

ORIGINAL ARTICLE

Influence of education on the level of quality of young salaried employment in Metropolitan Lima, 2022.

Influencia de la educación sobre el nivel de calidad del empleo asalariado joven en Lima Metropolitana, 2022

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Abstract

The connection between education and job quality is a topic of growing interest for labor market dynamics, since low quality salaried jobs can limit the development of the potential capabilities of the young workforce and, with it, the opportunity to move up the social pyramid structure. The level of quality of salaried employment is a multidimensional phenomenon; to measure it, a synthetic index was constructed from the perspective of the working class, considering the characteristics of the job. The objective of this article is to analyze the influence of the level of education on the level of quality of employment of the young salaried population, according to the size of the company, in Metropolitan Lima in the year 2022, from Amartya Sen's theory of human capabilities. Regarding the methodology, we used data from the National Household Survey, information provided by the National Institute of Statistics and Informatics for the year 2022. The final sample size was 3 552 observations. In addition, a partial proportional odds ordinal logit regression model with robust variance was fitted. Among the main results, it was obtained that salaried employment was mostly of low quality in Metropolitan Lima in the year 2022. In addition, it was verified that the size of the firm and the level of education have a direct relationship with the level of quality of salaried employment. ($p < 0.05$). The study concludes that the level of education is a key factor in the level of quality of salaried employment, but its influence depends on other conversion factors (gender, poor) that the young labor force possesses and on the size of the firm.

Keywords: Education, Salaried employment, Labor market, Ordinal logit regression, Company size, Theory of capabilities.

Thematic classification: J2: Labor demand and supply. O15: Human development.

Resumen

La conexión entre educación y calidad del empleo es un tema de creciente interés para la dinámica del mercado laboral, puesto que los empleos asalariados de baja calidad pueden limitar el desarrollo de las potenciales capacidades de la fuerza de trabajo joven y, con ello, la oportunidad de ascender en la estructura de la pirámide social. El nivel de calidad del empleo asalariado es un fenómeno multidimensional; para medirlo se construyó un índice sintético desde la perspectiva de la clase trabajadora, considerando las características del puesto de trabajo. El objetivo de este artículo es analizar la influencia del nivel de educación sobre el nivel de calidad del empleo de la población asalariada joven, según el tamaño de la empresa, en Lima Metropolitana en el año

2022, desde la teoría de las capacidades humanas de Amartya Sen. En relación con la metodología, se empleó datos de la Encuesta Nacional de Hogares, información proporcionada por el Instituto Nacional de Estadística e Informática para el año 2022. El tamaño de la muestra final fue de 3 552 observaciones. Además, se ajustó un modelo de regresión logit ordinal de probabilidades proporcionales parciales con varianza robusta. Entre los principales resultados, se obtuvo que el empleo asalariado fue mayoritariamente de baja calidad en Lima Metropolitana en el año 2022. Además, se verificó que el tamaño de la empresa y el nivel de educación tienen una relación directa con el nivel de calidad del empleo asalariado ($p < 0.05$). El estudio concluye que el nivel de educación es un factor clave en el nivel de calidad del empleo asalariado, pero su influencia depende de otros factores de conversión (sexo, pobre) que posee la fuerza de trabajo joven y del tamaño de la empresa.

Palabras clave: Educación, empleo asalariado, mercado laboral, regresión logit ordinal, tamaño de empresa, teoría de las capacidades.

1. Introduction

Low-quality wage employment negatively affects the well-being of those who have it (UNECE, 2022) because it limits the development of their potential capacities to be and to do (Pineda and Acosta, 2011), reducing the possibility of moving up the structure of the social pyramid and achieving greater levels of freedom.

The high deficit of decent employment continues to be one of the main problems affecting the Peruvian working population. (MTPE, 2021). The remarkable growth of 4.9 % per year on average of the gross domestic product (GDP) during the period 2001-2019 (BCRP, 2023) was not enough to reduce labor informality (Ayelén and Hernán, 2019) which, in 2019, before the coronavirus pandemic, affected more than 70 % of the total economically active employed population (EAPEO) at the national level (INEI, 2021). In this context, it is stated that the pandemic further worsened the employment situation in the country, mainly for young people and women (IPE, 2021; Morrison, 2021; OECD, 2020).

According to ECLAC (2023), the functioning of the labor market can generate economically positive but socially negative results when it becomes a discriminatory environment. In Peru, after the neoliberal reforms of the 1990s, which among other things imposed the flexibilization of labor relations (Infante and Vega, 2001; Tostes and Villavicencio, 2012) the labor market has become heterogeneous and fragmented (Chacaltana, 2016), but functional to the type of "primary export growth, based on precarious jobs and wages" (Jiménez, 2016, p. 96). As a result, Peru managed to maintain a low unemployment rate at the cost of enduring a high labor informality rate (IPE, 2021; OIT, 2013).

