



EDUCATION PATHWAYS IN ROMA SETTLEMENTS: UNDERSTANDING INEQUALITY IN EDUCATION AND LEARNING

Findings from MICS6 in Kosovo, Montenegro, North Macedonia and Serbia*

*All references to Kosovo in this report should be understood to be in the context of United Nations Security Council Resolution 1244 (1999).

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Executive summary

In Europe, Roma children are among the most marginalized from their earliest moments of life, facing stereotypes, discrimination and exclusion. Empowering Roma children through inclusive quality education, which helps them develop the knowledge and skills necessary to thrive in society on an equal footing, is a key agenda for international communities to promote equity and justice.

While Roma people often receive attention as a disadvantaged social group, they differ in social, cultural and economic situations and have different educational experiences and outcomes. The diversity of the Roma population calls for renewed actions to identify and meet the needs of different Roma groups, as addressed by the European Union (EU) Roma Strategic Framework 2020-2030. This report is a contribution of the United Nations Children's Fund (UNICEF) to the call. The research examined the educational situations and outcomes of different groups of children in Roma settlements by using data from the sixth round of Multiple Indicator Cluster Surveys (MICS), which were conducted in Kosovo,¹ Montenegro, North Macedonia and Serbia from 2018 to 2020. This report presents key findings and implications for inclusive education strategies and policies.

Children in Roma settlements fall behind in education and learning: Compared to the national average, children in Roma settlements are less likely to attend school, more likely to be over-age and thus face higher risk of dropout, less likely to complete primary and secondary education, and have a lower chance of acquiring foundational skills across education levels, age groups and countries.² The out-of-school rates in Roma settlements have not changed much since the last round of MICS survey in all the countries except Montenegro. There is an urgent, continued need to address educational inequality by providing dedicated support to children facing educational challenges in Roma settlements.

School education is a driver for foundational skills development regardless of disadvantages: In Roma settlements in Kosovo and North Macedonia, completing an additional school grade is associated with an increase in the probability of acquiring foundational skills by 5–9 percentage points. We also found suggestive evidence that, within Roma settlements, children being engaged in child labour, having functional difficulties, and using a language at home that is not an official school language, develop foundational skills through school education as much as other children do if they can attend school. These findings reaffirm the importance of inclusive education as social mechanisms to help all children, including the most marginalized, acquire knowledge and skills necessary to achieve their full potential. Given the low school attendance rates in Roma settlements, bringing back out-of-school children in Roma settlements to school would be an effective approach to close the learning gap in the countries, although schooling alone may not be enough to fully achieve equitable learning outcomes.

Addressing the exclusion of marginalized children from school education: Despite the observed benefits of schooling, access to school education is not equal even within Roma settlements. Household wealth is negatively associated with risk of being out of school in Roma settlements in all the countries. Engagement in child labour is associated with an increased likelihood of school exclusion by 11–29 percentage points in Roma settlements in Kosovo, North Macedonia and Serbia. In Kosovo, the risk of school exclusion in Roma settlements also increases for girls, children with functional difficulties, and those not living with both parents. These results suggest a need to assess the structural barriers disadvantaged children face and provide support to facilitate their school enrolment and attendance.

¹ All references to Kosovo in this report should be understood to be in the context of United Nations Security Council Resolution 1244 (1999)

² The word 'countries' in this report is used to refer to Kosovo, Montenegro, North Macedonia and Serbia. For Kosovo this should be understood strictly in the context of United Nations Security Council Resolution 1244 (1999).

Identifying and supporting at-risk students to reduce the risk of school dropout: Attending school does not guarantee that a student continues their schooling. The education pathway analysis suggests that a disproportionately large share of children of upper secondary school age in Roma settlements dropped out of school in their education trajectory. Thus, identifying such at-risk students before they drop out and supporting their school retention is crucial to improve internal efficiency and address inequality in education. In Roma settlements, the probability of over-age attendance, which is considered a risk factor for school dropout, is higher for students coming from poor families, having less educated parents, and not living with both parents across the countries and education levels. Collecting student information and diagnosing the risk of late entry and grade retention of these socioeconomically disadvantaged students would be important to ensure they attend the grade level expected for their age and prevent dropout.

Promoting school completion at the primary and secondary levels: Completing primary and secondary education is an important milestone for children to continue their learning at the next level and participate in the labour market with educational credentials. In Roma settlements, children from poor households, having less educated parents, and not living with both parents have a lower chance of completing primary and secondary education across the countries. Primary school completion rates are also lower for children who are engaged in child labour and have functional difficulties in Roma settlements in Kosovo, North Macedonia and Serbia. Providing support that helps these disadvantaged children complete basic education would be key to address educational inequality in the countries. We also found that, in Roma settlements, having parents who completed secondary education is associated with a decrease in the likelihood of being out of school in Kosovo, Montenegro and North Macedonia. This implies that attaining secondary education could be key to breaking the cycle of being educationally disadvantaged over generations in Roma settlements.

Giving priority to removing bottlenecks at the critical moments in the education pathway: The education pathway analysis identified the moments that present significant challenges for children in Roma settlements to continue their education. Across the countries, entry into primary education; dropout during lower secondary education; over-age attendance at lower secondary level; and transition to upper secondary education represent the moments in which many children in Roma settlements face challenges to continue education. In North Macedonia, dropout during primary education is another challenge to be addressed in Roma settlements. In Serbia, transition to lower secondary education is also a challenge that children in Roma settlements face. Giving priority to removing educational bottlenecks at critical moments would be an effective approach to address inequalities in education participation in these countries.

Promoting foundational skills development at school and home for marginalized children: Several factors were found to be associated with the acquisition of foundational skills in Roma settlements, even after controlling for educational attainment and other demographic and household characteristics. Since the analytical models account for the school grade completed, the observed associations are likely to capture the variation in foundational skills development that is not explained by school attendance and completion, such as differences in school quality and learning environment at home. For instance, in Roma settlements, girls in Kosovo and children coming from poor families, having less educated parents, and having functional difficulties in North Macedonia face a lower chance of acquiring foundational skills in reading and/or numeracy, holding educational attainment constant. The findings suggest the importance of providing these disadvantaged children with quality education at school and learning support at home to further close the learning gap in these countries.

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List of abbreviations

AME	Average Marginal Effects
CRC	Convention on the Rights of the Child
EA	Enumeration Area
EC	European Commission
ECDI	Early Childhood Development Index
EU	European Union
ICERD	International Convention on the Elimination of All Forms of Racial Discrimination
MICS	Multiple Indicator Cluster Surveys
NEET	Not in Education, Employment, or Training
OR	Odds Ratio
OSF	Open Society Foundations
PPS	Probability Proportional to Size
UK	United Kingdom
UNDP	United Nations Development Programme
UNICEF	United Nations Children’s Fund



Introduction

In Europe, Roma children are among the most marginalized from their earliest moments of life, including in the areas of educational participation and learning outcomes.³ Their school attendance rates are lower than their peers, starting from pre-school, as are their completion rates. Many of them acquire neither foundational learning skills nor the skills needed for employment adequately. The exclusion from schooling and learning results in a higher percentage of Roma than non-Roma not in education, employment or training (NEET).

Many Roma children face various economic, social and cultural barriers to education and learning. These include poverty, language, travelling/mobility, and an insufficient understanding of and respect for Roma population. They often face direct and implicit discriminatory practices in schools, and the prevalence rate of functioning difficulties is higher among Roma children, compelling them to study in segregated school and classroom (Brüggemann, 2012; FRA, 2018a; O’Nions, 2020; Roma Education Fund, 2012). Many of them lack instruction using their mother-tongue as well (Robayo-Abril and Millán, 2019). These factors, among

³ According to European Commission (2021), “The umbrella-term ‘Roma’ encompasses diverse groups, including Roma, Sinti, Kale, Romanichels, Boyash/Rudari, Ashkali, Egyptians, Yenish, Dom, Lom, Rom and Abdal, as well as Traveller populations (gens du voyage, Gypsies, Camminanti, etc).”

others, impact school entry, attendance, retention and completion as well as learning outcomes and contribute to consistent and systematic exclusion.

These findings reaffirm Roma as an educationally disadvantaged group who requires interventions and support to ameliorate inequality in their educational opportunities and outcomes. However, the Roma population is not homogeneous. They are different in individual characteristics (e.g., language, engagement in child labour, and health condition) as well as household characteristics (e.g., residential place, family wealth, household size, and parents' education) and have different educational experiences and outcomes. Accordingly, some Roma children manage to enter, retain and complete school, while others drop out from school before completing compulsory education or never attended school. Similarly, some Roma children succeed in achieving high learning outcomes, while other Roma children do not learn adequately.

This raises the importance of understanding who are the Roma children facing the most severe educational disadvantages and who are Roma children having a successful education trajectory and outcomes. The European Union (EU) Roma Strategic Framework 2020-2030 calls for renewed attention to the diversity among Roma and requests its Member States and international communities to identify and meet needs of different groups of Roma as a guiding principle for Roma equality, inclusion and participation and for greater equality (European Commission, 2020). Analysis of diverse Roma population thus would provide practical insights into policy and programmes to support education and learning of Roma children in most need. However,

empirical evidence on educational gaps within Roma population is relatively scarce, while the educational disparity between Roma and non-Roma children has received more attention.

In order to fill in the knowledge gap, the present study uses household data from the sixth round of Multiple Indicator Cluster Surveys (MICS6) in Kosovo, Montenegro, North Macedonia and Serbia to examine educational situations and outcomes of different groups of children in Roma settlements from the following angles.

- Exclusion from school education
- Risk of dropping out of school
- Completion of primary and secondary education
- Educational pathway across the life course
- Development of foundational skills in literacy and numeracy

The new household data from the four Western Balkan countries, which capture children both in school and out of school, allow us to uncover educational gaps within Roma settlements and between children living in Roma settlements and those across the country. The MICS also allows international comparisons and analysis of trends over years. Findings of this study will inform policy and programmes as well as advocacy to realize quality, inclusive education and learning for Roma children, thereby addressing persistent equity and quality gaps among some of the region's most marginalized children.



1. Setting the context of Roma

1.1 A need for Roma inclusion

The Roma are an ethnic group of Indo-Aryan people who have resided in Europe since their migration from India. Approximately 12 million Roma people are estimated to live in Europe (Open Society Foundations – OSF, 2019), forming the largest ethnic minority group in Europe (European Commission, 2021). Many Roma live with severe social and economic marginalization and exclusion. Roma face higher rates of poverty and lower chances of attending school and participating in the labour market, while confronting intolerable discrimination and a lack of access to social services and support (FRA, 2016). Improving their living conditions through social and economic inclusion has been recognized as a challenge in the region from both normative and economic perspectives.

