Level Venezuela) has a positive and highly significant marginal effect (0.061511, $p <$ 0.001; 95 % *CI:* 0.054689 to 0.068333), indicating that migrants with higher educational levels experience an average increase of 6.15 % in JQI (Table 3).

Figure 1 graphically depicts these marginal effects along with their 95 % confidence intervals. Points represent the estimated average change in the JQI for each explanatory variable, and vertical lines correspond to confidence intervals. Variables such as Education Level Venezuela and Gender exhibit significant positive effects, while Community Social Networks shows a significant negative effect. In contrast, Duration has a confidence interval that includes zero, confirming its lack of statistical significance.

4.1. Outlier identification

Outliers in the residuals were identified using the two-standard-deviation criterion, a standard statistical practice. The residuals' mean ($\mu = 0.1520$) and standard deviation ($\sigma = 0.0193$) defined the limits [0.1134, 0.2118] (Table 1 and Figure 3). Observations with absolute residuals exceeding these limits were marked as «outliers», resulting in 303 cases (2.42 % of the 12,487 observations). Given that this proportion is below the 5 % threshold, these extreme values do not significantly impact model robustness (Kutner *et al.* 2005). Figure 3 further evaluates residual normality through a Q-Q Plot, comparing observed and theoretical quantiles. Although strict normality isn't required for beta regression (Ferrari & Cribari-Neto 2004), analyzing residual patterns helps detect issues like heteroscedasticity or omitted variables. The residuals closely follow the Q-Q Plot's diagonal reference line, indicating no systematic deviations or influential outliers. Thus, the model is stable, adequately specified, and its estimated coefficients are reliable for inference and policy recommendations.

Figure 4 presents the deviance residuals as a function of the fitted values to evaluate the adequacy of the link function selected in the beta regression model, allowing for an assessment of the correspondence between residuals and model predictions to verify the link appropriateness assumption (Cribari-Neto & Zeileis 2010). The distribution of points shows that most residuals follow a pattern close to the main line, without significant systematic dispersion. While some dispersed values are identified (approximately 2.43 % of the total observations), their proportion remains low (below 5 %) relative to the sample size (12,487 observations, Table 1) (Figure 4). This suggests that these outliers do not substantially impact on the overall validity of the model. Therefore, the residuals do not indicate a poor model fit. The linear relationship between the fitted values and residuals suggests that the link function adequately captures the relationship between the predictor variables and the mean of the dependent variable (JQI_1). Furthermore, the reduced dispersion around the prediction line supports this conclusion, reinforcing the validity of the selected link function. Based on this

analysis, it is concluded that the link appropriateness assumption is met. The selected link function is suitable for modeling the relationship between the explanatory variables and the dependent variable in this beta regression model, effectively capturing the intrinsic heterogeneity of the data.

Figure 5 presents the scaled residuals as a function of the predicted values to evaluate the adequacy of the beta regression model and diagnose potential heteroscedasticity issues or model misfit. This analysis verifies the relationship between the residuals and the model predictions, assessing their consistency with the assumptions of the beta model (Ferrari & Cribari-Neto 2004). Scaled residuals are obtained by adjusting the raw residuals based on the predicted variance, facilitating the identification of irregularities in the model fit.

Most residuals are concentrated in well-defined horizontal bands, without displaying a significant systematic pattern concerning the predicted values (μ). Although some points with high residuals (values greater than 2) are identified, they represent a small percentage of the total (approximately 2.14 % out of 12,487 observations), which does not compromise the overall validity of the model (Figure 5). This behavior is characteristic of beta models and does not indicate structural issues.

The presence of horizontal bands suggests that the model adequately captures the data structure, fulfilling the fundamental assumptions. The stability in the dispersion of the scaled residuals indicates that there is no significant evidence of heteroscedasticity, reinforcing the model's reliability and the validity of the estimated coefficients (Figure 5).

Figure 6 presents the deviance residuals as a function of the observation indices to evaluate the adequacy of the beta regression model and diagnose potential specification issues or outliers. This analysis verifies the relationship between the residuals and individual observations, assessing its consistency with the assumptions of the beta model (Ferrari & Cribari-Neto 2004). Deviance residuals reflect the difference between observed and predicted values, adjusted for their relative contribution to the total error.