In Metropolitan Lima (made up of the province of Lima and the Constitutional Province of Callao), the deterioration of the level of employment quality was manifested via the growth of informal employment that went from 56.7 % in 2017 to 62.0 % in 2021. Likewise, in 2021, it was reported that 36 out of every 100 people were underemployed, 34 out of every 100 were in vulnerable employment and 19 out of every 100 were found to be working poor (MTPE, 2022). This situation reinforces the hypothesis that there are structural factors that condition the level of quality of salaried jobs, but impact differentially on the labor force at the individual level (Pérez Sáinz, 2016) in daily life, since microeconomic factors linked to labor market supply and demand modulate this impact to different degrees.

On the supply side, education is one of the most important assets that people possess (Iguñiz and Barrantes, 2004), because it allows them to acquire and develop aptitude, precision and speed in the workplace (Marx, 1987). Thus, the labor force becomes more qualified; that is, the quality level of the

labor force (NCFT) increases. With this, the person has a greater probability of accessing a better-quality job (Ñiquen, 2019; Tenorio, 2020), since in the labor market people offer their labor force in exchange for remuneration and the employer is interested in selecting the best qualified and skilled (Jaques, 1968) although this selection may be distorted by social prejudices that end up reinforcing various forms of labor discrimination associated with sex, age, race, place of origin, socioeconomic level, etc.

In relation to the above, Herrera and Hidalgo (2002), found that young people, women and workers in microenterprises in Metropolitan Lima were more likely to lose their jobs and to remain unemployed longer. Years later, Garavito (2010) found that women and young people in Metropolitan Lima were more likely to fall into low-quality employment; that is, they are more vulnerable. For their part, Barrantes and Matos (2019) found that in the case of being a young woman, one suffers a double marginalization and this limits her opportunities to enter the labor market and/or expands her possibilities of occupying a low-quality job. Similarly, with regard to a female worker, Ñiquen (2019) verified that a worker is 4.2 % less likely to have a very poor quality job. In sum, there are factors inherent to the labor force that would be modulating, for or against, the influence of education on the level of job quality of each individual. In this sense, Barrantes and Matos (2019) recognize that education, despite being an important factor for labor market insertion, is strongly limited by poverty, being a woman and/or being young.

To understand the dynamics of employment, the business structure must also be evaluated (Jaramillo and Campos, 2020). (Jaramillo and Campos, 2020) represented by labor demand. In 2020, of the total number of formal companies at the national level, 46.2 % operated in Metropolitan Lima. In addition, it is known that the capital concentrated 72.5 % of the total number of large and medium-sized companies at the national level; however, this percentage only represented 1.0 % of the total number of existing companies in Metropolitan Lima, since 94.3 % are micro companies and 4.4 % are small companies. Of these, 73.3 % are legally organized as natural persons and almost 80 % carry out activities in the tertiary economy; that is, they are engaged in commerce and/or services. Only 8.5 % are engaged in industrial manufacturing (INEI, 2022b). Consequently, employment is concentrated in smaller firms, which are characterized by offering low quality jobs and demand low-skill labor (Fernandez et al., 2021).

Thus, the size of the firm becomes a relevant factor in explaining the level of quality of salaried employment (NCEA) through the job. According to Krugman et al. (2013) being employed means occupying a job ; therefore, there is a direct relationship between the level of job quality (NCPT) and the NCEA (Infante and Vega, 2001; Weller, 2012) The relationship is mediated by the institutional framework and labor legislation (Villacorta, 2012). (Villacorta, 2012). Therefore, it is plausible to measure NCEA by assessing job characteristics (Farné, 2003; Gamero, 2010) but without losing sight of the social subject responsible for designing it: the employer.

Quality level of salaried employment

The Marxist tradition holds that quality is always quality of something; ergo, it possesses an objective reality that can be grasped abstractly and/or concretely by thought. In this sense, the quality of an object can be analyzed in two ways: quality as-being and quality as-having ; the latter represents the degree or level of quality. In the field of political economy, the quality is associated with the use-value of the commodity (Marx, 1987). Quality as-being verifies whether or not the commodity functions for what it was created for, while the level of quality has to do with its degree of functioning (how well it functions: good, regular, bad). However, since the capitalist's concern is to sell his merchandise, its use value must be guaranteed in advance; therefore, he is not concerned with convincing the consumer that his merchandise works, but rather that it works better than any other. In this framework, the literature reviewed on quality emphasizes its quantitative aspect: quality-as-having or level of quality.

Thus, its qualitative aspect is concealed and the quality level is treated as synonymous with quality, a confusion reinforced by routine commercial advertising.