The principle of racial and ethnic equity has been established as a moral norm. People are equally entitled to the rights to life including food, education, work, health and liberty regardless of who they are and where they come from. Inclusion and equal treatment of Roma people are therefore a moral principle underlying the conception of human rights that are universal and inalienable. Accordingly, several international frameworks legitimize Roma inclusion as a human-rights approach. The International Convention on the Elimination of All Forms of Racial Discrimination (ICERD) sets out a legal framework to eradicate discrimination on grounds of race or ethnicity. The Convention on the Rights of the Child (CRC) serves as the foundation for ensuring the social, economic, cultural, civil, political and protection of the rights of children without

distinction of any kind, such as race, sex and language. In respect to educational rights, the global Sustainable Development Goal (SDG) number four calls for actions to achieve inclusive, equitable quality education and life-long learning for all by 2030.

Roma inclusion is also an important lever for economic development. Evidence suggests that integration policies

that include interventions in education and training generate medium- and long-term economic, budgetary and fiscal benefits through increased employment and wage (Ciaian et al., 2018). The labour force participation of Roma, whose population is relatively younger than non-Roma, is also considered instrumental for maintaining economic growth, given a decreasing working population in some of the countries in the region (Robayo-Abril and Millán, 2019).

1.2 Regional and national initiatives for Roma inclusion

Regional framework for Roma inclusion

Several key frameworks have guided efforts to secure the rights of Roma people and improve their socioeconomic status. The Decade of Roma Inclusion 2005–2015 provided the foundations for regional, national and local stakeholders to coordinate their initiatives towards the integration of Roma. The European Union (EU) Framework for National Roma Integration Strategy, which was updated as the EU Roma Strategic Framework for Equality, Inclusion and Participation 2020–2030, calls for national actions to give all Roma the opportunity to realize their full potential (European Commission, 2020). Funding schemes are made available to EU member states for strategy implementation including the European Social Fund and European Regional Development Fund that aim at strengthening social and economic inclusion and cohesion. The EU Council adopted a Recommendation on Roma Equality, Inclusion and Participation in 2021, inviting member states to adopt national Roma strategic frameworks (The Council of the European Union, 2021).

EU member states also have a mandate and legal requirement to promote the status of ethnic minorities, including Roma. The Treaty of the European Union's founding value is "respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities" (European Union, 2012b). In Article 21 of the Charter of Fundamental Rights, the EU prohibits any discrimination based on any ground (European Union, 2012a). In accordance with EU Directive 2000/43, member states are required to take measures to implement the principle of equal treatment between persons irrespective of racial or ethnic background (European Union, 2000).

The EU also plays a catalytic role in strengthening Roma inclusion in non-EU member states. For instance, in 2019, leaders in the Western Balkans adopted the Declaration of Western Balkans Partners on Roma Integration with the EU Enlargement Process. This is a renewed commitment to accelerate their efforts to realize equality and full integration of Roma as part of the accession process to the EU (Regional Cooperation Council, 2019).

Education initiatives

Governments have developed and implemented policies and programmes to promote the rights of Roma children, including initiatives to support education and learning. In Montenegro, the Ministry of Human and Minority Rights adopted the Strategy for Social Inclusion of Roma and Egyptians 2016–2020 with its annual action plans to improve enrolment, reduce dropout, and promote school success (Ministry of Human and Minority Rights, 2020), with the new strategy for 2021–2025 under preparation. The government of North Macedonia adopted its first national strategy for the Roma in 2004 and renewed the strategy for the period 2014–2020 to address inequalities in areas of education, health, employment, housing and culture. In Serbia, the government adopted the Strategy for Social Inclusion of Roma 2016–2025 aiming to reduce poverty and eliminate discrimination against Roma in strategic areas including education. Building on lessons learned from the implementation of the Strategy and Action Plan for Integration of Roma, Ashkali and Egyptian Communities 2009–2015, the Kosovo institutions launched the Strategy for Inclusion of Roma and Ashkali Communities in Kosovo Society 2017–2021, with strategic objectives to accelerate inclusion and provide equal opportunities for personal development, training and education (Republic of Kosovo, 2017).

There are also regional education initiatives targeting Roma children and youth. The Regional Cooperation Council has been implementing the Roma Integration 2020 project in the Western Balkans and Turkey since 2016 with funding support from EU and the OSF. The project supports governments in reducing the socioeconomic gap and promoting integration of the Roma population in key sectors including education and employment (Regional Cooperation Council, 2021). Another regional initiative is the EU Regional Action for Increasing Education and Employment Opportunities for Roma Youth, conducted by the Roma Education Fund since 2018 with financial contributions from the European Commission (EC) and OSF. The project aims to improve the provision of quality education and learning outcomes of Roma children and raise employability of Roma youth in the Western Balkans countries and Turkey. Over 1,000 children and youth were reached and received support through the project in 2019 (Roma Education Fund, 2020).

UNICEF's education support

As a champion for children's rights, the United Nations Children's Fund (UNICEF), in partnership with the government has been engaged in promoting inclusive quality education and learning with a focus on the most vulnerable – including Roma children. UNICEF also addressed emerging educational and learning needs of Roma children under the COVID-19 crisis. Examples of UNICEF's support include, among others:

- **Albania:** UNICEF provided learning devices to 10,500 disadvantaged children, including Roma children, in partnership with Vodafone.
- **Bulgaria:** UNICEF together with OSF and the Roma Education Fund supported the Study on Roma Early Years Inclusion to inform the new national strategy for inclusion and participation of Roma in 2021–2030.
- **Bosnia and Herzegovina:** UNICEF provided Roma children with quality early childhood education and care services and online learning through the Roma Early Years Network.
- **Croatia:** UNICEF supports early learning for Roma children not enrolled in kindergarten, while promoting skills development of Roma adolescents through the UPSHIFT programme. During the pandemic, UNICEF provided Roma children with digital devices and SIM cards as well as mentoring programmes to ensure the continuation of learning.
- **Kosovo:** UNICEF supports school enrolment/retention of Roma children in Mitrovica region through social inclusion programmes, while promoting early learning and twenty first century skills building in Roma communities. During the pandemic, UNICEF provided hygiene packages, learning materials/devices and early childhood development platforms with content in Roma language.
- **Moldova:** UNICEF helped educators use an individualized, child-centred approach in supporting education and well-being of 159 Roma children through capacity development.
- **Montenegro:** UNICEF trained preschool teachers on Roma children inclusion, while providing learning support to Roma students in primary and secondary education. UNICEF, in cooperation with the Red Cross, distributed paper-based learning materials to Roma and Egyptian students who do not have access to digital devices and internet during the COVID-19 pandemic.
- **North Macedonia:** UNICEF supported the development of a concept for inclusive education, which covers the inclusion of Roma children who were not included in the teaching process and are above the age limit for enrolment in the respective grade in primary education. To ensure early inclusion of Roma children, pre-school teacher capacities were strengthened to support early identification and development of Roma children through a pilot project.
- **Serbia:** UNICEF supported the development of drop-out prevention mechanisms as part of a model programme that aims to reduce child marriage among Roma girls. As a COVID-19 response, UNICEF, in cooperation with the EU, provided learning and psychosocial support to Roma students through the project 'Bridging Digital Divide in Serbia for the Most Vulnerable Children'.



2 Literature review on education of Roma

2.1 Empirical evidence

Empirical evidence on the educational situations of Roma is relatively scarce due to the availability of data that capture Roma children who may or may not be in school. Using available national and regional data, however, several studies shed light on unfavourable educational situations and outcomes of Roma children (Brüggemann, 2012; FRA, 2014, 2018; Kertesi and Kézdi, 2013; Robayo-Abril and Millán, 2019; Wilkin et al., 2010). The available evidence suggests consistent patterns that, on average, Roma children fall behind in both education participation and outcomes compared to non-Roma children, regardless of efforts that have been made over decades.

Entry/enrolment

Starting formal schooling is an important milestone in the education trajectory of children. However, the literature suggests that many Roma children have never participated in formal education. According to a study analysing data from the United Nations Development Programme (UNDP) Regional Roma Survey 2011, which assessed educational situations in Roma settlements in 12 countries in Central and Southeast Europe, the proportion of children aged 10–18 who have never attended schools is higher for Roma children than non-Roma counterparts in all of the countries (Brüggemann, 2012). For instance, over 20 per cent of Roma children

have not received school education in Albania, Bosnia and Herzegovina, Moldova and Montenegro, while the percentage was 2 per cent at most for non-Roma children (Brüggemann, 2012). The Regional Roma Survey in 2017, which was implemented in the Western Balkan countries, also suggests that net enrolment ratios in compulsory education are lower for Roma children than non-Roma counterparts with the largest gap of 31 percentage points in Albania (Robayo-Abril and Millán, 2019).

The literature also provides suggestive evidence that many Roma children enter school only after the age of seven, although a similar trend is observed for non-Roma children in some countries as well (Brüggemann, 2012). Late entry to education could increase risk of dropping out of the school system before completing compulsory education. In fact, starting school late is identified as the most common reason for Roma children not attending compulsory education in most EU member states (FRA, 2014).

Attendance

Enrolment in school does not mean being present at school and learning in the classroom. Empirical evidence suggests that Roma students are more likely to be absent from school, which increases the risk of falling behind and dropping out. The Regional Roma Survey in 2011 found that the proportion of children aged 7–15 who attend school but are absent for at least four days a month is significantly higher for Roma children than non-Roma counterparts in the majority of countries (Brüggemann, 2012). For instance, about 31 per cent and 25 per cent of Roma students missed at least four school days in a

month in Moldova and Albania, whereas the percentage is merely 2 per cent for non-Roma students (Brüggemann, 2012). A study in the United Kingdom (UK) also found that Roma, Gypsy, and traveller students have significantly higher levels of both authorized and unauthorized absence at both primary and secondary levels, compared to their counterpart peers (Wilkin et al., 2010).