The distribution of points in the graph shows that most residuals are concentrated within the range (0, 0.2), without displaying a significant systematic pattern concerning the observation indices (Figure 6). Although two points with high deviance residuals are identified (around indices 450 and 500), they represent a very small percentage of the total observations (approximately 0.016 %), which does not compromise the overall validity of the model (Figure 6). These high residuals may correspond to observations with unusual characteristics but do not significantly affect the model's overall stability.

5

Discussion

The findings from the beta regression model and marginal effects analysis provide evidence on the determinants of job quality (JQI) among Venezuelan migrants in Peru. The educational level attained in Venezuela shows the strongest positive association with JQI, highlighting the role of pre-migration human capital in, facilitating access to better jobs. This result aligns with Becker's human capital theory, which emphasizes education as an investment that enhances productivity and labor market outcomes. Similar patterns have been documented by Melo-Vega *et al.* (2023) and Asencios and Castellares (2020), who found that Venezuelan migrants in Peru tend to be more educated than locals but face occupational downgrading and wage penalties, due to limited recognition of foreign credentials. These findings reinforce that higher education provides transferable skills, yet institutional barriers prevent their full utilization in the host labor market.

Regarding the duration of stay, the absence of a significant association with JQI indicates that time alone is insufficient to overcome structural labor market barriers. This outcome is consistent with Piore's (1979) segmentation theory, which argues that migrants are concentrated in secondary labor markets, characterized by instability and low wages. Studies such as Jacobs *et al.* (2020) and Dalmonte *et al.* (2024) confirm that, even after several years in the host country, migrants experience persistent difficulties transitioning to primary labor markets, due to legal restrictions, limited credential recognition, and discriminatory practices. Cultural integration presents a positive and significant association with job quality, supporting Bourdieu's notion that cultural capital facilitates the recognition of migrants' competencies and Putnam's view of bridging capital as a mechanism for creating connections with broader networks. This result is consistent with Wahlbeck and Fortelius (2019) and Nohl *et al.* (2014), who highlight that host-country language proficiency and cultural adaptation enhance access to formal employment and mitigate symbolic exclusion.

By contrast, participation in community social networks is negatively associated with job quality. Although these networks can provide initial employment opportunities, they tend to be limited to low-quality or informal sectors. This interpretation aligns with Granovetter's (1973) theory of weak ties, which emphasizes that less intimate connections are more effective for accessing diverse information and better job opportunities. Similarly, Battisti *et al.* (2021) showed that migrants in Germany with larger co-ethnic networks had higher initial

employment probabilities, but this advantage diminished over time as migrants in areas with smaller networks invested more in host-country human capital. The positive association between continuing education in Peru and JQI underscores the value of host-country human capital investments. Acquiring local credentials can offset disadvantages related to the non-recognition of foreign qualifications, as also found by Nohl *et al.* (2014). These findings suggest that public policies supporting migrants' access to education and training could improve their labor market outcomes and reduce segmentation. Experiences of discrimination, which are negatively associated with job quality, reflect the intersection of structural barriers based on nationality and gender. This result is consistent with Crenshaw's (1989) intersectionality framework and with evidence from Olivieri *et al.* (2020), who reported that Venezuelan migrants in Ecuador, despite being more educated, experience higher informality rates, and lower earnings, compared to locals. Discrimination thus remains a key factor limiting migrants' ability to leverage their human and social capital for quality employment.

Finally, the positive association between «gender» and «job quality» indicates persistent structural inequalities in the Peruvian labor market. Men, who are overrepresented in better-paid sectors such as construction and manufacturing, are more likely to access quality jobs. This dynamic mirrors findings from Benería (2003), which documented the concentration of women in precarious occupations such as domestic work, reducing their opportunities for formal and better-paid employment.

6

Conclusions

The main objective of this study was to identify the factors associated with the JQI among Venezuelan migrants in Peru through the application of a beta regression model and marginal effects analysis. The results provide evidence that pre-migration human capital, particularly education attained in Venezuela, is strongly associated with better job quality. This highlights the value of educational investment before migration and suggests that policies facilitating the recognition of foreign credentials would allow migrants to fully leverage their skills and reduce occupational downgrading.