The labor force is a special commodity (Ruesga et al., 2014) and it is in the employer's interest that it works as well as possible; it means, it seeks that the workforce possesses the highest level of quality as a requirement for employing it, although not necessarily in a job of similar quality. The level of quality of wage employment (NCEA) is a multidimensional phenomenon, because it involves a multiplicity of factors; and multifaceted, because it begins in the sphere of circulation (buying and selling of labor power), is realized in the sphere of production (employment of the labor force) and has repercussions on the social life of individuals. As a result, the NCEA is a variable that cannot be directly observed; it is therefore necessary to construct a synthetic index to measure it. (Farné, 2003; Gamero, 2010). There are two perspectives for doing so: that of the working class and that of the capitalist or employing class (Arranz et al., 2016; Barrantes and Matos, 2019; Castro-Escobar and Serna-Gómez, 2016; Farné et al., 2012; Garavito, 2010; Infante and Vega, 2001; Martínez, 2012; Merino et al., 2012). Similarly, it is argued that it is possible to study the NCEA at the macroeconomic level. (Iglesias et al., 2010) or microeconomic (Pérez and Castro, 2017). Likewise, there are three approaches to measure the level of quality: 1) through objective indicators inherent to the object to be measured, 2) through subjective indicators related to the perception, satisfaction, preference and/or utility that the subject has of the object, and 3) through a combination of the two (Gómez García et al., 2018).

Employment is defined as work performed in exchange for an income. (Levaggi, 2004). Legally, it can be classified as self-employment and dependent employment; however, the latter may be mediated by a labor contract or a civil contract. Salaried employment is governed by labor regulations; therefore, it must offer an employment contract for the hired person to work a legally determined working day in exchange for a salary and social security (health insurance and affiliation to a pension system). Likewise, this type of employment is characterized by maintaining a hierarchical power of the employer over the worker. (Casale, 2011). Given that before offering a job, the job must be created, an objective approach is followed to measure the level of quality of salaried employment; that is, combining objective indicators inherent to the job. To this end, the methodology proposed by Farné (2003) was applied.

Theory of capabilities

The theory of human capabilities proposed by Sen (2000) argues that individual well-being does not depend on the things a person accumulates, but on his or her ability to obtain and use them. Thus, the development of capabilities would allow people to be more productive, as long as society minimally guarantees the main instrumental freedoms in the political, economic and social spheres. According to Vergara (2019) the potential capabilities of a person could convert the various resources into performances or results, as long as said person has sufficient conversion factors and these are deployed in an appropriate social context (Urquijo, 2014).

In this framework, the individual characteristics of the salaried population, such as sex, age and poverty status, are proposed as conversion factors. The resource they possess is salaried employment, the performance or outcome is the level of quality of each of their jobs and the context will be represented by the size of the firm. The only restriction in this scheme is that the employed labor force not could act by free will or self-interest on the salaried employment (resource), since once employed, the conversion factors are subordinated to the objectives and characteristics of the company. Therefore, we seek to analyze the influence of the level of education on the level of quality of employment of the young salaried population, according to the size of the company, in Metropolitan Lima, applying the theory of human capabilities.

2. Materials and Methods

The data collected come from modules 02 (Characteristics of household members), 03 (Education), 04 (Health), 05 (Employment and income) and 34 (Summaries) of the National Household Survey (ENAH), information provided by the National Institute of Statistics and Informatics (INEI) for the year 2022, which is available on its virtual platform (<https://proyectos.inei.gob.pe/microdatos/>). The type of sample is probabilistic, area-based, stratified, multistage and independent, with a confidence level of 95% (INEI, 2022a). In addition, the population is composed of household members between 14 and 65 years of age, with a salaried job in Metropolitan Lima, comprising the Province of Lima (43 districts) and the Constitutional Province of Callao, in the year 2022.

By merging the modules, we obtained a sample of 86 148 observations. In order to obtain the final sample size, we excluded those who: 1) do not have an informant code, 2) are not residents of the household, 3) were not employed in the reference period, 4) are not salaried workers (workers and employees), 5) do not reside in Metropolitan Lima, 6) have a salary equal to zero, 7) have zero hours worked during the week, and 8) are under 14 and over 65 years of age. Therefore, the final sample size was 3 552 observations.

Regarding the methods; first, the quality index of salaried employment (ICEA) was calculated using the methodology proposed by Farné (2003); that is, from the perspective of the working class, combining five ordinal qualitative indicators linked to the job: (a) employment contract (1 no contract, 2 temporary contract, 3 permanent contract), (b) real monthly salary expressed in terms of the minimum living wage (RMV) (1 less than 1*RMV is low wage, between 1*RMV and 3*RMV is medium wage and more than 3*RMV is high wage), (c) weekly working hours expressed in hours (1 less than 40 hours, 2 more than 48 hours and 3 between 40 and 48 hours), (d) health insurance holding and (e) affiliated to a pension system. The combination of the last two formed the social insurance indicator with three modalities (1 none, 2 only one and 3 both).

