

Exploring Risk Factors of Early School Leaving in the Republic of Moldova

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DOI: 10.63467/all15.art11

Abstract

This study explores the determinants of early school leaving in the Republic of Moldova, with a focus on individual-level and contextual risk factors that shape young people's educational trajectories. Based on data from the 2020 Generations and Gender Survey and using binary logistic regression, the analysis identifies key predictors associated with increased likelihood of educational discontinuation among youth.

The results highlight the significant impact of parental education, with youth whose parents have completed only lower secondary education being more likely to leave school early. Rural residence also emerges as a strong predictor, reflecting disparities in access to educational and transport infrastructure, as well as broader socio-economic disadvantages in non-urban areas. Gender differences are evident, with boys more likely to disengage from education, pointing to the influence of gendered socialization patterns. Additionally, early parenthood (before the age of 19) and growing up in larger families (three or more children) are significantly associated with higher odds of early school leaving. These findings emphasize the need for targeted, inclusive, and context-sensitive educational policies that address both structural inequalities and individual-level vulnerabilities.

Keywords: education, early school leavers, logistic regression, determinants.

JEL Classification: I21, I24, J13.

1. Introduction

Education is widely recognized as a key driver of social integration, economic development, and individual well-being. Beyond its role in transmitting knowledge and skills, it fosters the development of human capital and promotes social mobility. In this context, the quality and accessibility of education are critical determinants not only of individual life trajectories, but also of a nation's competitiveness at regional and global levels (Baciu, 2014). Education also functions as a key mechanism for reducing social inequality by promoting equal opportunities and mitigating intergenerational disadvantage (Lauder et al., 2006). However, early school leaving constitutes a major disruption in educational trajectories, significantly limiting the education system's capacity to act as a driver of social integration and human capital development.

Early school leaving (ESL) is commonly defined as the situation in which young people aged 18 to 24 have attained at most lower secondary education, corresponding to level 2 or below of the International Standard Classification of Education (ISCED), and are no longer enrolled in any formal education or training (European Commission, 2013). This operational definition is also used in the Republic of Moldova across national statistical reporting (National Bureau of Statistics, 2024), strategic education policy documents (Guvernul Republicii Moldova, 2023), and international monitoring frameworks (ETF, 2020). ESL reflects the premature disengagement of young people from the education system, occurring prior to the acquisition of qualifications and competencies required for effective labor market integration or continued educational participation.

The socioeconomic context, demographic shifts, and evolving education policies have exerted a significant influence on the education system in the Republic of Moldova. While there has been a

measurable increase in educational attainment among the youth population, ESL continues to represent a persistent structural issue. This paper investigates the determinants of ELS in the Republic of Moldova, with particular attention to individual characteristics and some contextual factors that influence young people's educational trajectories. By identifying and analyzing the key risk factors associated with school disengagement, the study aims to generate a more nuanced understanding of the mechanisms that hinder educational attainment and contribute to the reproduction of social inequality.

2. Literature Review

Early school leaving is a multidimensional phenomenon influenced by a combination of individual, social, and institutional factors, widely studied in both academic and policy contexts. These include poor academic performance, low motivation, socio-economic disadvantage, low parental education, grade repetition, school segregation, and weak career guidance. Its long-term consequences include increased unemployment, social exclusion, and reduced access to services (European Commission/EACEA/Eurydice/Cedefop, 2014).

Recent EU-level research reinforces that ESL results from the interplay between individual, institutional, and national contextual factors. Socio-economic disadvantage, low parental education, minority background, rural residence, and weak support systems remain key risk factors across Member States. Institutional variables, such as poor teacher-student interaction, grade repetition, and lack of career guidance, further amplify dropout risk (van der Graaf et al., 2019).

Studies on Romania reveal that ESL is strongly associated with a cluster of micro-level risk factors, including gender (male), ethnicity (especially Roma), absenteeism, academic underachievement, low school motivation, deviant behavior, and negative attitudes toward education. Children with special educational needs or disabilities are particularly vulnerable, as are those involved in early marriage, household labor, or caregiving roles. Family-related factors

such as low socio-economic status, low parental education, poor parental involvement, and family instability (e.g., divorce, migration, or unemployment) further increase the risk. The presence of school dropout or early school leaving models within the family also plays a significant role in shaping children's educational trajectories (Alexa & Baci, 2021).