Cultural integration also shows a positive association with job quality, emphasizing the importance of adapting to host-country norms and values for successful labor market insertion.

This finding supports the promotion of cultural inclusion programs and initiatives that strengthen migrants' interaction with local communities and institutions.

Continuing education in Peru emerges as another factor positively linked to job quality, indicating that acquiring local qualifications improves employability and reduces the disadvantages linked to non-recognition of foreign degrees. Policies that expand affordable access to education and vocational training for migrants would therefore be essential to enhance their competitiveness in the labor market.

Conversely, participation in community social networks is negatively associated with job quality. While these networks may facilitate initial job access, they are often limited to informal or low-quality employment opportunities. Strengthening job intermediation services and expanding formal employment networks could help migrants move beyond low-wage sectors.

Experiences of discrimination negatively affect job quality, reinforcing the need for anti-discrimination measures in the workplace and greater enforcement of labor rights. Policies that promote awareness campaigns and strengthen institutional mechanisms for reporting discrimination could mitigate these barriers and foster inclusion. Gender differences persist, with men more likely to access better-quality jobs, while women remain concentrated in precarious sectors. Gender-sensitive labor policies, including targeted training and programs to facilitate women's access to formal employment, are necessary to address these disparities.

Finally, the lack of a significant association between the length of stay in Peru and job quality indicates that time alone does not overcome structural barriers such as informality, credential non-recognition, and discrimination. This underscores the importance of proactive public policies that go beyond passive integration, combining labor formalization strategies with measures to facilitate migrants' credential recognition and educational advancement.

This research is subject to certain limitations. The reliance on cross-sectional data restricts the ability to establish causal relationships or to capture changes in job quality over time. In addition, the findings are specific to the Peruvian context and may not be directly generalizable to countries with different institutional and economic conditions.

Building on these considerations, future research should broaden the scope of analysis to cover different time horizons and contexts, employing methodologies capable of capturing both short- and long-term dynamics, such as ARDL models or VAR models with variance decomposition. Comparative studies across Latin American countries with similar migration patterns would also provide valuable insights into how institutional contexts shape migrants' labor market outcomes. Strengthening this empirical foundation would support the design of

policies aimed at developing human capital, reducing structural barriers, and promoting inclusive labor market integration, ultimately expanding migrants' opportunities for economic stability and a dignified quality of life.

7

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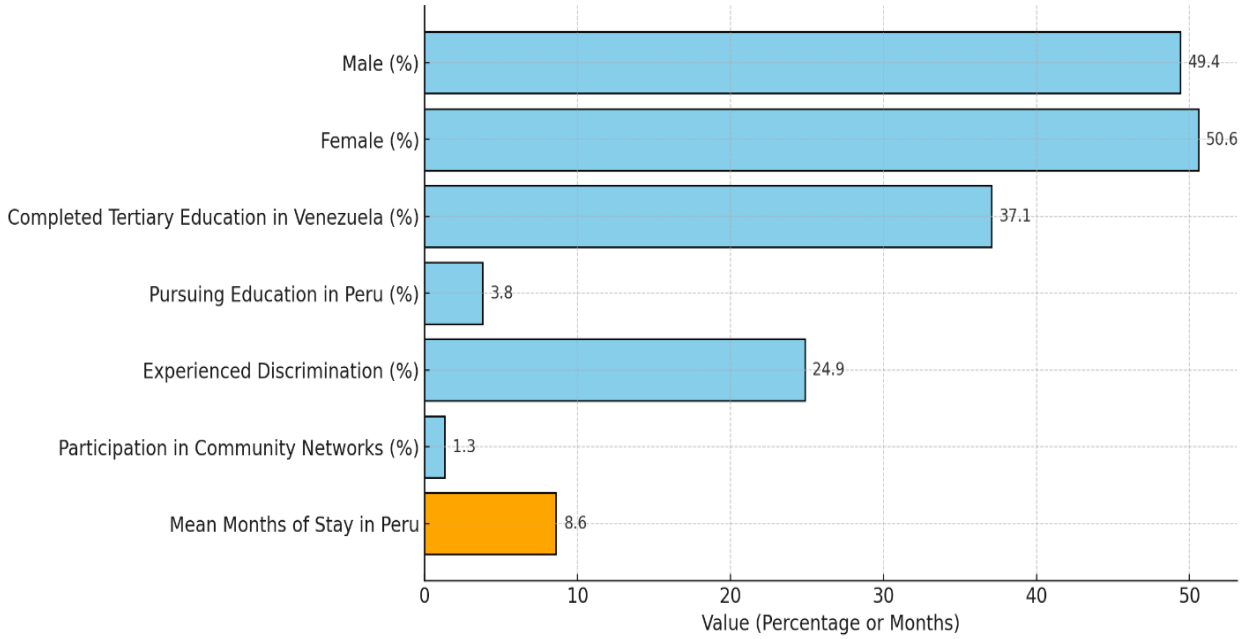
8