Next, each trichotomous categorical indicator was assigned a numerical value of 0, 50 or 100, respecting the ascending direction (from worst to best); then, a weighting was assigned to each indicator: 40% for salary, 25% for contract, 25% for social security and 10% for working hours (Farné, 2003). In other words, the quality index of salaried employment ($ICEA_i$) is obtained for each worker in the sample (Equation 1):

$$ICEA_i = 0.40 * salary + 0.25 * contract + 0.25 * insurance + 0.10 * working day \quad (1)$$

The Min-Max normalization method (Equation 2) was applied to the ($ICEA_i$) estimate, to obtain values in a range of [0-100] quality points (pc); next, ($ICEA_i$) was then categorized to obtain the level of quality of salaried employment (NCEA), where in this study, in contrast to Farné (2003) which proposed four categories (very low, low, medium and high) for each quartile, chose to generate three categories: [0 – 50 > low quality, [50 – 75 > regular quality and [75 – 100] high quality.

$$ICEA_i^z = \frac{ICEA_i - ICEA_{min}}{ICEA_{max} - ICEA_{min}} \quad (2)$$

Second, the NCEA as a trichotomous ordinal indicator was used as the dependent variable in the partial proportional odds ordinal logit regression model. In addition, ten categorical indicators were incorporated into the model as independent covariates: gender (1 female and 2 male), age (1 under 30 years, 2 between 30 and 50 years and 3 between 50 and 65 years), education (1 up to primary, 2 up to secondary, 3 up to higher level and 4 postgraduate), head of household (1 yes and 2 no), poor (1 yes and

2 no), occupational group (1 worker and 2 employee), enterprise (1 informal and 2 formal), enterprise size defined by the number of workers (1 less than 11 workers the enterprise is small, 2 between 11 and 50 workers the enterprise is medium and 3 more than 50 workers the enterprise is large), employment (1 informal and 2 formal) and economic activity (1 primary, 2 secondary and 3 tertiary). These ten indicators were selected from a set of 15 indicators using the regression method backward stepwise.

Therefore, the econometric model was defined as follows (Equation 3):

$$NCEA_i = \beta_0 + \beta_1 * sex + \beta_2 * age + \beta_3 * education + \beta_4 * chief + \beta_5 * poor + \beta_6 * group + \beta_7 * company + \beta_8 * Size + \beta_9 * employment + \beta_{10} * activity + \mu_i \quad (3)$$

Finally, an ordinal partial proportional odds ordinal logit regression model was estimated without expansion factor, but using robust standard errors, in order to ensure the assumptions of homoscedasticity and uncorrelatedness of the errors (Long and Freese, 2014). This model provides two outcome sections, so it recategorizes the trichotomous categorical variable (dependent variable) into two dichotomous categorical variables, one for each section (Williams, 2021). The first section was recategorized as: 1) non-precarious salaried employment and 2) precarious salaried employment; while the second section was recategorized as: 1) non-standard salaried employment and 2) standard salaried employment. In sum, this model allowed us to estimate the regression coefficients, the odds ratios (OR), and the odds ratios (OR). $\hat{\beta}$ The model allowed us to estimate the regression coefficients, the odds ratio (OR) and the average marginal effects (*average marginal effects – AME*), the latter being the most appropriate to meet the objective of this study.

3. Results

Descriptive analysis

In 2022, women and young people under 30 years of age accounted for 38.1 % and 36.6 % of the total salaried labor force in Metropolitan Lima, respectively. In addition, 62.5 % of the salaried labor force had low quality employment, while 20.8 % and 16.7 % had regular and high quality employment, respectively.

Low quality employment affected 60.6 % of men and 65.6 % of women. In the case of women, 44.0 % worked without a contract and 60.2 % worked for a low salary ; that is, less than 1.5 RMV. It should be added that 24.6 % and 26.8 % of women worked less than 40 hours and more than 48 hours, respectively, in their main occupation. In addition, 56.6 % of women had higher education (technical or university) and 41.6 % were employed in a small company (see Table 1).

Similarly, of the total labor force under 30 years of age, 77.5 % had a low quality job . This is associated with 53.9 % working without a written contract, 64.8 % receiving a low salary, 32.6 % working more than 48 hours per week in their main occupation and 47.8 % not having access to health insurance or being affiliated to a pension system. Once again, it is observed that a little more than 50% of the young people reached higher education (technical or university level) and that 47.3% of the young people were employed by a small company. Likewise, poverty affected 18 % of women and 22.5% of young wage earners (see Table 1).

Table 1. Metropolitan Lima: Level of quality of salaried employment, job characteristics, education, firm size and poverty by sex and age 2022