National reports concerning the Republic of Moldova show that ESL rate has remained persistently high over recent decades, averaging approximately 21%, with a moderate decline to 17.5% in 2023 (National Bureau of Statistics, 2024). Despite this downward trajectory, the national ESL rate continues to exceed the 2023 EU average of 9.5% (Eurostat, 2024). Pronounced disparities are observed by area of residence and gender, with higher rates in rural areas and among boys. According to the European Training Foundation (2020), Moldova faces broader systemic challenges in the education sector, including a sharp decline in student enrolment, intensive youth migration, and a relatively static educational infrastructure. In rural areas, in particular, the network of educational institutions no longer corresponds to the actual distribution of the school-age population, reflecting inefficiencies in resource allocation and accessibility constraints.

A secondary analysis of the 2014–2015 School-to-Work Transition Survey data revealed that ESL remains a persistent phenomenon in the Republic of Moldova, with 21–22% of youth aged 18–24 having left the education system prematurely. These individuals as a rule possess no more than lower secondary education and are not engaged in any formal or non-formal training. The main self-reported reasons for leaving school include economic hardship (20%), lack of interest in school (15%), desire to work (10.7%), and learning difficulties (10%). Regression analysis identified significant predictors of early school leaving, including rural residence, self-perceived poor household economic status, and low parental education levels. The probability of remaining at a low educational level increases with age, particularly for youth from socio-economically disadvantaged backgrounds (Gagauz, Buciuceanu-Vrabie, & Pahomii, 2017).

Empirical evidence from national research indicates also that early school leaving is a key predictor of NEET status among young people in the Republic of Moldova. A significant share of those not in employment, education, or training are former early school leavers who possess only lower levels of education and lack professional qualifications (Gagauz & Crîșmaru, 2024). This limited educational attainment substantially reduces their chances of integration into the formal labor market and increases their exposure to informal employment and long-term economic vulnerability. The likelihood of remaining outside education or training rises with age, reinforcing patterns of marginalization and perpetuating socio-economic disadvantage throughout the life course (Crîșmaru, Gagauz, & Buciuceanu-Vrabie, 2018).

Thus, in the context of the Republic of Moldova, ESL is not only widespread but also strongly associated with socio-economic vulnerability, limited access to educational and employment opportunities, and heightened risk of becoming NEET. While previous research has identified key risk factors and structural disparities, further empirical investigation is needed to deepen the understanding of how these variables interact and to identify the most vulnerable youth profiles.

3. Data and Methods

This study aims to examine the determinants of early school leaving in the Republic of Moldova, with a specific focus on identifying individual-level and some contextual risk factors that influence young people's educational trajectories. It draws on data from the Generations and Gender Survey (GGG, 2020), conducted in the Republic of Moldova on a probabilistic sample, which included 202 Primary Sampling Units and 19,948 households. The survey is nationally representative (excluding the Transnistrian region) and allows for disaggregation by area of residence (urban and rural) and development regions (North, Centre, South, and Chișinău municipality). The GGS dataset provides a robust empirical basis for the analysis of early school leavers, enabling the examination of a wide range of individual-level socio-economic characteristics, as well as contextual factors related to the social and family environment. The

analysis relies on weighted data adjusted for age and sex, ensuring the statistical representativeness of the sample and the validity of inferences regarding early school leaving in the Republic of Moldova.

Two groups of early school leavers were delineated for the purpose of the analysis: individuals aged 18–24 ($n = 325$) and, as a control group, individuals aged 25–35 ($n = 1128$). Both groups include only those who have completed at most lower secondary education and who are not currently enrolled in any form of education or vocational training.

To identify the factors that increase the likelihood of belonging to either group of early school leavers, binary logistic regression was employed. This method models the relationship between multiple independent variables and a dichotomous dependent variable. The model included socio-demographic (sex, age, marriage, parenthood, educational attainment), and social and family-related predictors relevant to the young population (place of residence, household composition, and parental education). The regression was estimated using the Enter method, which involves entering all selected predictor variables into the model simultaneously. This approach allows for assessing the independent contribution of each variable while controlling for the effects of the others, ensuring a comprehensive analysis of the factors influencing early school leaving in both age cohorts.

4. Results

Binary logistic regression models were applied to identify the individual and contextual determinants associated with early school leaving among two distinct age cohorts: individuals aged 18–24 and, as a reference group, those aged 25–35. Both groups include individuals with no more than lower secondary education who were not enrolled in any form of education or vocational training at the time of the survey. The inclusion of the 25–35 age group as a reference cohort is based on the assumption that, by the age of 25, the vast majority of young people have exited the education system. As such, this group allows for a more stable and complete

assessment of educational attainment and related outcomes. It offers an analytical baseline for examining the long-term effects of early school leaving and for identifying the structural and individual-level factors that contribute to sustained low levels of education. The comparison between the two age groups thus facilitates a better understanding of the persistence and evolution of educational disadvantage over time.