Dropout/school retention

Unfortunately, not all students are able to remain in school and continue their education since some drop out of school before completing a certain education level. Available studies indicate that Roma children are more likely to experience dropout than non-Roma counterparts. A study in the UK using the school census 2003–2008 found that, even though the overall pattern of dropout from year to year is similar, the proportion of students who dropout at each stage is higher for Roma, Gypsy, and traveller students (Wilkin et al., 2010). For instance, only 51 per cent of minority students who were in school at Year 6 remained in school in Year 11, compared to 92 per cent for other students (Wilkin et al., 2010). The Regional Roma Survey 2011 also provides suggestive evidence that Roma children are more likely to leave school systems earlier than non-Roma children (Brüggemann, 2012).

Completion

Completing certain education levels, which may be conditional on the minimum days of attendance and/or passing an examination, is a milestone that opens a path to further education and employment. Those who complete a final year of given education level enjoy better employment and earnings if they acquire additional



knowledge and skills as human capital theory suggests (Becker, 1962) and/or an educational credential that signals their productivity in the labour market (Spence, 1973).

Empirical evidence suggests that school completion rates among Roma children are low at both compulsory and non-compulsory education levels. For example, the 2011 Regional Roma Survey shows that the proportion of Roma youth aged 14–20 who completed primary education remained low in many countries, including Albania (63 per cent), Montenegro (63 per cent), Moldova (67 per cent) and Bosnia and Herzegovina (70 per cent) (Brüggemann, 2012). Completion rates at lower secondary education are much lower. The share of Roma youth aged 17–23 who completed lower secondary level was as low as 23 per cent in Albania, 32 per cent in Montenegro, 37 per cent in Moldova and 42 per cent in Bosnia and Herzegovina. (Brüggemann, 2012). Compared to non-Roma counterparts, the probability of completing compulsory education is lower for Roma children, particularly girls (Robayo-Abril and Millán, 2019).

Only a fraction of Roma youth complete upper secondary education, which is not compulsory in many countries. According to the Regional Roma Surveys in 2011 and 2017, completion rates among Roma youth were below 20 per cent in the majority of countries with the lowest being 3 per cent in Montenegro in 2017 (Brüggemann, 2012; Robayo-Abril and Millán, 2019). The FRA Roma survey on education in 11 EU member states similarly found that, on average, only 15 per cent of Roma youth aged 20–24 and 12 per cent of Roma youth aged 18–24 who were surveyed had completed upper secondary education (FRA, 2014). The gender gap in favour of male youth is significant in Kosovo and Serbia where completion rates are higher for male Roma by over 10 percentage points than for female Roma (Robayo-Abril and Millán, 2019).

Importantly, non-Roma children do not face the same degree of educational challenge as Roma children do. The Regional Roma Survey in 2011 shows that upper secondary completion rates of non-Roma counterpart children were higher than those of Roma children by 30–72 percentage points across participating countries (Kertesi and Kézdi, 2013). This trend is also confirmed by a more recent study, which indicates that 68 per cent of Roma youth aged 18–24 leave the school system before completing upper secondary education in nine EU countries, which is much higher compared to the general population (FRA, 2018b).

Transition

Disadvantaged children face multiple barriers to continuing their schooling and learning at critical transition points between education levels. A transition to the next level may be conditional upon successful completion of a previous cycle of education and the aspirations of students and their parents if not compulsory. A UK study using the school census found that over 20 per cent of Roma, Gypsy, and traveller students who were in the final grade of primary school disappeared in the first grade of secondary school, suggesting transition from primary to secondary school as the most vulnerable point for continued education (Wilkin et al., 2010).

Achievement

Going to school does not necessarily mean learning. About 200 million children and youths are estimated to leave school without acquiring the basic knowledge and skills necessary to thrive in society (UNESCO, 2013). This learning crisis hits the most marginalized children and youth hard (Brookings, 2012), with empirical evidence suggesting that Roma children also fall behind in learning.

In Central and Southeast Europe, self-reported literacy rates of Roma aged 15–24 remained low in some countries such as Albania (67 per cent), Moldova (75 per cent) and Montenegro (78 per cent) although the rates had increased over the years (Brüggemann, 2012). A recent study in the Western Balkans also suggests that Roma adults – particularly females – have lower levels of literacy than non-Roma neighbours (Robayo-Abril and Millán, 2019). A study analysing the standardized test data of 8th graders in Hungary in 2006 found that Roma students perform lower in math and reading by one standard deviation than non-Roma peers (Kertesi and Kézdi, 2013).

There is also an indication that such learning gaps emerge at an early stage of education and further increase at secondary education level. A statistical analysis using national data in the UK found that Roma, Gypsy, and traveller students perform lower than their counterpart peers already in Grades 1–2 but the learning gain from Grades 1–2 and Grades 3–6 does not differ much between the two groups (Wilkin et al., 2010). The findings suggest that these minority students fall behind from the start of formal schooling but can make progress as others do if they remain in school. However, the same study also found that minority students make less progress than their counterparts at secondary education level, controlling for student characteristics (Wilkin et al., 2010).



2.2 Barriers to education

The literature suggests that Roma children's schooling and learning are hindered by multiple factors. Some are rooted in their sociocultural uniqueness, while others are attributed to structural barriers embedded in education systems as well as individuals lacking understanding of cultural differences. These multi-dimensional factors are interlinked and create the environment that prevents Roma children from fulfilling their educational rights as other children do.

Poverty

The literature suggests that poverty explains, in part, the educational predicaments of Roma children due to their inability to pay for schooling and associated costs and need to engage in income-generating work or household chores in the absence of adequate social security support.

Financial ability: Although free and compulsory education has been established in many countries, financial constraints are recognized as a cause of educational disparity because parents need to cover informal schooling costs (e.g., books, transportation and food) as well as opportunity costs (i.e., the benefits lost due to school attendance such as forgone income from family business). In fact, poverty and financial burdens are reported as major barriers for Roma children not going to school even at compulsory levels according to studies conducted in Roma communities in Romania (Pantea, 2007) and the Western Balkans (Robayo-Abril and Millán, 2019). Empirical evidence also corroborates the role of socioeconomic status in determining Roma children's educational conditions. According to research that uses regression analysis to examine the relationship between ethnicity and educational status/outcomes, observed educational gaps between Roma children and non-Roma children are largely explained by socioeconomic status, with regards to enrolment (Robayo-Abril and Millán, 2019), dropout (Brüggemann, 2012), completion and achievement (Kertesi and Kézdi, 2013).

Child labour: One of the possible factors contributing to the unfavourable educational situations of Roma children, which is closely related to poverty, is child labour⁴. Child labour interrupts children's education and impedes their opportunity to develop basic competencies needed to engage in further learning, skills development and, in the long term, decent work. Child labour was reported as the reason for not attending school for 2 per cent of Roma children on average in 11 EU member states, though evidence suggests that the rate in Central and Eastern European countries could be much higher (FRA, 2014). In fact, a need for work was reported as a major reason for not attending school among male Roma in the Western Balkans (Robayo-Abril and Millán, 2019). A study examining the situation of children on the streets in Albania also found that 74 per cent of street children – whose activities include selling items, begging for money, recycling plastic and metal, and other informal jobs such as agriculture and cleaning – belong to Roma and Egyptian communities (ARSIS, et al., 2014). Another study of child labour and education among Roma children in Romania suggests that child labour can be both a driver and a consequence of Roma children's exclusion from education (Pantea, 2007). While for some children, school attendance was precluded because of their engagement in labour, other Roma children and parents noted that conditions or practices that led to their exclusion from school forced them to find work, and still others were engaged in both school and work (Pantea, 2007).

Early marriage

The spread of early marriage practices in Roma communities reduces opportunities for education, especially for girls. The risk of child marriage (i.e., being married under 18 years old) is much higher for Roma girls than non-Roma girls (Robayo-Abril and Millán, 2019) due to poverty, gender norms and cultural and social practices in the communities, among others. This affects the right of Roma children to participate in education and learning. For instance, according to a study in Croatia, marriage is the third most frequent reason for abandoning education among out-of-school Roma children aged 15 to 18, following to financial constraints and educational performance (Kunac et al., 2018). There is also a large gender difference with 20 per cent of girls and 6 per cent of boys reporting marriage as a reason for not attending school (Kunac et al., 2018). Among Roma women aged 20–49 in the Western Balkans region, those who were first married before age 18 have lower educational attainment compared to those who did not experience child marriage (Robayo-Abril and Millán, 2019).

Low educational expectation and aspirations

There is empirical evidence that some Roma families and children have lower levels of educational expectations and aspirations, which would limit the children's chance of enrolling in school and continuing education. This could partly be explained by the relatively low socioeconomic status of Roma families because educated parents with a high-status job are more likely to be aware of the importance of and invest in their child's education.

Parents' expectations and involvement in learning: The literature suggests the importance of parents' academic expectations and involvement in their child's learning for educational success (Castro et al., 2015). However, there is suggestive evidence that parents of Roma children have a lower level of educational expectations and engagement in their child's learning. In the Western Balkans, for instance, Roma parents are significantly less likely to expect their child to get tertiary education compared to their non-Roma counterparts, even though their aspirations do not differ by child's gender (Robayo-Abril and Millán, 2019). According to surveys administered to head teachers in the UK, over half of parents of Roma, Gypsy, and traveller students do not attend parents' consultations organized at school (Wilkin et al., 2010) due to various reasons.

⁴ Child labour refers to work that is mentally, physically, socially or morally dangerous and harmful to children and/or interferes with their schooling (ILO, 2021).

Child's educational aspirations: Educational aspirations could be another factor explaining the relatively low level of educational attainment and achievement of Roma children. Evidence suggests that higher educational aspiration is positively associated with academic achievement (Khatab, 2015). However, Roma children have a lower level of educational aspiration than non-Roma children (Brüggemann, 2012; Dimitrova et al., 2018), which may be due to their learning environment at home and school as well as low expectations of parents and school.

Early childhood and pre-school education

The achievement gap that exists already at the beginning of formal education may be explained in part by the experience of early learning. Well-designed early childhood education programmes have lasting positive effects on education attainment and learning achievements, as well as social development – particularly for economically disadvantaged children (Barnett, 2008; Pianta et al., 2009). However, pre-school enrolment and attendance rates are lower for Roma children compared to their non-Roma counterparts, and the differences are statistically significant in many countries in Central and Southeast Europe (Brüggemann, 2012; Robayo-Abril and Millán, 2019). There is also evidence that a lack of pre-school experience explains the high dropout rates of Roma children even after controlling for individual and household characteristics (Brüggemann, 2012).