Annexes

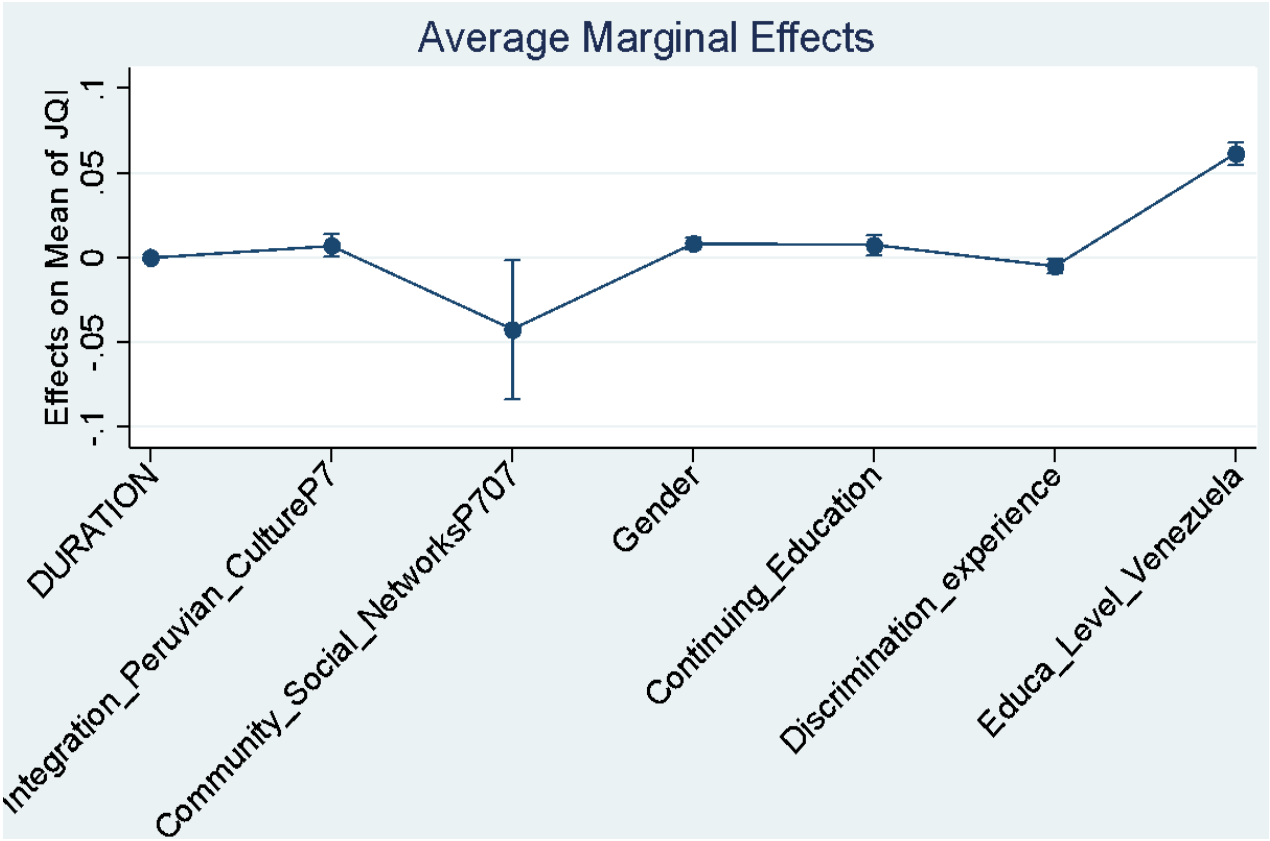


Note: location in the text: pp. 15-16.