Indicators	Sex		Age			Total
	Women	Man	[14-29]	[30-50]	[51-65]	
NCEA						
Download	65.6%***	60.6%***	77.5%***	55.7%***	47.6%**	62.5%***
Regular	18.7%**	22.1%**	16.9%**	23.3%**	22.6%**	20.8%***
High	15.7%**	17.3%**	5.6%*	21.0%**	29.9%**	16.7%**
Contract						
No contract	44.0%***	47.2%***	53.9%***	42.5%***	37.5%**	46.0%***
Temporary	40.3%***	38.4%***	41.3%***	40.4%***	29.3%**	39.1%***
Permanent	15.8%**	14.4%**	4.8%*	17.1%**	33.2%**	14.9%**
Salary						
Under	60.2%***	45.9%***	64.8%***	44.5%***	40.1%**	51.3%***
Medium	27.0%**	37.9%***	30.1%**	36.1%***	34.7%**	33.7%***
High	12.9%**	16.2%**	5.1%*	19.3%**	25.2%**	15.0%**
Working day						
< 40h	24.6%**	15.7%**	19.7%**	17.8%**	22.2%**	19.1%***
> 48h	26.8%**	33.4%***	32.6%**	30.6%***	27.4%**	30.9%***
[40-48]	48.6%***	50.9%***	47.7%***	51.6%***	50.4%***	50.0%***
Insurance						
None	35.6%***	34.4%***	47.8%***	29.1%***	21.3%**	34.8%***
Only one	14.9%**	16.7%**	15.5%**	16.5%**	15.7%*	16.0%***
Both	49.6%***	48.9%***	36.7%***	54.4%***	63.0%***	49.2%***
Education						
Primary	3.3%	4.5%*	1.6%	4.5%*	8.4%	4.0%*
Secondary	35.4%***	50.4%***	45.8%***	44.4%***	42.9%**	44.7%***
Superior	56.6%***	40.8%***	50.9%***	45.7%***	39.9%**	46.8%***
Postgraduate	4.8%*	4.3%*	1.7%	5.3%*	8.9%*	4.5%*
Size						
Small	41.6%***	42.6%***	47.3%***	39.7%***	38.0%**	42.2%***
Medium	18.7%**	19.7%**	21.7%**	19.0%**	14.1%*	19.3%***
Large	39.7%***	37.7%***	31.0%**	41.3%***	47.9%**	38.5%***
Poverty						
Poor	18.0%**	22.5%**	22.5%**	22.3%**	11.3%*	20.8%**
Not poor	82.0%***	77.5%***	77.5%***	77.7%***	88.7%***	79.2%***
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note : Coefficient of variation: * $CV < 15\%$; ** $CV < 10\%$; *** $CV < 5\%$.

Source: own elaboration.

Multivariate analysis

First of all, it is observed that most indicators comply with the assumption of parallel lines (Test de Brant, $p > 0.05$), except for gender and company size. In addition, the model has statistical significance at the global level [$LR\ chi2 : p < 0.05$]. Thus, all the estimated beta coefficients appear with the expected sign; that is, the relationship between the independent variables and the dependent variable is consistent. Likewise, almost all of them have statistical significance ($p < 0.05$), except for the secondary education level mode (see Table 2).

In this sense, the odds ratio (OR) revealed that the younger, less educated, poorer salaried population that worked in an informal enterprise had a lower chance of occupying a non-precarious job or a job of standard quality, compared to the adult labor force that was more educated, not poor and worked in a formal enterprise ($p < 0.05$). In fact, with respect to young people, the econometric model indicates that the salaried labor force between 30 and 50 years of age was 2.7 times more likely to have a non-precarious job and to have a job of standard quality (see Table 2).

On the other hand, the average marginal effects (*average marginal effects – AME*) show the unfavorable situation of being a woman and working in a small company ($p < 0.05$), although it is observed that relevant indicators such as education, poor and company do not have statistical significance on regular quality employment. This could suggest that the model has a better prediction in the extreme modalities (Long and Freese, 2014). Regarding gender, it was found that, on average, being male reduces the probability of having a low-quality job [$AME = -0.07$, $p < 0.05$] but increases the probability of having a high-quality job relative to women. [$AME = 0.04$, $p < 0.05$]. In relation to the size of the firm, on average, taking as a reference the small firm, being employed in a large firm reduces the probability of having a low quality job, but increases the probability of having a high quality job. [$AME = -0.17$, $p < 0.05$] but increases the probability of having a regular-quality job [$AME = 0.09$, $p < 0.05$] and high quality [$AME = 0.08$, $p < 0.05$] in 2022 (see Table 2).

With respect to the level of education of the salaried population, the econometric model shows that as the level of education of the worker increases, there is a greater chance that he/she occupies a non-precarious job and/or has a job of standard quality. The average marginal effects also reveal that the higher the level of education, the probability of having a low/high quality job is reduced/increased, regardless of gender, age, poverty status or whether the worker was employed by a small or large firm. In this sense, it is convenient to condition the average marginal effect by following Sen's model of capabilities (2000) where the conversion factors to be considered are the level of education as a dynamic element of the labor force, gender and poverty as differentiating elements and age as the common element. Wage employment is the resource, performance is the NCEA (observable outcome) and the context is the size of the firm. Consequently, four profiles of individuals are defined, represented by a common characteristic: being young (age), a dynamic characteristic (level of education) and two differentiating characteristics (gender and poverty status). These individuals with different levels of education were employed in a small company (context 1) and a large company (context 2). Therefore, the four profiles studied are: 1) young and poor salaried female, 2) young and poor salaried male, 3) young and non-poor salaried female, and 4) young and non-poor salaried male.

Table 2. Metropolitan Lima: Coefficient estimation, OR and marginal effects of the Logit model to predict the level of quality of salaried employment 2022.

