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Education as a factor in reducing economic inequalities

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Abstract: This study analyzes the role of education in reducing economic inequalities in Morocco by adopting a multidimensional approach grounded in the capability theory. In a Moroccan context marked by persistent disparities in living standards, gender, and access to economic opportunities, education is considered not only as an investment in human capital but also as a lever for expanding real freedoms that enable individuals to sustainably improve their living conditions. The empirical analysis is based on data from a survey conducted among 284 individuals residing in both urban and rural areas in Morocco. An ordered Probit model is employed to explain the standard of living, measured on a five-point Likert scale. Several dimensions of education are incorporated, including access to employment opportunities, decision-making autonomy, intergenerational social mobility, civic participation, resilience to economic risks, and the development of productive capabilities, while controlling for socio-demographic characteristics. The results show that, in the Moroccan context, education significantly contributes to reducing economic inequalities through improved labor market integration, strengthened individual autonomy, upward social mobility, and civic inclusion. These mechanisms increase the probability of accessing higher standards of living and limit the intergenerational reproduction of inequalities. By contrast, resilience to economic risks does not appear as a direct determinant of the standard of living, suggesting a role that is more protective than redistributive. The results also highlight the persistence of gender-based economic inequalities in Morocco, while territorial disparities diminish once educational dimensions are taken into account. The study thus emphasizes the importance of equitable and high-quality educational policies to strengthen social justice and inclusive development in Morocco.

Keywords: education; economic inequalities; standard of living; capability theory; ordered Probit; Morocco.

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1 Introduction

Economic inequalities are today one of the major challenges facing contemporary societies, both in developing countries and in advanced economies. They manifest themselves through persistent gaps in income, living conditions, and access to opportunities, undermining social cohesion and the sustainability of development. In response to these imbalances, education is frequently presented as a key instrument for reducing inequalities, due to its capacity to improve employability, productivity, and social mobility. However, the relationship between

education and economic inequalities remains complex and far from automatic. While educational expansion can stimulate economic growth, its redistributive effects depend closely on conditions of access, the quality of education systems, and their articulation with the labor market and social institutions. In many contexts, education may even, in the short term, widen disparities when it primarily benefits already advantaged groups. This ambivalence highlights the need for an in-depth analysis of the mechanisms through which education affects economic inequalities, going beyond a strictly quantitative reading of educational attainment.

From this perspective, this paper adopts a multidimensional approach to education, drawing on capability theory to analyze its role in reducing economic inequalities. Rather than viewing education solely as an investment in human capital, the study considers it as a factor in the expansion of real freedoms, enabling individuals to broaden their professional opportunities, strengthen decision-making autonomy, promote social mobility, and participate more actively in civic life. This approach emphasizes that improvements in living standards result not only from wage gains, but also from the ability to transform educational resources into stable and inclusive economic trajectories. Relying on individual-level data and econometric modeling adapted to the ordered nature of living standards, this work aims to identify the specific channels through which education contributes to reducing inequalities. The objective is thus to provide empirical evidence useful for the design of more equitable educational policies capable of addressing the challenges of social justice and inclusive development.

2 Literature review

Human capital theory developed by Becker (1993) establishes that the expansion of education improves the quality and diversity of professional opportunities accessible to individuals, implying an increase in their economic potential over the life cycle. This logic suggests that education acts as a mechanism for compensating initial disadvantages by strengthening productive capacities and employability, thereby opening the way for a reduction in income gaps. This dynamic is clarified by Sieben (2001), who shows, based on comparative analyses using sibling data, that the influence of socio-economic background on educational outcomes tends to decrease over time and across national contexts. Such an evolution implies that education can gradually limit the reproduction of social inequalities by reducing the dependence of educational trajectories on family resources. Shimeles (2016) extends this reasoning by emphasizing that secondary and higher education play a documented role in reducing economic inequalities and improving intergenerational mobility, particularly in developing countries. Taken together, these contributions imply that education, when it expands beyond the primary level and becomes more accessible, constitutes a vector for reducing economic inequalities in the medium and long term.

The theory of fundamental causes proposed by Phelan et al. (2010) highlights those persistent inequalities, particularly in health, are rooted in unequal distributions of resources such as knowledge, power, and prestige—resources to which education provides broad access. This approach implies that the education system, as a central structure of social stratification, conditions individuals' ability to avoid risks and mobilize protective strategies, with indirect effects on economic inequalities. In this perspective, Delaruelle et al. (2019) empirically show that educational structures, particularly the removal of early student tracking, can influence health trajectories in adulthood, especially among individuals who are academically vulnerable. Their results imply that a more equitable education system can reduce cumulative disadvantages that later translate into socio-economic inequalities. Solar and Irwin (2010) reinforce this interpretation by identifying education as one of the major social determinants of health, emphasizing that educational attainment shapes socio-economic status and access to resources. The articulation of these works implies that equity-oriented educational policies can simultaneously contribute to reducing economic and social inequalities.