Many Roma parents perceived multiple barriers to their children's participation in pre-school. Demand-side factors include financial constraints and perceived value of pre-schooling. Supply-side factors include availability of preschool facilities, school's preference over non-Roma children, practices to send Roma children to segregated classes, as well as teachers' lack of knowledge to address cultural and behavioural differences (Lukšík, 2019; Robayo-Abril and Millán, 2019).

Travelling/mobility

Travelling and mobility poses another challenge for some Roma children in school enrolment, attending class and learning as expected.

Travelling: The literature suggests that low school enrolment rates and high absence rates among Roma children are also attributed to their travelling and mobility. For example, in North Macedonia, the requirement that children enrol in school in the locality listed as their permanent residence on their parents'

personal documents was reported as precluding many Roma students who travel during the school year from enrolling in education (Roma Education Fund, 2014). Unable to enrol in school, some are placed in day centres for children in street situations, which often lack equivalency with formal education provided by schools (Roma Education Fund, 2014). Even if Roma children succeed in enrolling at school, this does not mean they come to school and attend class. School surveys in the UK suggest that in about 50 per cent of primary schools and 20 per cent of secondary schools, over 20 per cent of Roma, Gypsy, and traveller students travel during the school year, which could sometimes last for months, due to their parents' work and cultural activities (Wilkin et al., 2010).

Frequent school transfer: It is not surprising that some Roma children, whose families travel often, experience school transfer more than others, which may increase the risk of dropout and falling behind academically. For example, Wilkin et al. (2010) found that about 30 per cent of Roma, Gypsy, and traveller students in the UK who were in Year 6 in 2003, attended more than one secondary school over the five-year period, which is significantly higher than their counterparts. A meta-analysis of school mobility suggests that school transfer has negative effects on learning by 0.22–0.25 standard deviation, which would be equivalent to 3–4 months of learning (Mehana and Reynolds, 2004).

Exclusion by schools' administrative practices

Roma children can be excluded from formal education due to practices and tacit understandings that discourage their enrolment or deny their admission (Greenberg, 2010). For instance, a country assessment of Roma education in Romania found that a notable proportion of Roma children who do not have access to school was excluded due to the lack of identity documents or registration papers (Roma Education Fund, 2007). Even when Roma children do possess these documents, they may be prevented from enrolling if the school in which they aim to enrol is in a different locality than that listed as their permanent address (Roma Education Fund, 2014). Roma students also face higher risk of exclusion even after they are enrolled in school. Wilkin et al. (2010) found that Roma, Gypsy, and traveller students in the UK, particularly boys, are more likely to receive a fixed-term suspension and a permanent exclusion order by school with persistent disruptive behaviour as a major reason. Roma parents commonly noted teachers' disinterest or lack of understanding of cultural and behavioural differences between Roma and non-Roma children (Lukšík, 2019)

Segregation by school/classroom

Roma students who do manage to enter school also experience multiple forms of segregation between schools, between classrooms, and even within classrooms. These students may not receive the same quality of education and academic expectations as non-Roma students do. For instance, Roma students are more likely to be identified as children with special education needs and receive education in segregated schools (e.g., Brüggemann, 2012; O’Nions, 2020; Wilkin et al., 2020), as is the case for over 60 per cent of Roma children attending special education schools in the Czech Republic and Slovakia (Ivanov and Kagin, 2014). The overrepresentation of Roma children in special education could be attributed to multiple factors such as limited access to health care services, insufficient information delivered to Roma families, and a lack of understanding of cultural difference by school authorities, which includes the use of culturally insensitive school readiness assessments (Roma Education Fund, 2012). This may contribute to poor learning outcomes of Roma children, as students who receive special education services have lower learning gains, even after accounting for individual, family and school attributes (e.g., Kvande et al., 2019; Reynolds and Wolfe, 1999).

School segregation also occurs for children who are enrolled in schools offering general education programmes. Many Roma families reside in areas with high concentrations of Roma population. Because of the geographical segregation and a school catchment area policy, most Roma students attend Roma-majority schools that exist in Roma settlements. Unfortunately, the quality of education offered in Roma-majority schools is not necessarily comparable to other schools. For example, a 2007 country study in Romania reported that Roma-majority schools were twice as likely to face a shortage of qualified teachers than the average, and the likelihood of overcrowded classrooms was more than nine times higher in Roma-majority schools than in the system overall (Roma Education Fund, 2007).

School segregation can be further exacerbated by the behaviours of non-Roma families who move out once their children’s schools begin admitting Roma children (Greenberg, 2010). In addition, segregation can occur within school through the use of separate classrooms or classroom sections specifically for Roma learners (Greenberg, 2010).

School learning environment

Language: Language may be another barrier for Roma children to retain and complete school education if their language is not an instructional language at school and language support is not available. Children whose home language differs from an instructional language used at school could have greater challenges in acquiring literacy skills and feelings of unease (Nag et al., 2018), which would negatively affect continuation and completion of school education. Roma children are likely to face a language barrier, given that over 50 per cent of Roma who reside in Roma settlements speak Romani at home in Albania, Montenegro, North Macedonia and Serbia (Robayo-Abril and Millán, 2019).

Culturally insensitive curricula and teaching practices:

Another factor preventing Roma children from continuing their school education lies in curricula and teaching practices that are insensitive to the real-life experiences and learning needs of Roma children (FRA, 2014; Van den Bogaert, 2000). For instance, Roma is invisible in curricula and school textbooks in Greece, and if any, it reflects folkloric stereotypes and prejudices (Zachos, 2017). In the education systems that are tailored to majority groups, teachers are not trained to support learning of minority groups and their teaching strategies do not suit the needs of Roma children (Van den Bogaert, 2000).

Bullying, violence and discrimination: Roma children experience bullying and other forms of violence at school and in the school community, which may result in exclusion and segregation of Roma children. In 2008, non-Roma parents in Greece protested the admission of Roma children and blockaded the primary school, demanding that Roma children be placed in another building (European Court of Human Rights, 2012). The European Court of Human Rights ruled that the placement of these Roma children in special preparatory classes in an annex to the main school building resulted in discrimination and a violation of the European Convention on Human Rights (European Court of Human Rights, 2012).



2.3 Diversity of the Roma population

Roma people are perceived as a disadvantaged social group who require social and educational interventions and support owing to their historical negation and exclusion. This endlessly reproduces the racist stereotypes about Roma (Myers, 2019; O’Nions, 2020). However, the literature also indicates that the Roma are not a homogeneous group and their sociocultural conditions and political status have evolved and diversified over years (Gheorghe, 1991). Roma are different in many aspects, including individual and household characteristics as well as educational experiences (Robayo-Abril and Millán, 2019). This diversity among Roma has called for endeavours to move away from the narrow ethnic concept of Roma and bring in plurality in debates and studies (Tremlett, 2009). This is well adopted in the EU Roma Strategic Framework 2020–2030, which was updated to acknowledge and give a stronger focus on the diversity within Roma population and address unique needs of different Roma groups (European Commission, 2020).

This implies the importance of analysing how educational attainment and outcomes of Roma children differ by demographic and household attributes and understanding which groups of Roma children fare well or worse in their educational experiences. Although there is a growing body of evidence on the educational disparity between Roma and non-Roma children (e.g., Brüggemann, 2012; Kertesi and Kézdi, 2013; Wilkin et al., 2010), the educational gap within Roma population has received less attention. For instance, among Roma youth, those at risk of poverty or in overcrowded households are less likely to complete upper secondary education or above (FRA, 2018b). In terms of gender, Roma girls and women are less likely to complete upper secondary education or above than Roma men across age groups (FRA, 2018b). It is also suggested that males tend to drop out of school due to a need for work, while females do so because of early marriage (Robayo-Abril and Millán, 2019). These studies demonstrate the importance of examining uneven educational conditions different Roma youth and children face and providing support to the most marginalized in Roma communities to address education and learning inequalities.



3 Data and methods

Data used for this study was collected from the sixth round of MICS implemented in Kosovo, Montenegro, North Macedonia and Serbia during 2018–2020. MICS is a household survey designed to gather information on the well-being of children and women. While the surveys collected data from a representative sample of the whole population, the four countries also conducted the MICS in Roma settlements as a separate survey with an aim to assess the socioeconomic conditions and demographic situations of those living in the communities.

In all countries, Roma households were defined as those having at least one person self-identifying as Roma ethnicity.⁵ As Roma households account for less than 2

per cent of all households in each country, a sampling frame specific for such population was generated identifying Enumeration Areas (EA) that contained at least 10 or 20 Roma households. The sampling frame was then designed using the most recent census, as well as the results from the fifth round of MICS, in a way to ensure representativeness of regions in the country and a fair breakdown between urban and rural areas.

Within each delimited sampling frame, a sample of the EAs and Roma households was selected. In Serbia, this identification occurred using systemic probability proportional to size (PPS) and in Montenegro all households from the sampling frame were selected to participate in the

⁵ In Kosovo, the sample is households where at least one member is Roma, Ashkali or Egyptian.

survey. In Kosovo and in North Macedonia PPS was used, but these countries also selected some EAs/households based on specific criteria such as relative size of Roma population. The resulting sample was between 1,165 and 2,000 Roma households, representing between 6 per cent and 73 per cent of all Roma households in each country (see Table 1).

Data from the Roma survey, representing the population living in the EAs, is referred to as data for ‘Roma settlements’ throughout the report. The sample is not nationally representative of Roma households because it does not capture those outside of the Roma settlements.

Table 1: Sampling of households in MICS6 Roma settlements survey

	Kosovo	Montenegro	North Macedonia	Serbia
No. of Roma households in country	6,308 (2% of the total households)	1,541 (1% of the total households)	13,114 (2% of the total households)	36,258 (1.5% of the total households)
Sampling frame	EAs with 10 or more Roma households (76% of total EAs)	EAs with 10 or more Roma households (73% of total EAs)	EAs with 20 or more Roma households (72% of total EAs)	EAs with 20 or more Roma households (43% of total EAs)
No. of EAs selected	80	33	80	100
Selection of EAs	22 EAs with more than 50 Roma households were self-selected, and remaining 58 EAs were selected from the remainder of the frame with PPS	All the EAs in the frame selected	20 EAs with the largest population of Roma were self-selected, and remaining 60 were selected from the remainder of the frame with PPS	100 EAs were selected from the frame with PPS
No. of Roma households sampled	1,420	1,165	1,600	2,000
Percentage of total Roma households sampled	23%	73%	12%	6%

In addition to a household questionnaire, the survey collected the information of one randomly selected child aged 5–17 living in each household from the child’s mother or caregiver. This provides the detailed information of school-aged children including engagement in child labour and the presence of functional difficulties⁶ as well as foundational skills. A questionnaire for children under five years old was also administered to a household member to collect information of early childhood development. The information collected from these questionnaires was used to understand educational situations and outcomes of children in Roma settlements.