Indicadores	Section I	Section II	Test Brant	OR	Average marginal effects		
	β	β	p		Download	Regular	Alta
Sex							
Man	0.73***	0.37***	0.00	-	-0.07***	0.03***	0.04***
Age							
[30 - 50]	0.98***	0.98***	0.57	2.7	0.10***	0.01**	0.10***
[51 - 65]	1.37***	1.37***	0.28	3.9	-0.14**	* 0.00	0.14***
Chief							
No	-0.34***	-0.34***	0.62	0.7	0.03***	0.00	-0.04***
Education							
Secondary	0.72*	0.72*	0.63	2.0	-0.08*	0.03	0.05**
Superior	1.71***	1.71***	0.13	5.5	-0.19***	0.04*	0.15***
Postgraduate	2.66***	2.66***	0.31	14.3	-0.28***	0.02	0.27***
Poor							
No poor	0.83***	0.83***	0.52	2.3	-0.09***	0.01*	0.08***
Group							
Employee	1.17***	1.17***	0.87	3.2	-0.13***	0.01***	0.11***
Size							
Medium	1.05***	0.46**	0.00	-	-0.12***	0.08***	0.04**
large	1.50***	0.80***	0.00	-	-0.17***	0.09***	0.08***
Company							
Formal	0.60**	0.60**	0.34	1.8	-0.06*	0.00	0.06**
Employment							
Formal	2.98***	2.98***	0.28	19.6	-0.41***	0.18***	0.24***
Activity							
Secondary	-1.07***	-1.07***	0.37	0.3	0.09***	0.02***	-0.12***
Tertiary	-1.71***	-1.71***	0.37	0.2	0.15***	0.03***	-0.18***
Threshold	-6.08***	-7.34***					

Note . Significance level: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Wald $\chi^2(18) = 1318.63$; Pseudo $R^2 = 0.4110$.

Source: own elaboration.

First, all predicted probabilities were statistically significant ($AME, p < 0.05$) in both contexts. Second, in both contexts the gender gap persists in favor of men. Thus, on average, a non-poor female wage-earner with higher education (technical and/or university, complete or incomplete) had a higher probability ($AME = 0.62, p < 0.05$) of holding a low-quality job, compared to a non-poor male wage-earner with a similar level of education ($AME = 0.52, p < 0.05$). In addition, poverty continues to be a barrier to reducing/increasing the probability of holding a low/high quality job, which is present in both contexts. For example, on average, a poor man with higher education (technical and/or university, complete or incomplete) had a lower probability ($AME = 0.09, p < 0.05$) than his non-poor peer ($AME = 0.17, p < 0.05$) with the same level of education to occupy a high quality job (see Table 3).

In addition, the evidence shows that large firms reduce/increase the probability of occupying a low/high quality job. That is, on average, a poor woman with education up to secondary level has a high probability of holding a low-quality salaried job ($AME = 0.96, p < 0.05$) in a small firm, but the probability of the same woman is reduced ($AME = 0.86, p < 0.05$) when the firm is large . Therefore, it could be deduced that context does matter (see Table 3).

Table 3. Metropolitan Lima 2022: probability of belonging to an NCEA for a young individual by education level and firm size

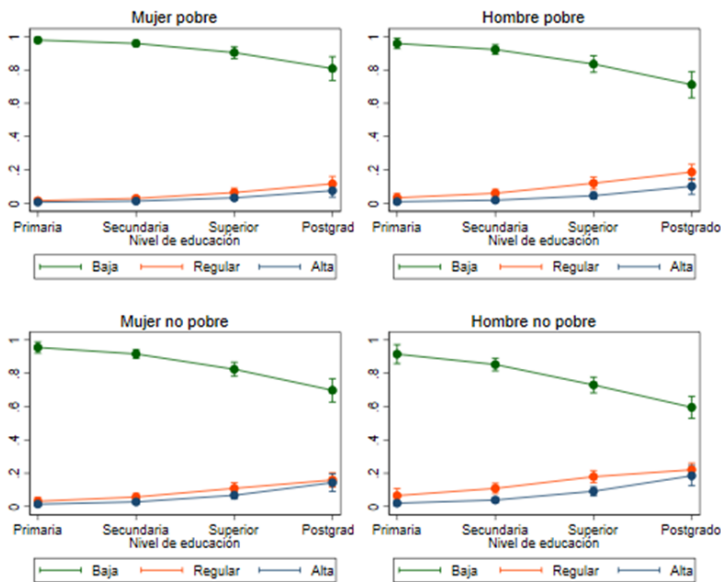
Sex	Education	Poor	Under	Regular	High
<i>Small company</i>					
Woman	Primary	Sí	0.98***	0.02***	0.01***
Woman	Secondary	Sí	0.96***	0.03***	0.01***
Woman	Superior	Sí	0.90***	0.06***	0.03***
Woman	Postgraduate	Sí	0.81***	0.12***	0.08***
Woman	Primary	No	0.96***	0.03***	0.01***
Woman	Secondary	No	0.92***	0.06***	0.03***
Woman	Superior	No	0.82***	0.11***	0.07***
Woman	Postgraduate	No	0.70***	0.16***	0.14***
Man	Primary	Sí	0.96***	0.03***	0.01***
Man	Secondary	Sí	0.92***	0.06***	0.02***
Man	Superior	Sí	0.84***	0.12***	0.05***
Man	Postgraduate	Sí	0.71***	0.19***	0.10***
Man	Primary	No	0.92***	0.07***	0.02***
Man	Secondary	No	0.85***	0.11***	0.04***
Man	Superior	No	0.73***	0.18***	0.09***
Man	Postgraduate	No	0.60***	0.22***	0.18***
<i>Large company</i>					
Woman	Primary	Sí	0.92***	0.07***	0.01***
Woman	Secondary	Sí	0.86***	0.12***	0.03***
Woman	Superior	Sí	0.74***	0.20***	0.07***
Woman	Postgraduate	Sí	0.60***	0.26***	0.14***
Woman	Primary	No	0.85***	0.12***	0.03***
Woman	Secondary	No	0.76***	0.18***	0.06***
Woman	Superior	No	0.62***	0.25***	0.13***
Woman	Postgraduate	No	0.49***	0.27***	0.24***
Man	Primary	Sí	0.86***	0.12***	0.02***
Man	Secondary	Sí	0.77***	0.19***	0.04***
Man	Superior	Sí	0.64***	0.28***	0.09***
Man	Postgraduate	Sí	0.51***	0.31***	0.18***
Man	Primary	No	0.76***	0.20***	0.04***
Man	Secondary	No	0.66***	0.26***	0.08***
Man	Superior	No	0.52***	0.31***	0.17***
Man	Postgraduate	No	0.40***	0.31***	0.29***