The work of Eicher and Garcia-Penalosa (2001) highlights the ambivalent role of human capital, which affects both economic growth and income distribution. They show that education can stimulate growth while producing non-automatic distributive effects, implying that its impact on inequalities depends on conditions of access and diffusion of human capital. This idea echoes Becker (1967), who emphasizes that differences in individual abilities and in opportunities for educational investment structure income distribution. Equalization of educational opportunities thus appears as a lever capable of modifying selection mechanisms and limiting income disparities. Ram (1990) provides a dynamic perspective by showing that educational expansion follows an inverted U-shaped trajectory with respect to schooling inequalities: these increase in the initial phases before declining once a certain

threshold is reached. This evolution implies that education can, in the long run, reduce educational inequalities and, by extension, economic inequalities. Taken together, these contributions suggest that education does not act instantaneously as an equalizing factor, but can play this role when its expansion becomes sufficiently inclusive.

Busemeyer (2015) shows that education and skill-formation policies can either perpetuate or reduce economic inequalities, depending on their degree of equity. This approach implies that education promotes social mobility when it enables individuals from disadvantaged backgrounds to acquire skills valued in the labor market. Allmendinger and Nikolai (2010) nevertheless qualify this view by emphasizing that purely educational policies, in the absence of redistribution, risk reinforcing inequalities if access to education remains socially differentiated. Their notion of a "dual responsibility" implies that education must be combined with strong social protection to produce redistributive effects. Rehme (2007) confirms this complexity through a theoretical model showing that education simultaneously affects growth and inequalities, without a clear linear relationship when inequalities are measured by indicators such as the Gini coefficient. The inverted U-shaped relationship he identifies suggests that education can reduce inequalities under certain configurations, but not systematically. These studies imply that education constitutes a conditional lever for reducing inequalities, whose effectiveness depends on the institutional and redistributive framework.

Goldin and Katz (2009) argue that educational investment is a central means of reducing wage inequality, particularly when the supply of skills grows faster than demand. Their analysis implies that skill shortages fuel wage gaps, and that educational expansion can reduce the wage premiums associated with degrees. This interpretation is reinforced by Carnevale et al. (2013), who show that postsecondary education has become a condition for access to more stable and better-paid jobs, allowing individuals to escape precarious segments of the labor market. Education thus appears as a mechanism for securing professional trajectories, with direct implications for reducing economic inequalities. Stiglitz (2012) places these findings within a broader critique of market rules, emphasizing that the absence of public intervention and the lack of educational opportunities for poor populations contribute to the persistence of inequalities. It follows that the development of public education at all levels constitutes a necessary condition for correcting market-generated imbalances and limiting the growth of economic inequalities.

Braveman et al. (2011) show that education is among the major social determinants of health and influences inequalities through mechanisms related to literacy, access to information, and access to resources. This relationship implies that educational gaps translate into economic disparities through differences in health and productive capacity. Wagstaff et al. (2003) confirm this perspective by identifying education as a central factor in explaining health inequalities, emphasizing its role in reducing gaps between social groups. Van de Poel et al. (2008) also show that education contributes significantly to socio-economic inequalities observed in malnutrition, revealing cumulative mechanisms linking educational attainment, living conditions, and well-being. Taken together, these studies imply that education indirectly affects economic inequalities by influencing fundamental dimensions of human capital, such as health and nutrition, which condition productivity and income. More equitable access to education can therefore help limit these chains of disadvantage.

Emamian et al. (2013) show that maternal education is a determining factor in reducing socio-economic inequalities related to child stunting. This relationship implies that a more equitable distribution of women's education can reduce early disadvantages and their long-term effects on economic trajectories. Hellevik (2000) provides a methodological contribution by showing that when educational inequalities are measured using appropriate indicators such as the Gini coefficient, they appear to decline over the long term. This observation suggests a gradual equalizing role of education, often underestimated by alternative measures. Lamont (2018) complements this perspective by emphasizing that education promotes mechanisms of social recognition and destigmatization, by offering more equitable opportunities for socio-economic integration. Education thus appears as a tool for reducing not only material gaps but also symbolic ones, which influence access to economic resources. These contributions imply that education affects inequalities through multiple channels, ranging from early childhood to social recognition.