This study conducted descriptive analyses: 1) data disaggregation to compare educational situations and outcomes of children with different demographic and family attributes⁷; 2) regression analysis to examine how different child and household factors are associated with education situations and outcomes in Roma settlements; and 3) education pathway analysis to identify critical moments in which children in Roma settlements face challenges in continuing their education. It is important to note that, due to the nature of data and methodological limitations, no causality can be inferred from the results of this study.

⁶ MICS6 assessed the existence of functional difficulties in 12 domains (accepting change, affect/emotion, communication, concentrating, controlling behavior, hearing, learning, making friends, remembering, seeing, self-care and walking). The child functioning assessment module was developed by UNICEF in collaboration with the Washington Group on Disability Statistics.

⁷ We present disaggregated data (i.e., subsample of children) only when there is a sufficient sample size.



4 Main findings

4.1 Exclusion from school education

The extent to which children in Roma settlements are excluded from school education was examined first. The results show that children in Roma settlements are much more likely to be out of school compared to the national average. The out-of-school rates in Roma settlements have decreased in Montenegro and Serbia but slightly increased in North Macedonia since the previous MICS survey round. Disaggregated analyses indicate that, within Roma settlements, children from poor families; those engaged in child labour; having functional difficulties; having less educated parents; and not living with both parents, are more likely to be out of school in general.

Multiple regression analysis was conducted to understand the relative importance of different demographic and family factors in the risk of school exclusion in Roma settlements. The results show that engagement in child labour is

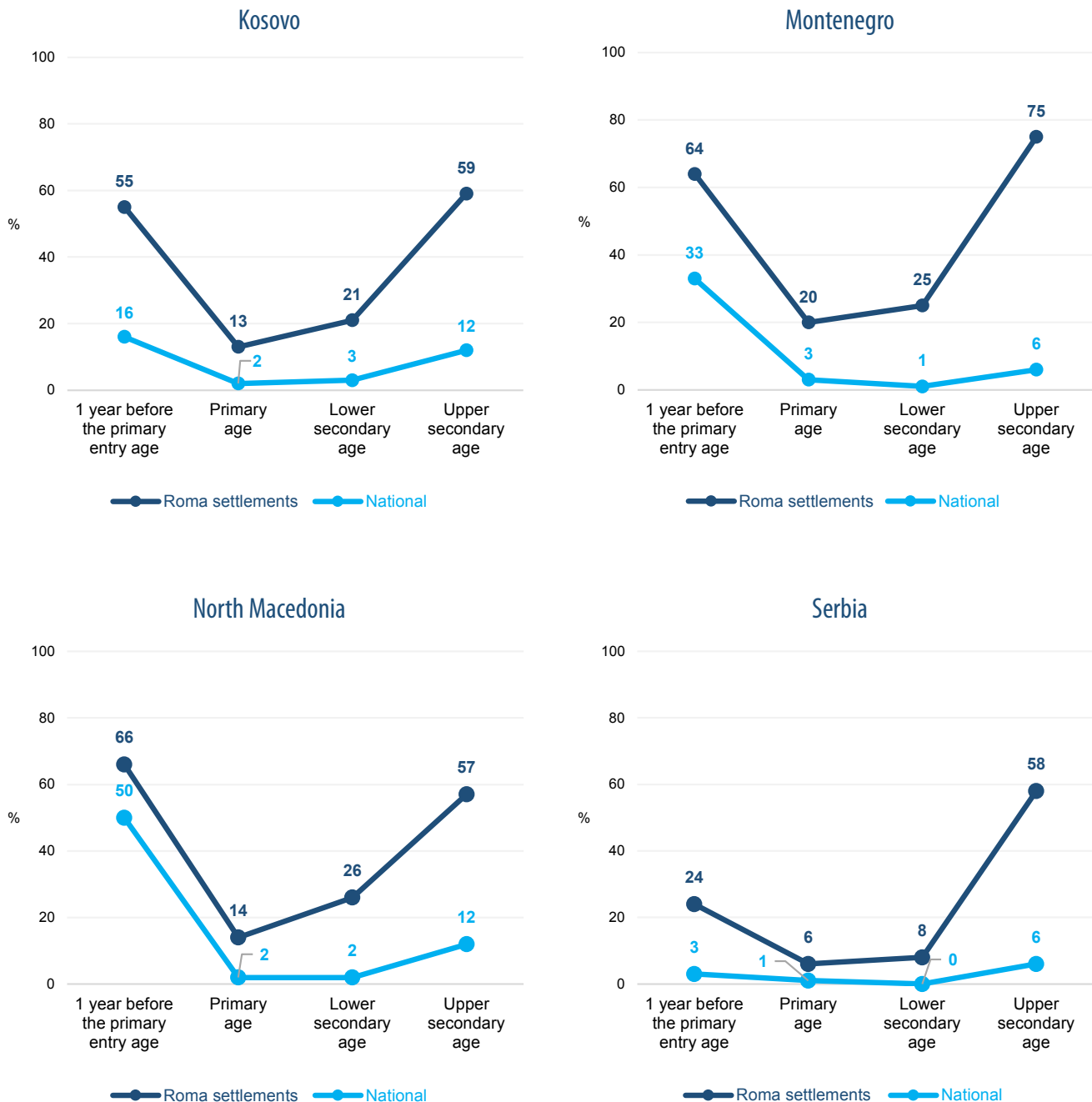
associated with an increase in the likelihood of being out of school by 11–29 percentage points in Kosovo, North Macedonia and Serbia, while having functional difficulties is associated with a 10-percentage-point increase in the probability of school exclusion in Kosovo only. On the other hand, children from a wealthier family have a lower risk of school exclusion across the countries. In addition, having parents who completed secondary or higher education is associated with a decrease in the probability of being out of school by 12–20 percentage points in Kosovo, Montenegro and North Macedonia, compared to those having parents with no formal education. The probability of school exclusion also decreases if a child lives with both parents but increases if a child is female in Kosovo.

4.1.1 Out-of-school children in Roma settlements

Across all age groups and countries, results indicate that children in Roma settlements are more likely to be excluded from school education compared to the national average (see Figure 1). The out-of-school rates are

particularly higher for children of pre-primary and upper secondary age, demonstrating a U-shaped relationship between age and the probability of being excluded from school education.

Figure 1: Out-of-school rates in Roma settlements in comparison to the national average



At the pre-primary school age (i.e., one year before the official primary school entry age), out-of-school rates in Roma settlements are as high as 64–66 per cent in Montenegro and North Macedonia followed by Kosovo (55 per cent) and Serbia (24 per cent), all of which are much higher than the national averages. Although out-of-school rates decrease significantly at the primary age, education access inequality remains. In fact, 6–20 per cent of children of primary school age are out of school in Roma settlements, while the national rates are merely 1–3 per cent. This indicates that, in Roma settlements, a disproportionately large share of children does not attend school already in the first cycle of basic education.

At the lower secondary school age, out-of-school rates in Roma settlements slightly increase to 8–26 per cent, while the national out-of-school rates remain as low as 0–3 per cent. More than 20 per cent of children residing

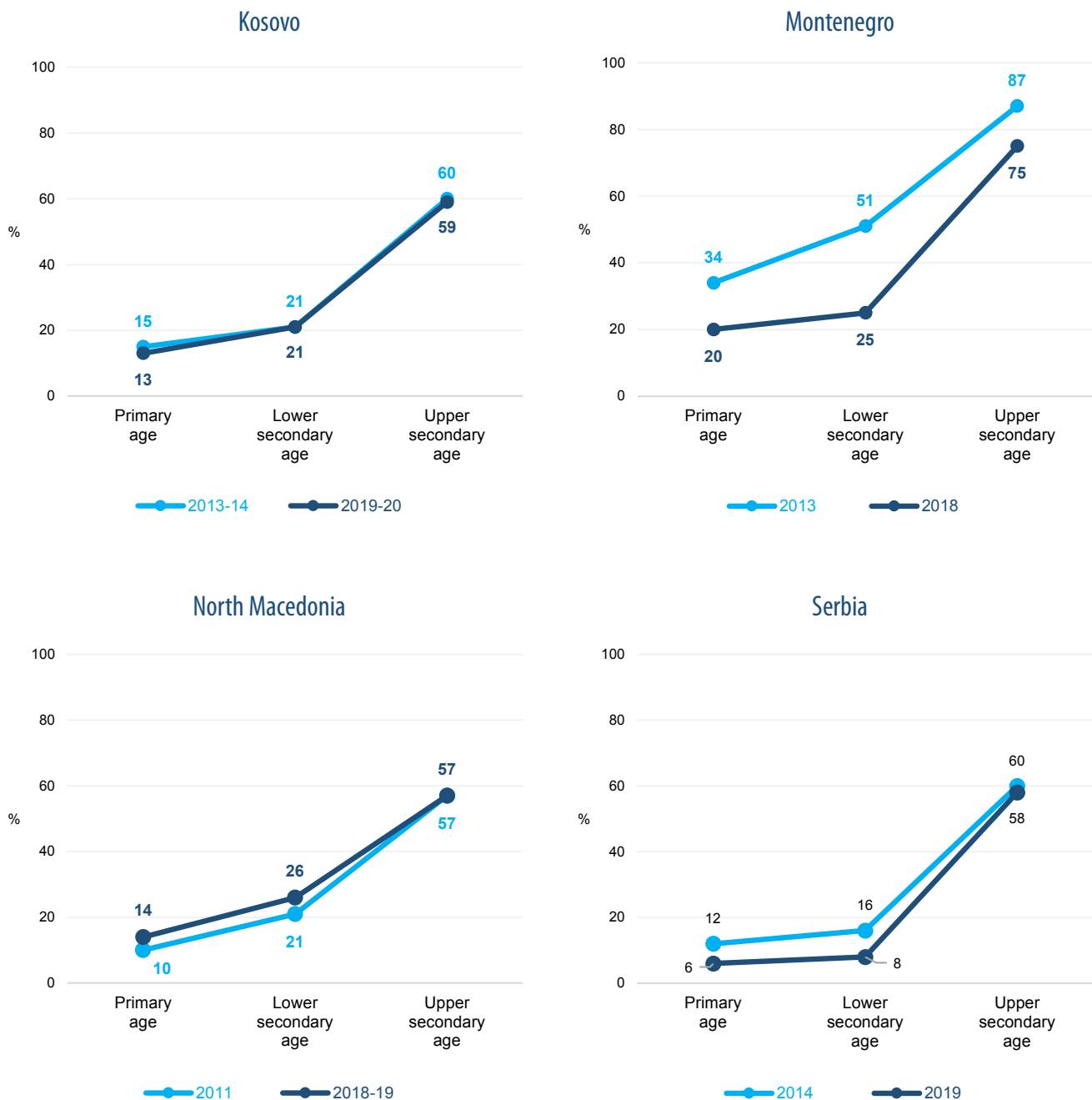
in Roma settlements are excluded from school education in Kosovo, Montenegro and North Macedonia. At the upper secondary school age, out-of-school rates in Roma settlements jump up in all countries with the highest being 75 per cent in Montenegro, followed by the other three countries (57–59 per cent). Given that the vast majority of children continue their schooling as suggested by the national out-of-school rates of 6–12 per cent, the gap in school attendance between Roma settlements and the national average appears the largest in the age group. The findings suggest that, although there is a need to close the gap in education access at the primary and lower secondary age, addressing inequality at the early age and upper secondary age is critical for achieving inclusive, equitable education.