Note. Significance level: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: own elaboration.

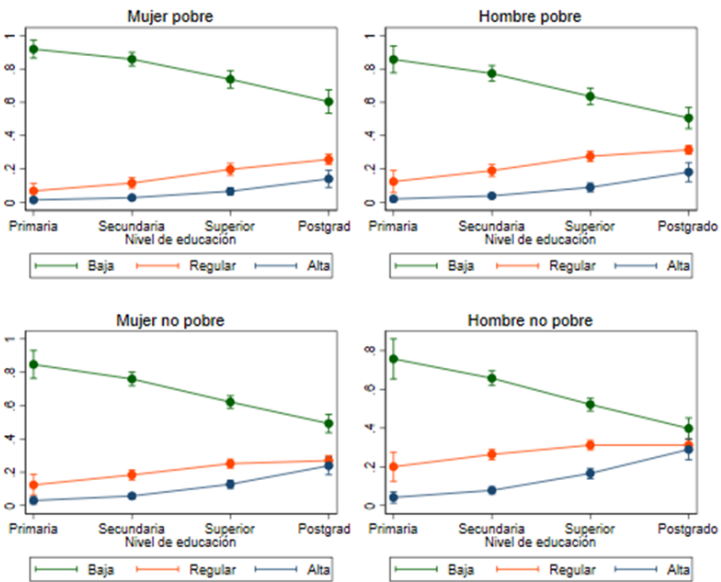
Finally, in general, it is evident that for the labor force under 30 years of age (young) being a woman or being poor increases the probability of having a low quality salaried job, but being both at the same time places the worker in a more vulnerable situation, since, as the level of education increases, the effect on the level of quality of salaried employment (NCEA) is reduced and tends to be reduced even more when the company is small (see Figure 1 and Figure 2).

Figure 1. Lima Metropolitana 2022: probability of belonging to an NCEA for a young individual according to education levels employed in a small company.



Source: own elaboration.

Figure 2. Lima Metropolitana 2022: probability of belonging to an NCEA for a young individual according to education levels employed in a large company.



Source: own elaboration.

4. Discussion

First of all, the level of education of the salaried population is directly related to the NCEA ($p < 0.05$) which is in agreement with several studies (Alba, 2016; Apablaza et al., 2023; Fernandez and Majluta, 2020; Herrera and Hidalgo, 2002; Martinez, 2012; Ñiquen, 2019; Posso, 2010; Rivarola, 2019; Salas and Florez, 2017; Tudela-Mamani et al., 2020). However, the effect of education on NCEA varies according to the conversion factors (gender, age, poor) of the labor force and the size of the firm (the context). This implies that the level of quality of salaried employment is not an outcome that depends exclusively on the individual and the human capital he or she possesses. In this sense, Barrantes and Matos (2019) found that "women have been gaining access to education and, although their presence has increased considerably, this has not translated into similar growth rates of female employment and formal employment" (p. 14). In addition, skill, technique, precision, responsibility and knowledge are skills that the working population acquires and accumulates over time. This implies an increase in the quality level of the labor force (NCFT), as long as employment promotes the conditions for such accumulation. In this framework, the Marxist critique argues that wage employment, in general, limits the potential of the labor force, since wage labor is alienated labor. (Marx, 1987). Therefore, NCFT and NCEA are not the same thing, although both notions are related and condition each other. The first is associated with the set of physical, intellectual, emotional and social faculties of the worker and the second with the social responsibility of the employer as owner of the means of production. Moreover, the labor force is purchased on the market, but its level of quality is checked in the sphere of production. When a mismatch between NCFT and NCEA occurs, two problems are identified: 1) overeducation, occurs when the achieved educational level of a person exceeds the level required to fill the job and 2) undereducation, when the educational level does not reach the required level of the job. (Yamada and Lavado, 2017).