Makhout et al. (2024) show, in the Moroccan context, that public policies aimed at improving access to education have a strongly positive effect on pro-poor growth. They indicate that education strengthens human capital,

increases productivity, and facilitates the integration of disadvantaged populations into the labor market, implying a reduction in economic inequalities. El Hamidi (2023) nevertheless qualifies this relationship by observing that public spending on education did not produce a significant effect on poverty reduction over the period studied in Morocco. This divergence implies that the impact of education depends on implementation modalities and the quality of educational policies. Shimeles (2016) provides an interpretive framework by emphasizing that the equalizing effects of education, particularly at the secondary and higher levels, manifest mainly in the long term. The articulation of these studies implies that education constitutes a potential lever for reducing economic inequalities, whose effectiveness rests on policy coherence, the quality of investments, and their capacity to reach the most vulnerable populations.

3 Methods

3.1 Research hypotheses

The capability theory developed by Amartya Sen (1999) represents a major advance in the understanding of economic inequalities, by going beyond approaches focused solely on resources or income. It emphasizes the distinction between the means available to individuals and their real freedom to convert these means into valued functionings, that is, into concrete possibilities to act and to choose their way of life. Within this framework, education is perceived not only as an investment in human capital but above all as a factor of freedom expansion, enabling individuals to broaden their set of real opportunities. Applied to the reduction of economic inequalities, this perspective shows that education operates across several dimensions: it strengthens productive capabilities, improves social mobility, promotes decision-making autonomy, and stimulates civic participation. In this way, it contributes to reducing structural gaps linked to social origin, gender, or territory. Adapting this theory to the subject highlights the following levers:

- **Opportunities and autonomy:** Education constitutes an essential lever for expanding access to professional opportunities by facilitating access to formal and better-paid employment. By reducing income gaps linked to social origin, it promotes economic mobility and durable integration into the labor market. At the same time, it strengthens decision-making autonomy by enabling individuals to make informed choices regarding career orientation, resource management, and social participation. This autonomy protects against economic dependence and offers a greater capacity to adapt to contemporary demands. By combining access to employment with independence in decision-making, education acts directly on the reduction of inequalities by providing individuals with the means to build a more equitable and stable trajectory.
- **Social mobility and civic inclusion:** Education plays a major role in intergenerational social mobility by enabling children from disadvantaged backgrounds to surpass the socio-economic status of their parents. It facilitates access to selective educational tracks, skilled jobs, and new social networks, thereby reducing the hereditary reproduction of inequalities. Moreover, it develops capacities for civic participation and social inclusion. By providing individuals with the means to understand their rights and engage in democratic life, education strengthens social capital and limits inequalities in influence and power. Thus, it functions both as a mechanism of upward mobility and as a tool for civic integration, reducing social and economic divides.
- **Resilience and equity:** By equipping individuals with diversified and transferable skills, education increases resilience to economic and social risks. It provides resources to cope with unemployment, crises, or discrimination, notably through occupational mobility, versatility, and adaptive capacity. This resilience limits situations of exclusion, promotes economic integration, and strengthens social equity. By enabling individuals to maintain stability in the face of uncertainty, education acts as a durable protective mechanism against structural inequalities. It therefore constitutes a key resource for reducing population vulnerability, ensuring greater social justice, and promoting a more balanced distribution of opportunities within society.

Education acts as a vector of equality by expanding access to professional opportunities, strengthening decision-making autonomy, and promoting upward social mobility that reduces the reproduction of inequalities. It also supports civic participation and social inclusion by giving individuals the means to understand their rights and

engage in collective life, thereby limiting imbalances in influence and power. Finally, it increases resilience to economic and social risks, allowing individuals to better adapt to crises and reduce vulnerability. On this basis, the hypotheses are formulated as follows:

- ***H1: Improving equitable access to professional opportunities through education has a positive effect on reducing economic inequalities.***
- ***H2: Strengthening decision-making autonomy through education has a positive effect on reducing economic inequalities.***
- ***H3: Increasing intergenerational social mobility through education has a positive effect on reducing economic inequalities.***
- ***H4: Strengthening civic participation and social inclusion through education has a positive effect on reducing economic inequalities.***
- ***H5: Improving resilience to economic and social risks through education has a positive effect on reducing economic inequalities.***