Regarding any changes in out-of-school rates in Roma settlements from the previous round of MICS surveys (see Figure 2), the four countries show different trends in school exclusion in Roma settlements. There has been no notable change in the out-of-school rates in Kosovo. Montenegro and Serbia, however, demonstrate increased access to schooling in Roma settlements in all age

groups, with a reduction in out-of-school rates by 12–26 percentage points in Montenegro and 2–8 percentage points in Serbia. Both countries achieved a relatively large improvement at the lower secondary age. On the other hand, North Macedonia experienced an increase in out-of-school rates at the primary and lower secondary age by 4–5 percentage points.

Figure 2: Trends in out-of-school rates in Roma settlements



4.1.2 Heterogeneity within Roma settlements: Out-of-school rates

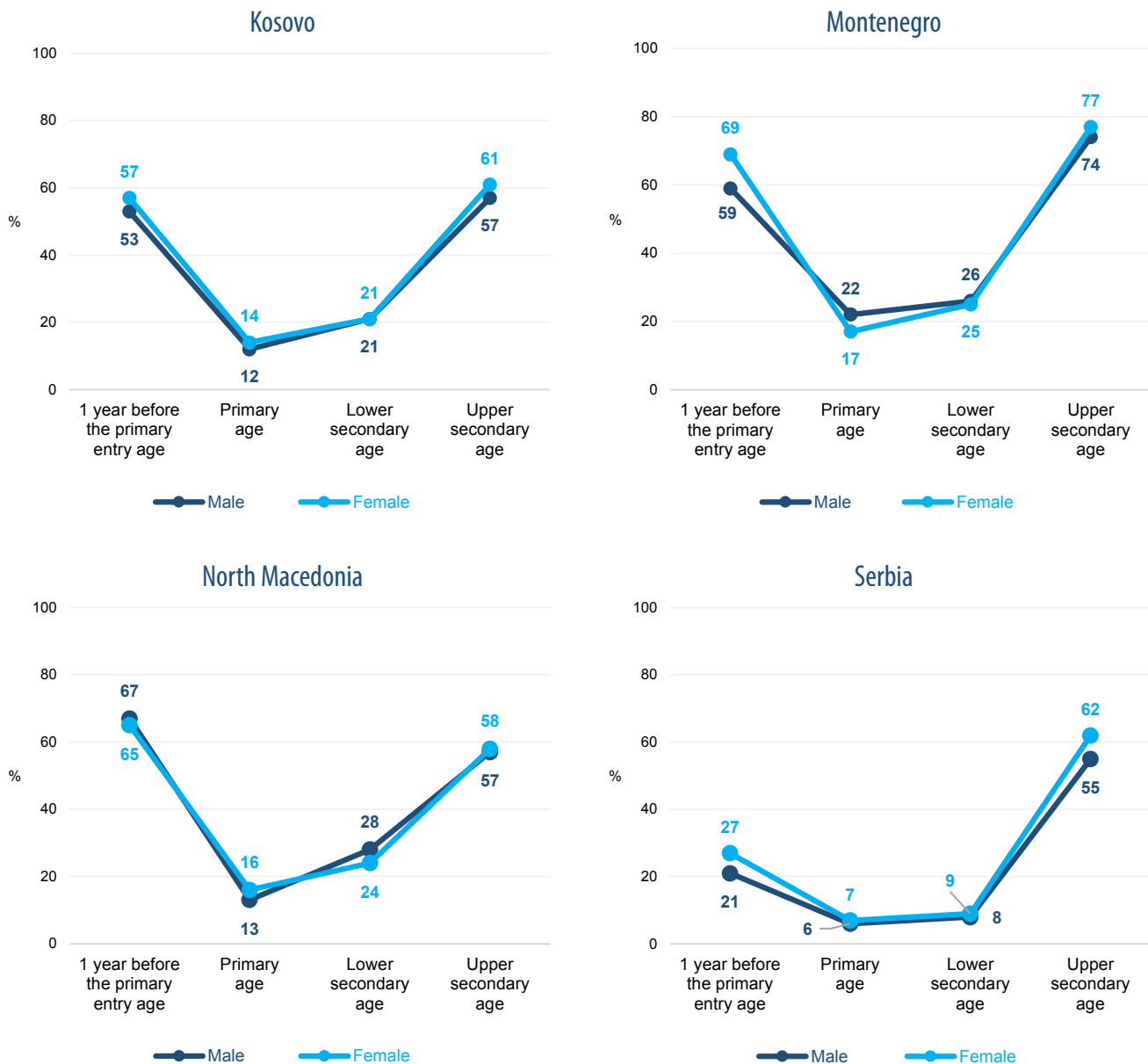
Gender

A child's gender may influence the likelihood of entering and remaining in school in Roma settlements if there exists gender-based stereotypes and norms in their communities, households and schools. For instance, families may prioritize education of boys if they need to select which child can go to school. On the contrary, education of girls may be prioritized if boys need to earn income for daily living to support their family.

Disaggregation by gender indicates that the gender gap varies with country and age group, but if any, the

difference is relatively small (see Figure 3). Across countries, out-of-school rates are slightly higher for girls at upper secondary age compared to boys by 1–7 percentage points, implying that girls confront educational disadvantage at the end of secondary education. The patterns in gender disparity are less clear in other age groups. For instance, out-of-school rates are slightly higher for boys at the primary school age in Montenegro and at the lower secondary school age in North Macedonia, both by about 5 percentage points.

Figure 3: Out-of-school rates in Roma settlements, by gender

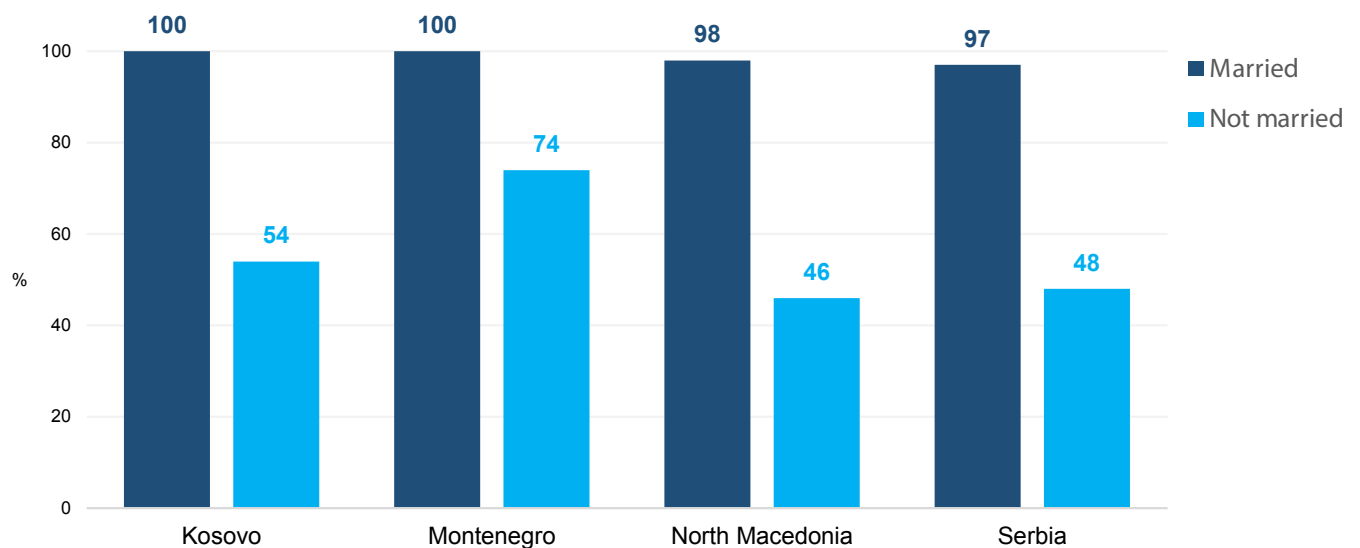


Box 1. Early marriage and school attendance in Roma settlements

The practice of early marriage is a significant barrier for Roma children – especially girls – to continue their schooling and education. The MICS6 Roma settlement surveys in the four countries collected information on marital status from women aged 15–49. According to the data, a large share of girls at upper secondary school age in Roma settlements are already married in Kosovo (14.4 per cent), Montenegro (34 per cent), North Macedonia (20.5 per cent) and Serbia (22.3 per cent).

Looking at the out-of-school rates of girls at upper secondary age in Roma settlements by marital status (see Figure 4), almost all girls who are married are out of school (97–100 per cent). In comparison, the out-of-school rates are much lower for non-married girls (46–74 per cent). This indicates that early marriage is a critical dropout risk for young girls in Roma settlements.

Figure 4: Out-of-school rates of girls at upper secondary age in Roma settlements, by marital status



Household wealth

The literature suggests that a household economic situation is one of the barriers that prevents Roma children from attending school (e.g., Pantea, 2007; Robayo-Abril and Millán, 2019), which is corroborated by the findings of this study. The results show that,

in general, children in poor families are more likely to be excluded from school education, implying the importance of support to economically disadvantaged children in Roma settlements (see Figure 5).