Figure 1

Summary of key attributes of Venezuelan migrants

Source: own elaboration.

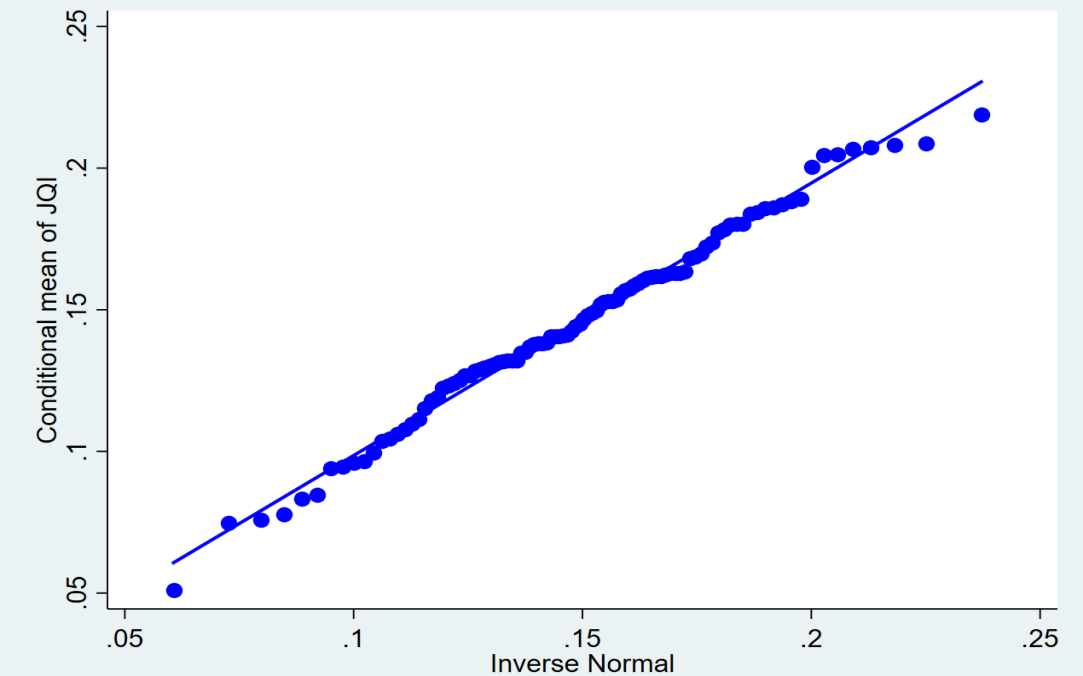


Note: location in the text: pp. 21-22.

Figure 2

Average marginal effects on the Job Quality Index (JQI)

Source: own elaboration.