3.2 The model

These levers show that education acts simultaneously on economic, social, and institutional dimensions by creating more equitable conditions of access to resources. It makes it possible to integrate both individual factors, such as skills, and collective factors, such as civic participation, to explain the reduction of inequalities. The approach adopted thus aims to translate these multiple effects into an appropriate econometric structure. The model is specified as follows:

$$NIVV_i = \beta 0 + \beta 1.EPRO_i + \beta 2.EAUT_i + \beta 3.EMOB_i + \beta 4.EPAR_i + \beta 5.ERES_i + \beta 6.ECAP_i + \beta 7.AGEE_i + \beta 8.GENR_i + \beta 9.LOCA_i + \varepsilon_i$$

The dependent variable NIVV (standard of living) is measured on a Likert scale ranging from 1 to 5, where 1 corresponds to a very low level and 5 to a very high level. EPRO (Education–professional opportunities) captures the impact of education on labor market integration, with emphasis on access to formal employment, wage progression, contractual stability, skills–job matching, upward occupational mobility, and the reduction of unemployment. The variable EAUT (Education–decision-making autonomy) reflects the agency associated with education, particularly in budget management, financial planning, professional decision-making, economic literacy, negotiation capacity, and independence from economic dependence. The variable EMOB (Education–social mobility) highlights the contribution of education to breaking the intergenerational reproduction of inequalities, through improvements in socio-economic status relative to parents, access to selective tracks, geographic mobility, and the construction of new social networks.

The variable EPAR (Education–civic participation) assesses the influence of education on participation in civic and associative life, knowledge of rights, defense of collective interests, and social inclusion. The variable ERES (Education–resilience to risks) measures adaptive capacity in the face of economic crises, unemployment, and discrimination, notably through occupational reconversion, versatility, and precautionary behavior. Finally, the variable ECAP (Education–productive capacities) highlights the effect of education on innovation, creativity, entrepreneurial capacity, complex problem-solving, and the use of technology. All these main explanatory variables are assessed through six items measured on a Likert scale from 1 to 5, with the mean value constituting the retained indicator. Five control variables are introduced. AGEE (age in years) captures life-cycle effects on the standard of living. GENR (gender: male = 1 / female = 0) accounts for socio-economic differences related to sex. LOCA (place of residence: urban = 1 / rural = 0) controls for territorial inequalities in access to opportunities.

3.3 Choice of empirical methodology

The use of an ordered Probit model in this study is fully justified by the nature of the dependent variable considered, namely the standard of living (NIVV), measured on a Likert scale ranging from 1 to 5. This type of variable is neither continuous nor simply dichotomous, but corresponds to an ordered set of qualitative categories reflecting a subjective ranking. The application of an ordinary least squares (OLS) regression would ignore this characteristic by treating the differences between categories as equidistant, which would introduce specification bias and compromise the validity of the estimated coefficients. The ordered Probit model, by contrast, is specifically designed to estimate the probability that an individual falls into a given category or a higher one, conditional on the explanatory variables. It thus makes it possible to model the latent and ordered nature of the dependent variable

by introducing threshold parameters that separate the different levels of living standards. This approach ensures better statistical and interpretative adequacy, as it respects the hierarchical structure of the responses while avoiding the assumption of arbitrary distances between categories. Moreover, the ordered Probit model provides a robust estimation of the marginal effects of the educational dimensions on the reduction of economic inequalities, while incorporating control variables. Consequently, this methodological choice guarantees scientific rigor and the relevance of the results for analyzing the multidimensional impact of education on improvements in living standards and the reduction of inequalities.

3.4 Presentation of the sample

The empirical analysis is based on a sample of 284 individuals, constructed through a questionnaire survey aimed at examining the role of education in reducing economic inequalities through improvements in living standards. The respondents display diverse socio-economic profiles, making it possible to capture heterogeneous situations in terms of living conditions, educational trajectories, and socio-professional integration. The standard of living is measured using an ordered five-point scale, ranging from a very low level to a very high level, allowing for the identification of gradual differences in the material and social conditions of the respondents. The sample includes individuals belonging to different age groups, reflecting both early stages of working life and more advanced trajectories characterized by longer economic experience.

The composition of the sample also includes both men and women, allowing socio-economic disparities related to gender to be taken into account. In addition, respondents come from both urban and rural areas, providing a representation of territorial inequalities in access to economic opportunities, services, and infrastructure. The educational dimensions analyzed cover several complementary aspects, including access to professional opportunities, autonomy in economic decision-making, social mobility, participation in civic life, resilience to risks, and the development of productive capacities. Each of these dimensions is assessed using multiple items measured on a perception scale, with the mean value retained in order to obtain synthetic and comparable indicators.