The results for the 18–24 age group ($n = 325$) indicate that rural residence is one of the most significant predictors, with individuals living in rural areas being nearly three times more likely to leave school early compared to those residing in urban settings ($OR = 2.921$; $p < .001$). Another strong predictor is early marriage, with those who married between the ages of 15 and 19 having over four times higher odds of early school leaving than those who married later ($OR = 4.342$; $p < .001$). Family size also appears to play a role; respondents with more than two siblings show a significantly lower likelihood of school retention ($OR = 0.586$; $p < .05$), possibly reflecting constraints on household resources or limited parental support. Other variables, such as parental education, early parenthood, and sex, did not reach statistical significance in this younger cohort, although the father's level of education approached the significance threshold (Table 1).

	Exp(B)	Sig.	IC 95%
Sex (ref.=female)	.837	.518	.488 - 1.435
Area of residence (ref.= urban)	2.921	.000***	1.650 - 5.170
Father completed only lower secondary education (ref.=upper secondary or higher)	1.633	.071	.959-2.781
Mother completed only lower secondary education (ref.=upper secondary or higher)	1.405	.219	.817 - 2.417
First marriage at age 15–19 (ref.= ≥ 20)	4.342	.000***	2.489- 7.574
First parenthood at age 15–19 (ref.= ≥ 20)	.836	.558	.459 - 1.522
Number of siblings (ref. = ≤ 2)	.586	.022*	.371 -.927
Number of observation = 325			

*Table includes only statistically significant predictors ($p < 0.05$) from the full model.

The initial model included a broader set of individual-level covariates.

All variables are binary; reference categories are indicated in parentheses. Exp(B) represents the odds ratio.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Source: Generation and Gender Survey (GGS), 2020.

Table 1. Key predictors of early school leaving, 18-24 years (logistic regression model) *

In contrast, the model for the 25–35 age group ($n = 1128$) identifies a broader and more robust set of statistically significant predictors. Male respondents are significantly more likely to be early school leavers than their female counterparts ($OR = 1.833$; $p < .001$), indicating a persistent gender gap. Rural origin remains a powerful risk factor ($OR = 2.053$; $p < .001$), consistent with the findings observed in the younger group. Additionally, both father's and mother's lower levels of education are strongly associated with an increased likelihood of early school leaving ($OR = 1.994$ and $OR = 2.258$, respectively; $p < .001$), underlining the intergenerational transmission of educational disadvantage. Early parenthood also plays a significant role, with those becoming parents before the age of 20 having substantially higher odds of early school leaving ($OR = 1.797$; $p < .01$). In this older cohort, family size also functions as a risk factor: respondents with more than two siblings are more likely to have discontinued their education prematurely ($OR = 1.637$; $p < .001$). Unlike in the younger group, early marriage is not a statistically significant predictor among respondents aged 25–35, which may be explained by the greater variability in life trajectories and compensatory mechanisms that occur over time (**Table 2**).

	Exp(B)	Sig.	IC 95%
Sex (ref.=female)	1.833	.000***	1.456 - 2.308
Area of residence (ref.= urban)	2.053	.000***	1.638 - 2.575
Father completed only lower secondary education (ref.=upper secondary or higher)	1.994	.000***	1.565 - 2.541
Mother completed only lower secondary education (ref.=upper secondary or higher)	2.258	.000***	1.773 - 2.877

First marriage at age 15–19 (ref.= ≥ 20)	.921	.623	.663 - 1.279
First parenthood at age 15–19 (ref.= ≥ 20)	1.797	.001**	1.267- 2.548
Number of siblings (ref. = ≤ 2)	1.637	.000***	1.314 -2.040
Number of observations = 1128			

*Table includes only statistically significant predictors ($p < 0.05$) from the full model.

The initial model included a broader set of individual-level covariates.

All variables are binary; reference categories are indicated in parentheses. Exp(B) represents the odds ratio.

*** $p < 0,001$; ** $p < 0,01$; * $p < 0,05$

Source: Generation and Gender Survey (GGS), 2020.

Table 2. Key predictors of early school leaving, 25-35 years (logistic regression model) *

5. Discussions

The results of this study, along with the comparative analysis of the two age cohorts, reveal both converging and diverging patterns in the predictors of early school leaving. Rural residence consistently emerges as a significant determinant in both age groups, underscoring persistent spatial inequalities in access to education. However, other factors, such as parental education and early parenthood, exert a stronger and more statistically robust influence among individuals aged 25–35, suggesting a cumulative effect whereby early disadvantages consolidate into long-term educational outcomes. The fact that sex is a significant predictor only in the older cohort may indicate that gender-based vulnerabilities become more pronounced or entrenched over time. Furthermore, the number of siblings demonstrates a contrasting effect across the two groups: while it appears as a protective factor in the 18–24 age group, it acts as a risk factor in the 25–35 cohort, potentially reflecting shifts in household dynamics and resource allocation across the life course.