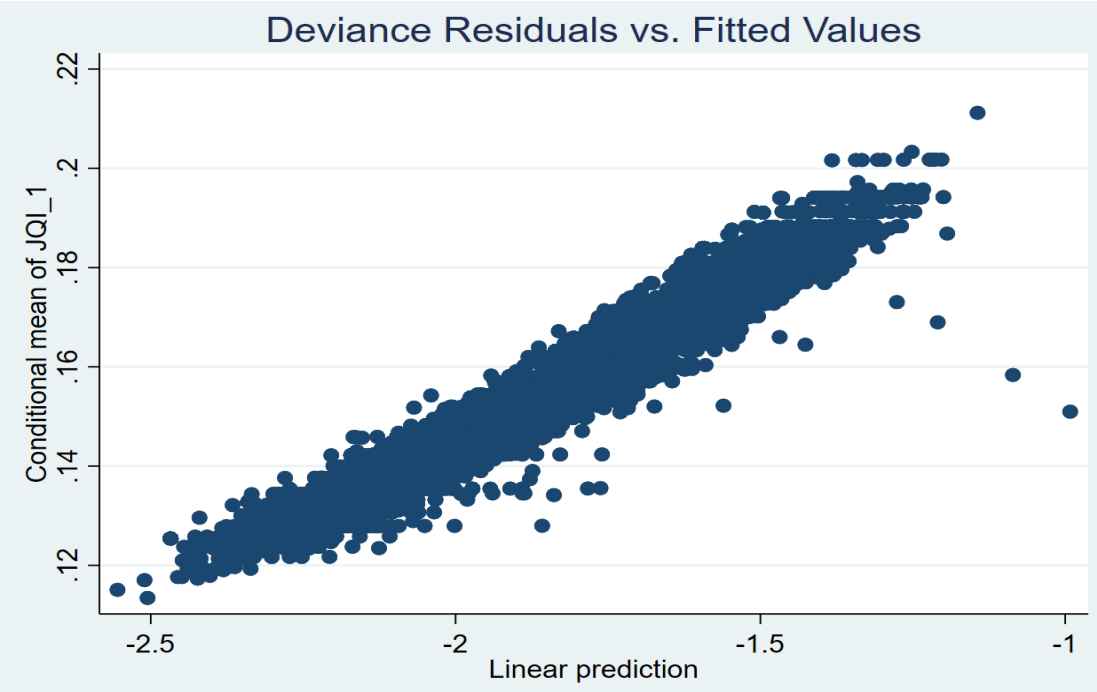


Note: location in the text: p. 22.

Figure 3

Normality of residuals

Source: own elaboration.

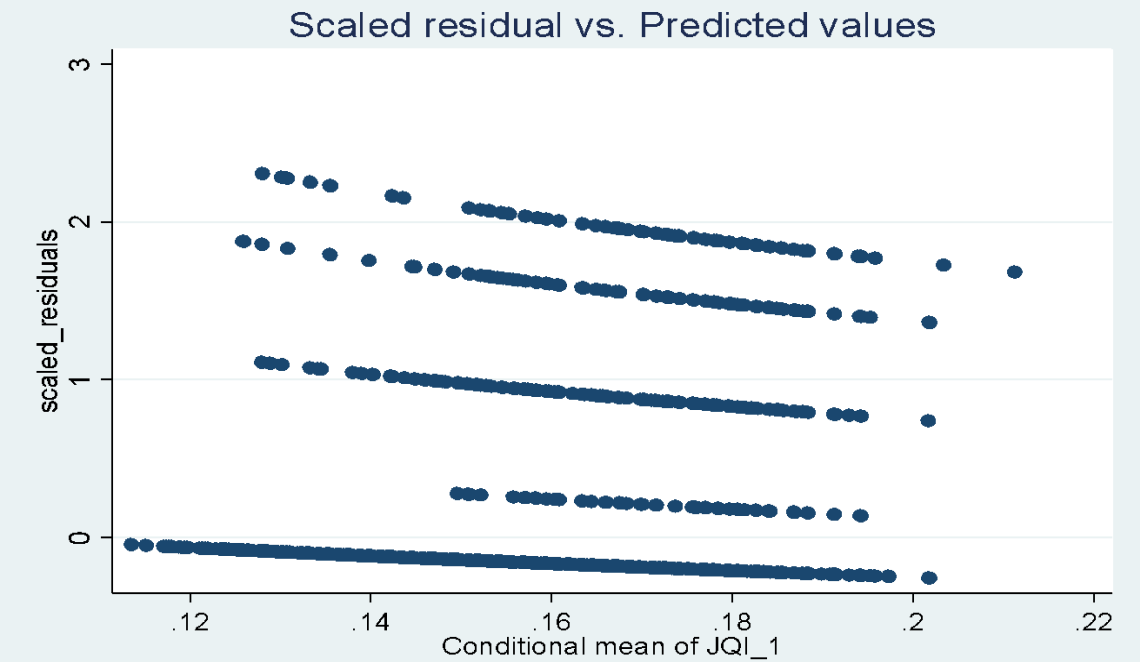


Note: location in the text: pp. 22-23.

Figure 4

Link appropriateness

Source: own elaboration.