4 Results

4.1 Robustness analysis

Table 1 presents the results of the Ramsey RESET specification test aimed at verifying the possible existence of omitted variables or nonlinearities in the model explaining NIVV. The reported values show that the t-statistic (0.737), the F-statistic (0.543), and the Likelihood Ratio (0.565) are all associated with probabilities greater than 0.45, well above the 5% threshold. This lack of statistical significance indicates that the inclusion of the squared fitted values does not modify the explanatory power of the model, thereby confirming that the chosen functional form is appropriate. Moreover, the minimal difference between the restricted and unrestricted SSR (526.47 versus 525.43) confirms that no statistical gain is provided by the expanded model.

Table1. Ramsey RESET Specification Test

Specification: NIVV C EPRO EAUT EMOB EPAR ERES ECAP AGEE GENR LOCA			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	0.737369	273	0.4615
F-statistic	0.543713	(1, 273)	0.4615
Likelihood ratio	0.565058	1	0.4522
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	1.046453	1	1.046453
Restricted SSR	526.4739	274	1.921438
Unrestricted SSR	525.4275	273	1.924643

Source: authors;

Table 2 presents the Variance Inflation Factors (VIF), used to assess the presence of multicollinearity among the explanatory variables in the model. The results show that all centered VIF values are very low, ranging between 1.009 and 1.036, well below the critical threshold of 5. These values indicate an almost complete absence of

problematic correlation among the educational variables. Although the uncentered VIF values are higher, they are not relevant for assessing collinearity since they include the effect of the constant term. The VIF for this constant is high (29.41), which is normal and has no impact on the robustness of the model. Thus, Table 2 confirms that the model does not suffer from multicollinearity, ensuring the stability of the estimated coefficients.

Table 2. Variance Inflation Factors (VIF)

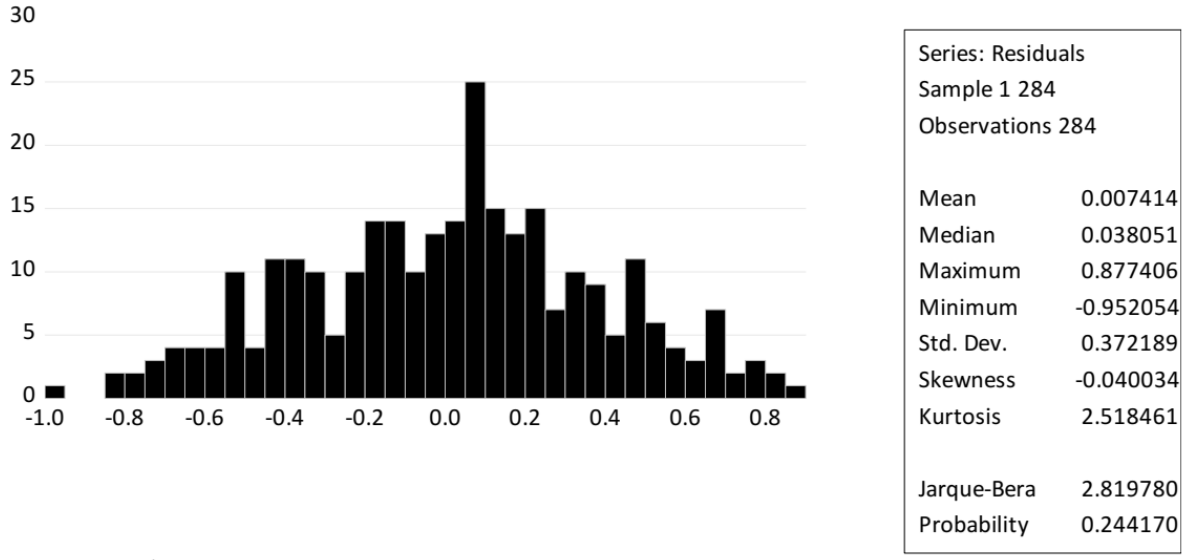
Variance Inflation Factors
Sample: 1 284
Included observations: 284

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.199030	29.41784	NA
EPRO	0.084344	4.639007	1.018155
EAUT	0.082252	3.900936	1.023793
EMOB	0.081535	3.954167	1.009763
EPAR	0.083584	3.976412	1.021385
ERES	0.082162	4.112311	1.035692
ECAP	0.094647	5.035919	1.025522
AGEE	0.078428	4.312583	1.019844
GENR	0.083753	3.963706	1.013879
LOCA	0.078242	3.908104	1.012095