Figure 5: Out-of-school rates in Roma settlements, by household wealth quintile



Note: For ease of interpretation, the figure shows only the first (bottom 20%), third (40-60%), and fifth (top 20%) quintile.

At the pre-primary school age (i.e., one year before the official primary school entry age), out-of-school rates in the poorest families are higher than the wealthiest families by 23–42 percentage points. It is noteworthy that 87 per cent of children in the poorest quintile are out of school at the pre-primary level in Montenegro and North Macedonia, followed by Kosovo (78 per cent) and Serbia (40 per cent).

At the primary school age, the gap by family wealth reduces in all countries. However, 22–43 per cent of children in the poorest families are still out of school in Kosovo, Montenegro and North Macedonia, while only a fraction of children in the wealthiest families are out of school (1–6 per cent). At the lower secondary school age, out-of-school rates in the poorest quintile jump up to 43–54 per cent in three countries whereas those of the wealthiest quintile remain low at 4–10 per cent. Serbia is a unique case where the majority of the poorest children of primary school age (92 per cent) and lower secondary age (91 per cent) attend school.

At the upper secondary school age, the out-of-school rates increase across wealth levels. The rates among the poorest households increase to 68–87 per cent, while children from the wealthiest families also have high out-of-school rates from the lowest rate of 37 per cent in North Macedonia to the highest of 71 per cent in Montenegro. The largest gap between the richest and the poorest quintiles appears in the upper secondary school age group in Kosovo (40 percentage points), North Macedonia (43 percentage points) and Serbia (29 percentage points). In Montenegro, where the out-of-school rates at the upper secondary school age are very high regardless of age groups, the largest gap is found at the lower secondary school age (44 percentage points).

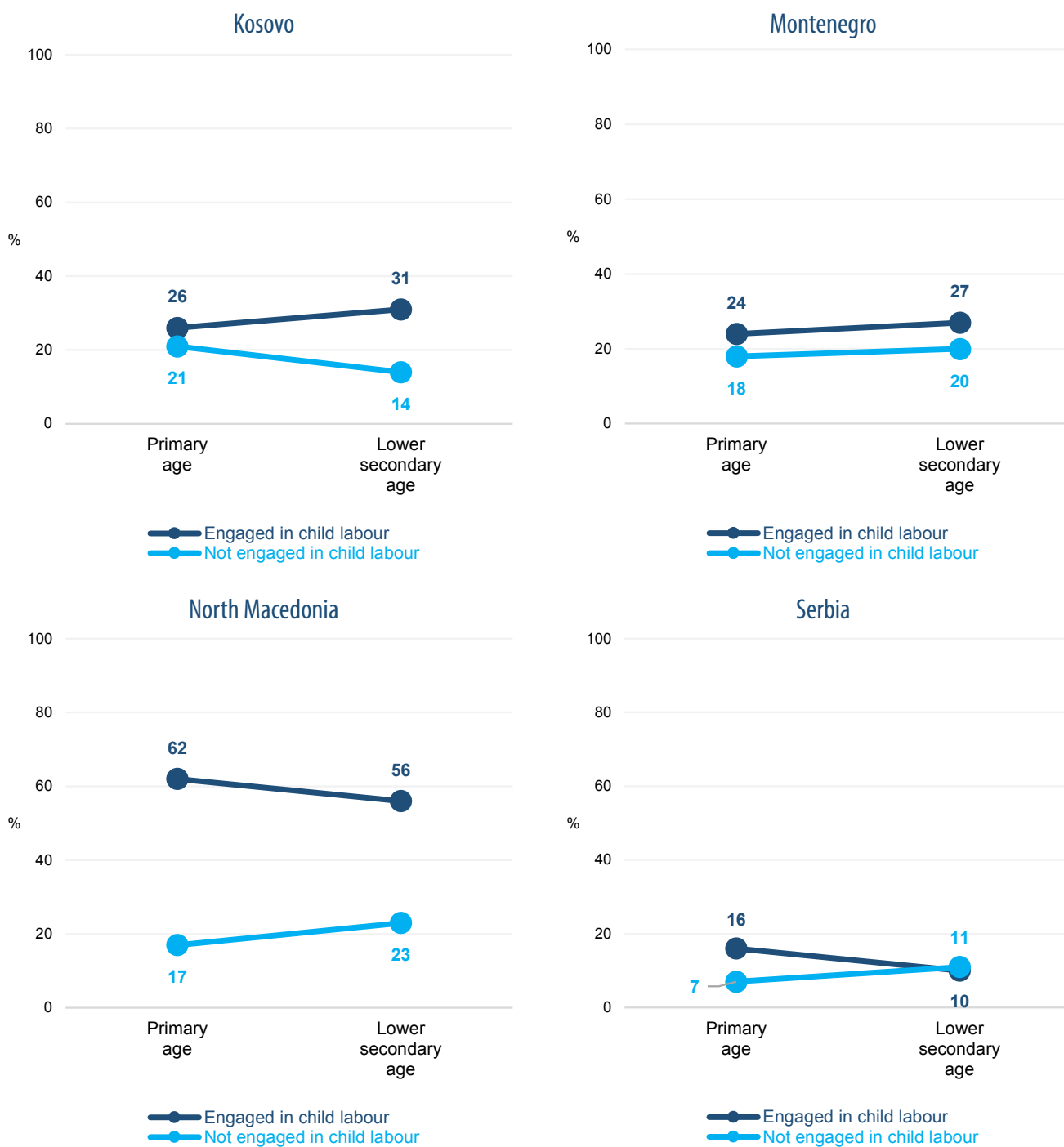


Child labour

The literature provides suggestive evidence that child labour prevents Roma children from continuing their school education (e.g., FRA, 2014; Robayo-Abril and Millán, 2019). To analyse out-of-school rates in relation to a child's engagement in labour, data was derived from a questionnaire for children ages 5–17 (see Figure 6). Due to the age coverage, the results are for children of primary and lower secondary school age only.

In general, children engaged in child labour are more likely to be excluded from school education across the age groups, with an exception for the lower secondary age in Serbia. A stark difference is found in North Macedonia where more than half of children who are engaged in child labour are out of school (62 per cent at the primary age and 56 per cent at the lower secondary age), while the out-of-school rates for children not engaged in child labour are as low as 17 per cent and 23 per cent.

Figure 6: Out-of-school rates in Roma settlements, by engagement in child labour

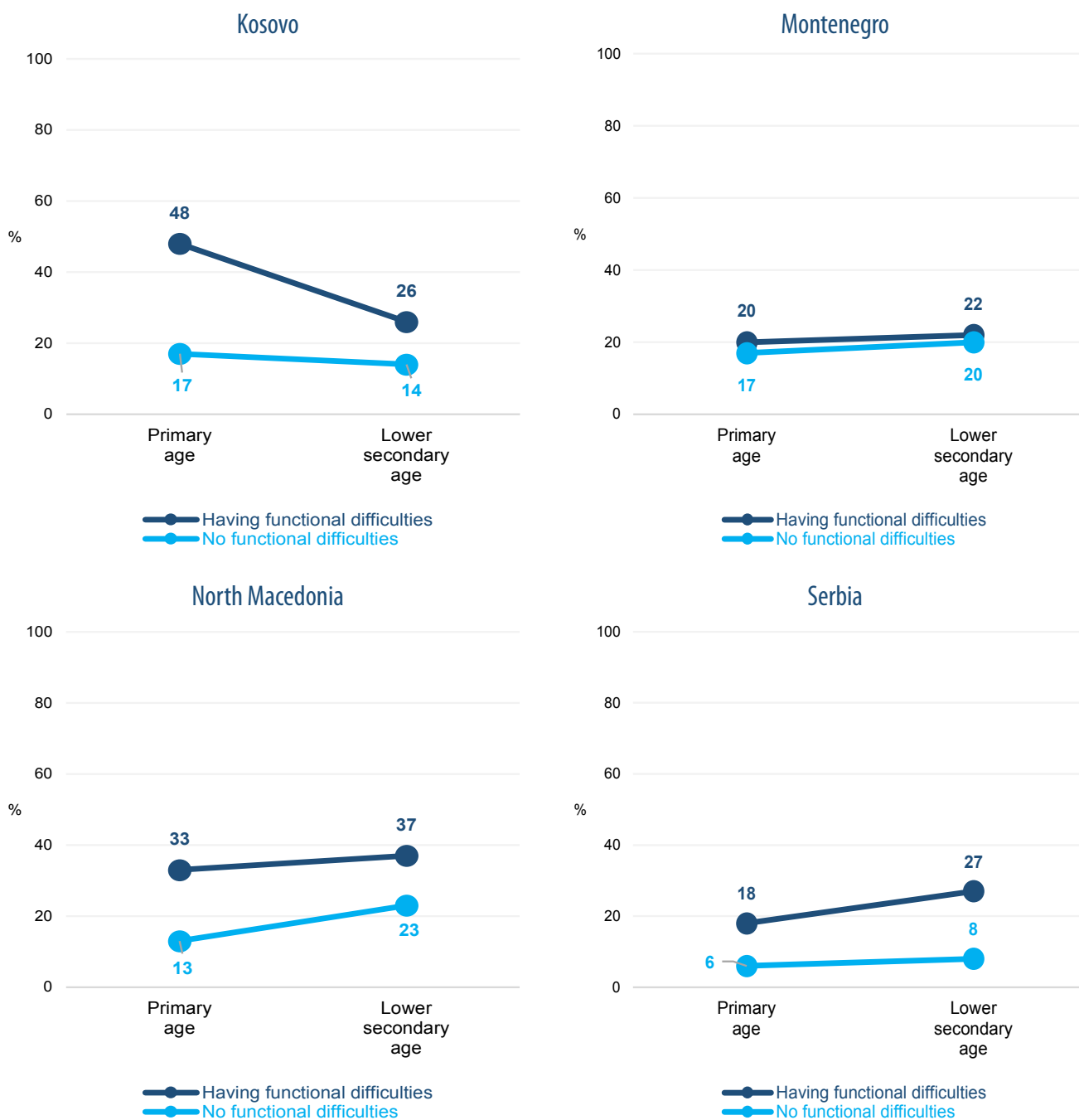


Functional difficulties

Children experiencing functional difficulties may be excluded from school education due to a lack of support and understanding among their communities, families and schools. This research found that across the countries and age groups, children in Roma settlements experiencing functional difficulties are more likely to be excluded from school education (see Figure 7). Data is derived from the questionnaire for children ages 5–17, and therefore the results are only for primary and lower

secondary school age groups. The primary school age gap is particularly large in Kosovo (by 31 percentage points) and North Macedonia (by 20 percentage points), while the largest difference in the lower secondary age group is found in Serbia (with a 19 percentage point difference). Montenegro has a small difference in out-of-school rates between children with and without functional difficulties only by 2–3 percentage points.