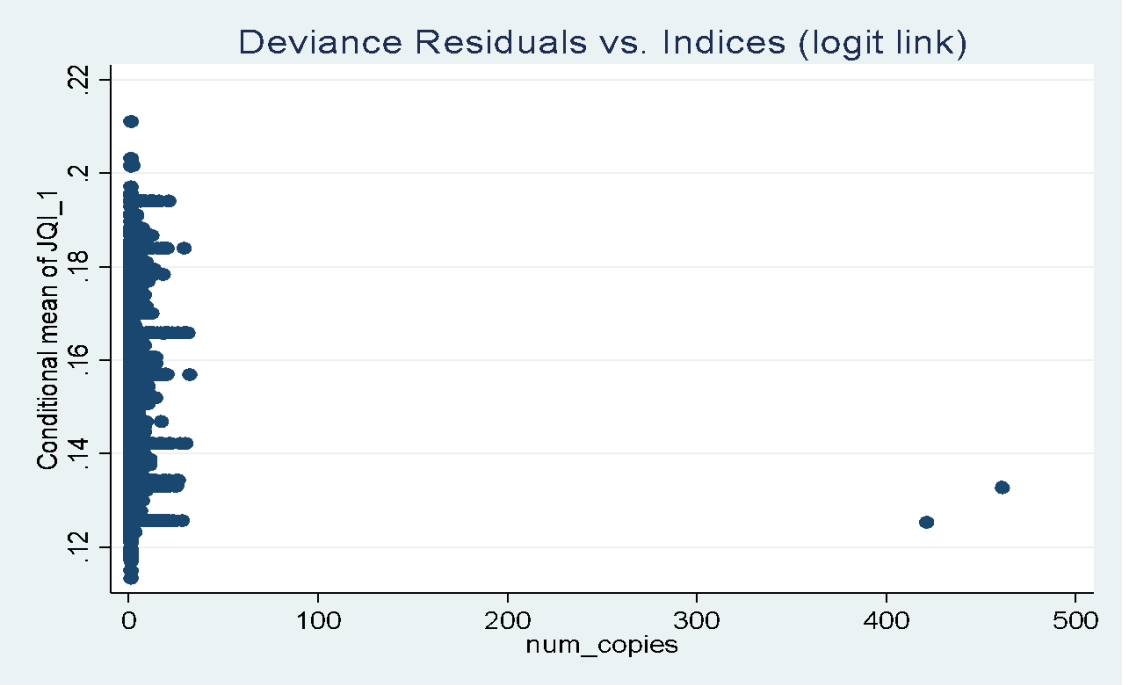


Note: location in the text: p. 23.

Figure 5

Scaled residuals vs. predicted values of the beta model

Source: own elaboration.



Note: location in the text: pp. 23-24.

Figure 6

Deviance residuals vs. observation indices (logit link)

Source: own elaboration.

Statistic	**Value**
Number of observations (Obs.)	12,487
Mean	0.1520
Standard deviation (Std. Dev.)	0.0193
Variance	0.0003735
Skewness	0.3849
Kurtosis	2.0815

Percentiles	**Value**
1 % (Smallest)	0.1134

5 %	0.1257
10 %	0.1276
25 %	0.1344
50 % (Median)	0.1508
75 %	0.1659
90 %	0.1811
95 %	0.1856
99 % (Largest)	0.2112

Note: location in the text: p. 13.

Table 1

Distribution and summary statistics of the values

Source: own elaboration.

Beta regression	**Number of obs**	**=**	**12,487**
	LR chi2(7)	=	470.04
	Prob > chi2	=	0.0000

JQI	**Coef.**	**Std. Err.**	**z**	**P > z**
JQI				
Duration	0.0008078	0.0072786	0.11	0.912
Integration Peruvian Culture	0.0568963	0.0273026	2.08	0.037
Community Social Networks	–0.330693	0.162969	–2.03	0.042

Gender	0.065778	0.013395	4.91	0.000
Continuing Education	0.057377	0.023616	2.43	0.015
Discrimination Experience	–0.037930	0.016186	–2.34	0.019
Education Level Venezuela	0.478547	0.027060	17.68	0.000
_cons	–1.98005	0.031633	–62.59	0.000
Scale				
_cons	2.367607	.0126897	186.58	0.000

Note: location in the text: pp. 17-19.