Second, the gender gap in favor of men increases women's probability of accessing low-quality employment (Alba, 2016; Apablaza et al., 2023; Ñiquen, 2019; Tudela-Mamani et al., 2020). Moreover, the evidence shows a direct relationship between the work life cycle and NCEA ($p < 0.05$), which agrees with Herrera and Hidalgo (2002), Rivarola (2019) and Tudela-Mamani et al. (2020). In other words, there is a double marginalization for young women (Barrantes and Matos, 2019). In the case of women, labor disadvantages are associated with gender discrimination manifested by sexist beliefs (men are superior to women or vice versa), gender stereotypes (assignment of predefined behaviors and roles), machismo culture (female subordination) and by patriarchal institutions and structures that relegate women from management positions. In the case of the labor force under 30 years of age (young), it is evident that its conversion factors are in the process of development; however, given that the vast majority of jobs are of low quality, this process will be interrupted or corrupted. Consequently, the labor force will "adjust" to having a low level of labor productivity. Finally, in the case of being a young woman, one of the main problems that would limit her possibilities of developing her labor conversion factors is teenage pregnancy and early motherhood (Barrantes and Matos, 2019).

Third, the higher the conversion factors of the salaried population, the greater the possibility that people will have access to better quality employment. High-quality jobs offer young people more opportunities to develop their skills and escape poverty, but in Metropolitan Lima such jobs are few; moreover, poverty continues to be a barrier that hinders the development of conversion factors (Sen, 2000) of the labor force. As a consequence, being poor increases the probability of being employed in low-quality jobs. ($p < 0.05$). Here we have a vicious circle between poverty and precarious employment; however, the generation of high quality jobs could be a way to reduce poverty (Castillo and Huarancca, 2022). Indeed, the authors found that the elimination of precarious employment in Peru could reduce multidimensional poverty by 10.4 percentage points, which would be equivalent to lifting almost 3.3 million people out of poverty.

5. Conclusion

First, this study found that the majority of salaried jobs in Metropolitan Lima were of low quality in 2022, which is in line with the public problem identified by the MTPE (2021) in the National Policy for Decent Employment. Secondly, most of the salaried labor force under 30 years of age (young people) had a low-quality job, but the probability of having one varies according to the worker's conversion factors. Thus, it was verified that being a woman and/or being poor increases the probability of holding a low-quality job. In addition, being a small company reduces the influence of the level of education on access to a better quality job.

From the worker's perspective, the level of quality of salaried jobs is the responsibility of employers, since is linked to the level of quality of jobs. From Sen's theory of human capabilities (2000) a high quality job is one that allows the worker to develop his or her capabilities; however, the salaried labor force configures a subordinate employment relationship. Therefore, the main capacity to ensure an increase in the level of quality of employment is the ability to organize unions to collectively negotiate better working conditions. However, one of the main limitations of this study is the absence of variables related to the quality of services (for example, the degree of education is measured, but not its level of quality), state regulation and supervision, and the role of trade union organizations, since the ENAHO is, without a doubt, a valuable tool for understanding various aspects of the country's socioeconomic situation, but it is not a specialized database for measuring the level of quality of employment. On the other hand, the methodology used to construct the synthetic index is not immune to criticism, mainly due to the assignment of weights. In view of this, multivariate statistics offer alternative methodologies for estimating these weights from the data itself.

The findings of this study reveal that the opportunities that an individual possesses depend on his or her conversion factors and the context in which he or she lives. Therefore, thinking that opportunities depend exclusively on the individual and that everyone has the same possibility of creating them just by wanting to reflects a perspective deeply rooted in methodological individualism that, taken to the workplace, implies a misunderstood conception of "meritocracy". Undoubtedly, individual effort is important and each individual is responsible for his or her decisions and actions, but individualism takes this to the extreme because it considers that a person's success or failure is due solely to his or her own actions, skills and efforts, without considering external circumstances or structural factors that may influence his or her situation. All this makes possible future lines of research in the social field that incorporate, for example, the impact of the level of quality of Peruvian education and of artificial intelligence in capitalist production on the NCEA. In this sense, critical thinking from the Marxist tradition can provide a solid analytical framework for understanding the dynamics of capitalism, while the theory of capabilities allows highlighting the importance of designing specific public training policies that help young women acquire the skills and knowledge necessary to access better quality jobs. These programs must be inclusive, accessible and tailored to the individual needs of each woman.

Author Contributions

Jorge A. Corzo Portocarrero: [Conceptualization](#), [Investigation](#), [Formal analysis](#), [Writing – original draft](#), [Writing – review editing](#).

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