Source: authors;

Figure 1 presents the distribution of the residuals as well as the Jarque–Bera normality test, making it possible to assess the conformity of the residuals with the classical assumptions of the model. The histogram shows an overall symmetric distribution, centered around zero, with a dominant concentration between −0.2 and 0.3. The statistical indicators support this interpretation: the mean (0.007) and the median (0.038) are nearly zero, confirming the absence of systematic bias. The skewness (−0.040) indicates a slight negative asymmetry, while the kurtosis (2.51) remains close to the theoretical value of 3. The Jarque–Bera test reports a statistic of 2.82 with a probability of 0.244, well above the 5% threshold, leading to a failure to reject the normality hypothesis. Thus, Figure 1 confirms the normality of the residuals.

Figure 1. Distribution of Residuals and Jarque–Bera Normality Test



Source: authors;

Table 3 presents the results of the Harvey heteroskedasticity test, designed to verify whether the variance of the residuals is constant in the model. The three reported statistics—F-statistic = 0.7025 (p = 0.7065), Obs*R-squared = 6.405 (p = 0.6987), and Scaled explained SS = 3.947 (p = 0.9149)—all display probabilities well above the conventional 5% threshold. This lack of statistical significance indicates that the null hypothesis of homoskedasticity cannot be rejected. In other words, there is no systematic relationship between the residuals and

the explanatory variables that could generate non-constant variance. Taken together, these results thus confirm the stability of the error variance.

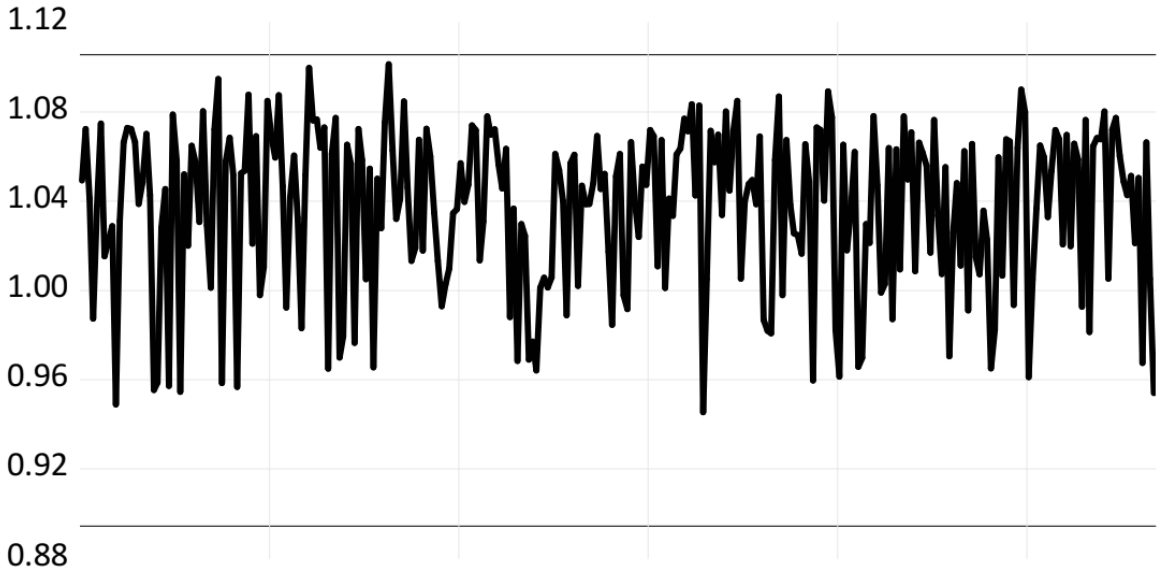
Table 3. Harvey Heteroskedasticity Test

Statistic	Value	Associated Test	Probability
F-statistic	0.702504	F(9, 274)	0.7065
Obs*R-squared	6.405477	Chi-Square(9)	0.6987
Scaled explained SS	3.947151	Chi-Square(9)	0.9149

Source: authors;

Figure 2 presents the evolution of the COVRATIO values, which makes it possible to identify observations that may exert excessive influence on the stability of the model's coefficients. The values are generally located around 1, the theoretical threshold indicating that no observation significantly disturbs the variance–covariance matrix. The displayed series is dense but regular, with no extreme peaks or major breaks: fluctuations remain within approximately 0.95 and 1.08, showing that the removal of any single observation would not affect the model estimates. The absence of values clearly far from 1 confirms that no individual data point exerts a disproportionate influence or destabilizes the statistical structure. Thus, Figure 2 attests that the model is not sensitive to the presence of influential observations that could bias the results or compromise their interpretative validity.