Table 2

Results of the beta regression

Source: own elaboration.

JQI			**Delta method**		
Variable	**Dy/dx**	**Std. Err.**	**P > z**	**Lower 95 % CI**	**Upper 95 % CI**
Duration	0.000104	0.000936	0.912	–0.001730	0.001938
Integration Peruvian Culture	0.007313	0.003509	0.037	0.000435	0.014192
Community Social Networks	–0.042506	0.020948	0.042	–0.083564	–0.001449
Gender	0.008455	0.001722	0.000	0.005080	0.011830
Continuing Education	0.007375	0.003036	0.015	0.001425	0.013325
Discrimination Experience	–0.004875	0.002081	0.019	–0.008953	–0.000797
Education Level Venezuela	0.061511	0.003480	0.000	0.054689	0.068333

Note: location in the text: pp. 19-21.

Table 3

Results of marginal effects

Source: own elaboration.

«In the community or neighborhood where you live, do you participate in associations or community meeting spaces, such as»

Code	Association type	Frequency
1	Church	711
2	Neighborhood council	79
3	Parent associations	36
4	Venezuelan association	29
5	Refugee association	4
6	Youth groups	30
7	Sports groups	416
8	Other institution (specify)	20
9	He/she does not participate	8982

Note: location in the text: p. 18.

Table 4

Participation of migrants in community associations (Question 707, ENPOVE 2022)

Source: own elaboration.

Variable/Index	Definition	Values / Scale	Source
JQI	Job Quality Index, computed as the simple average of four binary components: JQI_income, JQI_security, JQI_benefits, and JQI_satisfaction. The index is scaled between 0.0001 and 0.9999 to meet beta regression assumptions	Continuous (0.0001-0.9999)	ENPOVE 2022
JQI_income	Binary indicator equal to 1 if the respondent's monthly labor income is greater than or equal to S/. 843.60 (≈ $ 222); 0 otherwise. The threshold corresponds to the Ethical Poverty Line (Edward 2006)	0/1	ENPOVE 2022
JQI_security	Binary indicator equal to 1 if the respondent has a formal contract or at least six months of job tenure; 0 otherwise	0/1	ENPOVE 2022
JQI_benefits	Binary indicator equal to 1 if the respondent has access to social benefits, such as health insurance or pension contributions; 0 otherwise	0/1	ENPOVE 2022
JQI_satisfaction	Binary indicator equal to 1 if the respondent neither holds a secondary job nor is actively seeking another job, used as a proxy for job satisfaction, due to the absence of a direct question in ENPOVE 2022	0/1	ENPOVE 2022
Duration	Number of months the migrant has resided in Peru	Continuous (months)	ENPOVE 2022
Gender	Binary variable taking the value 1 = Male, 0 = Female	0/1	ENPOVE 2022
EducationVen	Highest educational level attained in Venezuela; recoded as 1 = tertiary education or higher, 0 = otherwise	0/1	ENPOVE 2022
Continuing_Education	Binary variable equal to 1 if the respondent is currently studying in Peru; 0 otherwise	0/1	ENPOVE 2022
Discrimination	Binary variable equal to 1 if the respondent reported having experienced discrimination due to nationality, accent, or migrant status; 0 otherwise	0/1	ENPOVE 2022
Community_Social_Networks	Index of participation in social/community networks, calculated as the number of selected associations divided by 8. The associations are: (1) Church, (2) Neighborhood council, (3) Parent associations, (4) Venezuelan association, (5) Refugee association, (6) Youth groups, (7) Sports groups, (8) Other institution	Discrete (0, 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8, 1)	ENPOVE 2022
Integration_Culture	Index of cultural integration, calculated as the mean of three binary items: identification with Peruvian culture (ICP = 1 if Yes), not feeling like a stranger (NSE = 1 if Yes), and not feeling socially isolated (NSA = 1 if No). The final value is obtained by summing these three components and dividing by 3	Discrete (0, 1/3, 2/3, 1)	ENPOVE 2022

Note: location in the text: p. 17.

Table 5

Summary of variables, definitions, and data sources

Source: own elaboration.