These findings support the broader argument that increasing access to education alone does not eliminate structural inequalities. The family environment remains a key determinant of young people's educational trajectories, shaping their opportunities and constraints in line with

socio-economic status. Concepts such as *stratified socialization*, *stratified agency*, and *stratified opportunities* illustrate how values, decision-making capacities, and access to resources are distributed unequally across social groups. Families not only transmit educational aspirations but also mediate access to key resources, such as quality schooling, health services, and social capital, which collectively shape life chances and reinforce existing disparities (Billari, Hiekel, & Liefbroer, 2019).

Place of residence further amplifies these patterns of inequality. Early school leaving is significantly more prevalent among youth in rural areas, where access to educational and transport infrastructure remains limited. Additionally, rural communities are often characterized by lower levels of adult educational attainment, which reduces the availability of learning support within the household and perpetuates intergenerational educational disadvantage (Crîșmaru, Gagauz, & Buciuceanu-Vrabie, 2018).

The study also reaffirms the existence of gender disparities, particularly among older youth. Males are significantly more likely to leave school early, a finding that may be explained by gender-specific socialization processes and prevailing attitudes toward education and work. Early parenthood, especially childbirth before the age of 19, emerges as a strong predictor of educational discontinuity, likely due to the increased caregiving responsibilities and reduced institutional support. Finally, young people from large families (three or more children) are more likely to attain only low levels of education, possibly due to limited household resources and lower parental investment per child.

However, this study has certain limitations, as it does not account for broader structural and institutional factors that may influence early school leaving. For example, previous research based on qualitative data has shown that the perceived lack of employment prospects following graduation can discourage young people from continuing their education, contributing to educational disengagement and long-term disadvantage (Crîșmaru, Gagauz, & Buciuceanu-Vrabie, 2018). Thus, beyond family-related and residential factors, labor market conditions play a significant role in shaping young people's decisions to pursue further education

or vocational training. Depending on the broader economic context, the labor market can act either as an incentive or a disincentive for continued educational engagement. Large-scale analyses across OECD regions further demonstrate that ESL is closely linked to regional labor market dynamics. A higher availability of low-skilled employment opportunities often serves as a pull factor, drawing young people out of education prematurely. In contrast, policies such as delayed vocational tracking, early access to pre-primary education, and sustained investment in teacher training are consistently associated with lower dropout rates (Bonnet & Murtin, 2024).

Furthermore, numerous studies emphasize that reducing ESL requires more than general investment in education. Instead, the effectiveness of national responses depends on the implementation of coherent, evidence-based policies that integrate prevention, early intervention, and reintegration strategies (European Commission/EACEA/Eurydice/Cedefop, 2014; van der Graaf et al., 2019). Research also shows that strong welfare systems, inclusive education policies, and coordinated support services are essential for improving outcomes, particularly among vulnerable groups such as rural youth, low-income families, and early parents (Anghel, Voicu, & Neacșa, 2023).

6. Conclusions

This study reaffirms the central role of educational trajectories in shaping key life-course events such as marriage, parenthood, and labor market integration. The level of education attained by young people is strongly correlated with their socio-professional status, with family background emerging as a critical determinant of educational outcomes. A lack of social and economic capital within the family environment negatively affects both school participation and long-term social mobility. Young individuals from materially disadvantaged households, particularly those with low-educated parents, are significantly more likely to leave school early, reinforcing the intergenerational cycle of poverty and social exclusion.

The findings also underscore the significance of spatial and contextual factors. The degree of urbanization and local economic development substantially influence access to education, employment, and public services. The disproportionate concentration of early school leavers and inactive NEET youth in rural areas reflects a concerning trend toward the “ruralization” of educational disadvantage and a growing territorial polarization in youth opportunities.

Nevertheless, certain limitations of the present study must be acknowledged. While the analysis focuses on individual and family-level predictors, it does not fully capture the broader institutional, structural, and labor market dynamics that influence educational outcomes. In Moldova, the situation is particularly complex, shaped by high rates of youth migration, persistent economic instability, and limited employment prospects—factors that may discourage educational engagement and require further investigation.

However, to address early school leaving and its root causes effectively, education and training systems must become more preventive, inclusive, and responsive to the diverse needs of youth. This calls for a deeper understanding of the skills required for a successful transition to adulthood, and for ensuring equitable access to learning and professional development pathways. Education and employment institutions must recognize and support the aspirations, needs, and capabilities of all young people, particularly those facing structural disadvantage.

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