Figure 2. Influence Statistics: COVRATIO Values



Source: authors;

All the tests conducted confirm the robustness of the model. The Ramsey RESET test shows the absence of omitted variables or nonlinearities, validating correct functional specification. The Harvey heteroskedasticity test reveals constant error variance. The centered VIF values, all close to 1, attest to a complete absence of multicollinearity among the explanatory variables, ensuring coefficient stability. The distribution of the residuals satisfies the normality assumption, as indicated by the symmetric histogram and a non-significant Jarque–Bera test. Finally, the COVRATIO values fluctuate around 1, showing that no observation exerts excessive influence. Taken together, these diagnostics demonstrate that the model is statistically sound, stable, and appropriately specified.

4.2 Results of the ordered Probit regression

Table 4 presents the overall results of the ordered Probit model estimated by maximum likelihood in order to explain living standards (NIVV) measured across five ordered categories. The model is based on a sample of 284 observations, with estimation carried out using the Newton–Raphson algorithm, complemented by Marquardt steps to ensure convergence. Convergence is achieved rapidly, after only five iterations, indicating good numerical

stability of the model and internal consistency of the data. The variance–covariance matrix is computed from the observed Hessian, ensuring reliable estimation of standard errors.

Table 4. Ordered Probit Model Results (Maximum Likelihood Estimation)

Dependent Variable: NIVV
Method: ML - Ordered Probit (Newton-Raphson / Marquardt steps)
Sample: 1 284
Included observations: 284
Number of ordered indicator values: 5
Convergence achieved after 5 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-4.613289	1.366213	-3.376699	***0.0008
EPRO	0.540657	0.253685	2.131216	**0.0339
EAUT	4.909804	1.341264	3.660581	***0.0003
EMOB	7.842684	2.568493	3.053419	***0.0025
EPAR	8.739742	3.110337	2.809902	***0.0053
ERES	-1.339252	2.209444	-0.606149	0.5449
ECAP	0.469633	0.226578	2.072723	**0.0391
AGEE	2.357592	1.058632	2.227018	**0.0267
GENR	1.774627	0.940854	1.886187	*0.0603
LOCA	-0.916825	0.575300	-1.593646	0.1121

Source: authors; *** significant at 1%; ** significant at 5%; * significant at 10%.

EPRO displays a positive sign and a statistically significant effect at the 5% level (p-value = 0.0339), indicating that improvements in professional integration associated with education increase the probability of belonging to a higher standard-of-living category. This result confirms that access to formal employment and professional stability play a decisive role in reducing economic gaps. Thus, H1 is accepted, implying that education contributes to reducing economic inequalities through the expansion of professional opportunities. EAUT shows a strongly positive sign and high statistical significance at the 1% level (p-value = 0.0003), reflecting a robust effect of decision-making autonomy strengthened by education on improvements in living standards. This relationship suggests that the ability to make informed economic and professional decisions constitutes a central mechanism for reducing inequalities. H2 is therefore accepted, implying that education acts as an equalizing lever by strengthening individual agency.

EMOB is associated with a positive sign and significance at the 1% level (p-value = 0.0025), showing that intergenerational social mobility supported by education significantly increases the probability of accessing higher living standards. This result confirms that education makes it possible to break with the hereditary reproduction of socio-economic inequalities. H3 is accepted, which implies that social mobility constitutes a fundamental channel through which education reduces economic inequalities. EPAR also presents a positive sign and significance at the 1% level (p-value = 0.0053), indicating that civic participation and social inclusion fostered by education are associated with improvements in living standards. This link suggests that access to information, rights, and collective networks strengthens capacities for influence and economic integration. H4 is accepted, implying that education contributes to reducing inequalities by limiting power imbalances and social exclusion. ERES displays a negative but statistically non-significant sign (p-value = 0.5449), indicating that resilience to economic and social risks, as measured here, does not exert a differentiated effect on living standards. This result suggests that adaptive capacities to shocks do not automatically translate into observable improvements in economic conditions. H5 is rejected, implying that educational resilience operates more as a protective mechanism than as a direct factor in reducing inequalities.

ECAP presents a positive sign and significance at the 5% level (p-value = 0.0391), indicating that the strengthening of productive, entrepreneurial, and cognitive capacities linked to education improves living standards. This result shows that innovation, creativity, and problem-solving constitute effective channels for reducing economic inequalities by supporting individual initiative and value creation. Concerning the control variables, AGEE displays a positive sign significant at the 5% level (p-value = 0.0267), suggesting a life-cycle effect whereby

accumulated economic experience progressively improves living standards. GENR presents a positive sign and significance at the 10% level (p-value = 0.0603), indicating living standard gaps to the disadvantage of women and revealing the persistence of gender-based economic inequalities. LOCA shows a negative but non-significant sign (p-value = 0.1121), suggesting that, all else being equal, territorial disparities between urban and rural areas do not produce a statistically significant differentiated effect on living standards in this model.

5 Discussion

The results of the study confirm that education acts as a central lever for reducing economic inequalities, primarily through structural mechanisms related to professional integration, individual autonomy, and social mobility. The positive effects associated with professional opportunities, decision-making autonomy, and productive capacities indicate that education is not limited to the accumulation of knowledge but constitutes a factor of effective access to the most stable and best-paid segments of the labor market. This dynamic aligns with the idea that education makes it possible to transform resources that are initially unequally distributed into differentiated economic trajectories, by reducing dependence on social origin. The strong contribution of intergenerational social mobility highlights that education plays a key role in breaking the mechanisms of inequality reproduction, by offering individuals from disadvantaged backgrounds real opportunities for economic advancement. Moreover, the significant effect of civic participation suggests that education also operates through institutional and social channels, by strengthening access to information, rights, and collective networks, which indirectly improves living conditions. These results converge toward a multidimensional reading of economic equality, in which living standards depend as much on productive skills as on the ability to integrate, to decide, and to fully participate in social and economic life.

By contrast, the absence of a significant effect of resilience to economic and social risks invites a more nuanced interpretation of the role of education as an immediate mechanism of protection against shocks. This result suggests that adaptation and retraining skills, although important, do not automatically translate into an observable improvement in living standards, particularly in the short term. They may instead function as shock absorbers that limit the deterioration of economic conditions without necessarily generating substantial gains. This distinction reinforces the idea that education produces differentiated effects depending on the channels considered, with some acting on raising living standards and others on preventing vulnerability. The control variables also provide important insights: the positive effect of age reflects a life-cycle logic and the progressive accumulation of experience, while the gender effect highlights the persistence of structural economic inequalities unfavorable to women, despite comparable levels of education. Finally, the absence of a significant territorial effect suggests that, once educational dimensions are taken into account, urban–rural gaps tend to fade, underscoring the equalizing potential of education when it is sufficiently widespread. Overall, the results argue for integrated educational policies that combine equitable access, learning quality, and strong articulation with labor markets and social institutions.

6 Conclusion

This study highlights the fundamental role of education as a multidimensional lever for reducing economic inequalities, going beyond a strictly income-centered approach to incorporate structural dimensions related to opportunities, autonomy, social mobility, and civic participation. The results show that education operates primarily when it enables effective professional integration, enhanced decision-making capacity, and a break in the mechanisms of intergenerational reproduction of inequalities. It thus appears as a factor that transforms economic trajectories, capable of converting educational resources into tangible improvements in living standards. The importance of productive capacities also underscores that education fosters value creation through innovation, initiative, and problem-solving, thereby strengthening individuals' economic position. By contrast, the absence of a direct effect of resilience to risk serves as a reminder that education does not constitute an immediate remedy for all forms of vulnerability, but rather operates through differentiated channels and time horizons. These findings confirm the relevance of the capabilities approach by showing that education reduces inequalities when it expands real freedoms and opportunities for action, rather than when it is limited to the formal accumulation of credentials.

With regard to policy implications, the results emphasize that the effectiveness of education as an instrument for reducing inequalities depends strongly on the quality and equity of the public policies implemented. The persistent existence of gender-related gaps shows that education alone is not sufficient to neutralize deeply rooted structural inequalities and must be accompanied by complementary mechanisms that promote equal access to economic opportunities. Similarly, the attenuation of territorial differences once educational dimensions are taken into account suggests that education can play a powerful equalizing role when it is sufficiently widespread and aligned with local realities. This study therefore calls for viewing education as a central pillar of an integrated social justice strategy that combines educational investment, institutional inclusion, and coherence with labor markets. Finally, it opens avenues for future research on the differentiated effects of education across socio-economic contexts, levels of schooling, and social groups, in order to refine the understanding of the conditions under which education can sustainably contribute to reducing economic inequalities.

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