Figure 7: Out-of-school rates in Roma settlements, by presence of functional difficulties

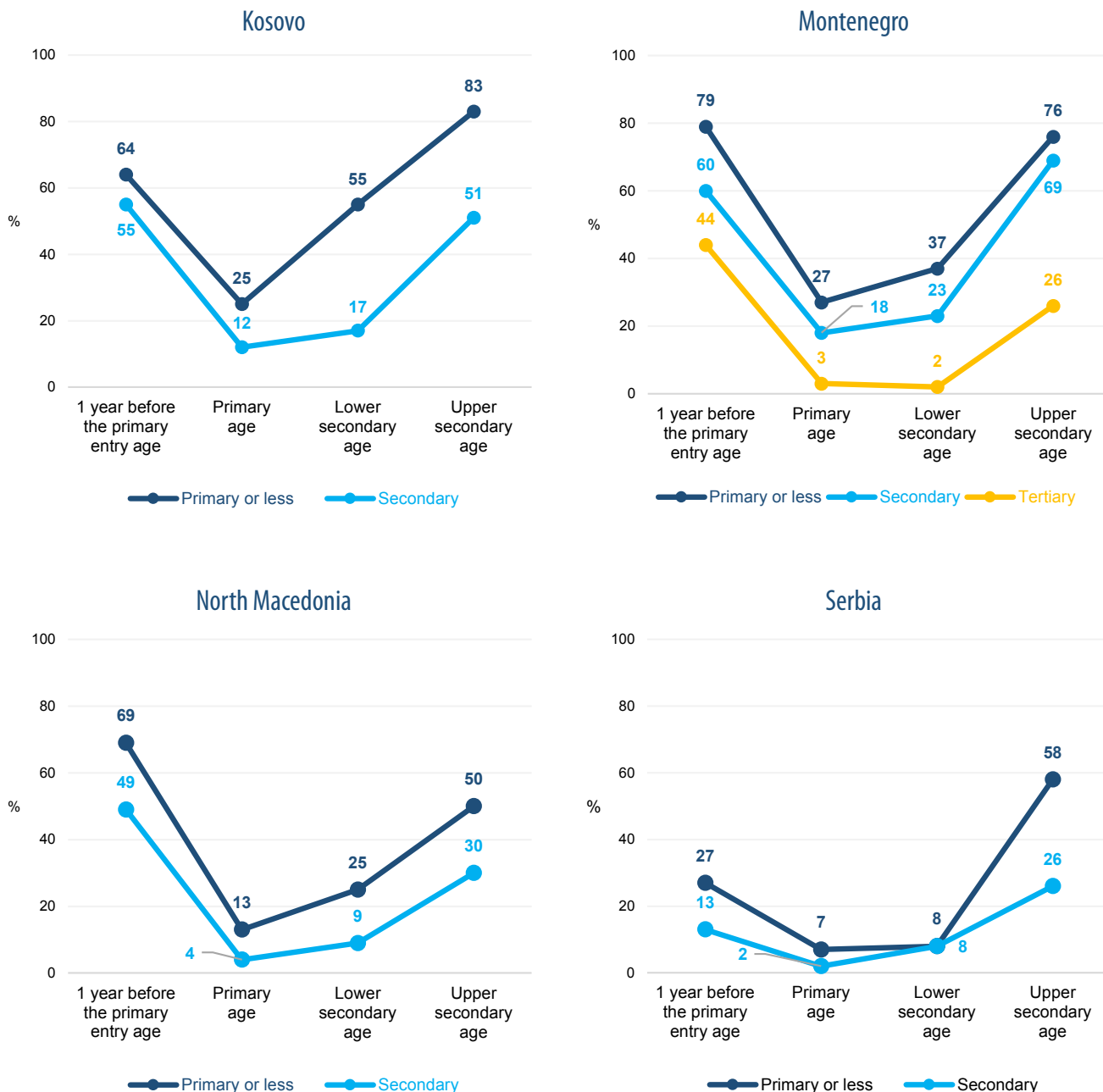


Parents' highest education level completed

There is suggestive evidence that educated parents are more likely to be aware of the importance of education and therefore have higher expectations for their child's academic attainment (e.g., Feinstein et al., 2004), which could facilitate children's entry to, attendance and retention in school. Looking at the out-of-school rates

in Roma settlements by parents' highest education level completed,⁸ the results show a consistent pattern. Children having less educated parents are more likely to be excluded from school education, with an exception at the lower secondary age in Serbia where no difference is found (see Figure 8).

Figure 8: Out-of-school rates in Roma settlements, by parents' highest education level completed



⁸ The variable takes the higher education level completed of either parent.

At the pre-primary school age (i.e., one year before the official primary school entry age), the out-of-school rates for children having parents who completed secondary education are lower by 9–20 percentage points compared to children whose parents completed primary education or less. The gap reduces at the primary school age possibly because children start schooling at the basic education level.

The difference in out-of-school rates by parents' education level becomes large as children reach the secondary school age. In Kosovo, for instance, at the lower secondary school age, children whose parents completed secondary education are 38 percentage points less likely to be excluded from school education than children whose

parents completed only primary education or less. The gap is also large at the upper secondary age in Kosovo and Serbia (32-percentage-point difference, respectively) as well as North Macedonia (20-percentage-point difference).

Montenegro demonstrates potentially large benefits of having highly educated parents. Children whose parents have a higher education degree show the lowest out-of-school rates. The difference in out-of-school rates between children having parents who completed higher education and secondary education become larger as child's school age increases (by 15, 21 and 43 percentage points at primary, lower secondary and upper secondary age, respectively).

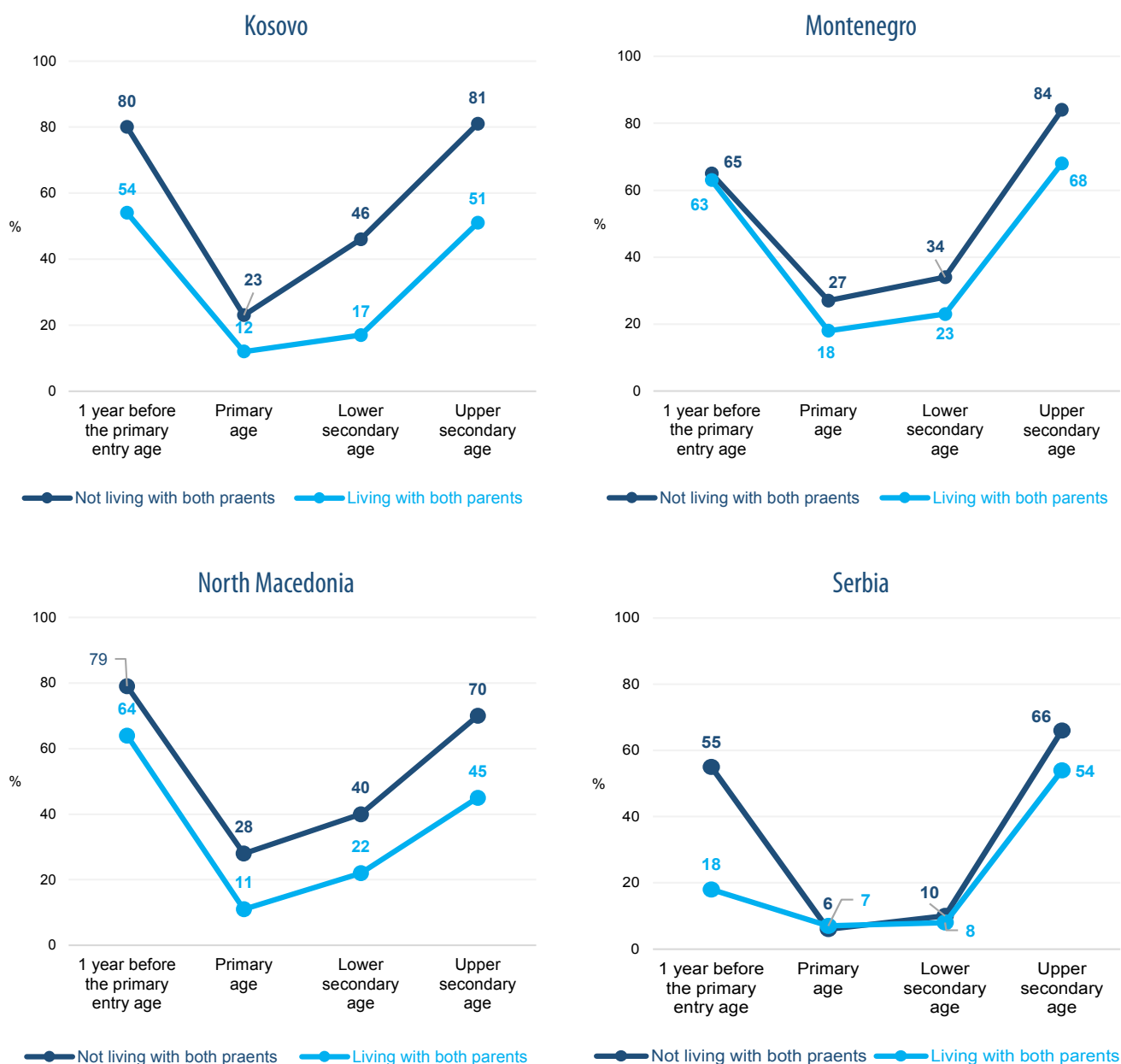


Living with both parents

There is suggestive evidence in the literature that children living with both parents are better off on average (Parke, 2003), although the benefits of growing up in a two-parent family are conditional on various factors and thus not shared equally by all (Muscik and Meier, 2010). This study examined how living with both parents is related to the probability of being excluded from school education in Roma settlements (see Figure 9).

The results show that, compared to children in single-parent or no-parent households, those living with both parents are less likely to be out of school across the countries and age groups, except for primary school age in Serbia, where the difference is negligible. The largest gap is found at the pre-primary age in Serbia (by 37 percentage points). The relatively large gap between children living with and without both parents is also observed at the lower and upper secondary school age (by 29–30 percentage points) in Kosovo.

Figure 9: Out-of-school rates in Roma settlements, by presence of parents in the household

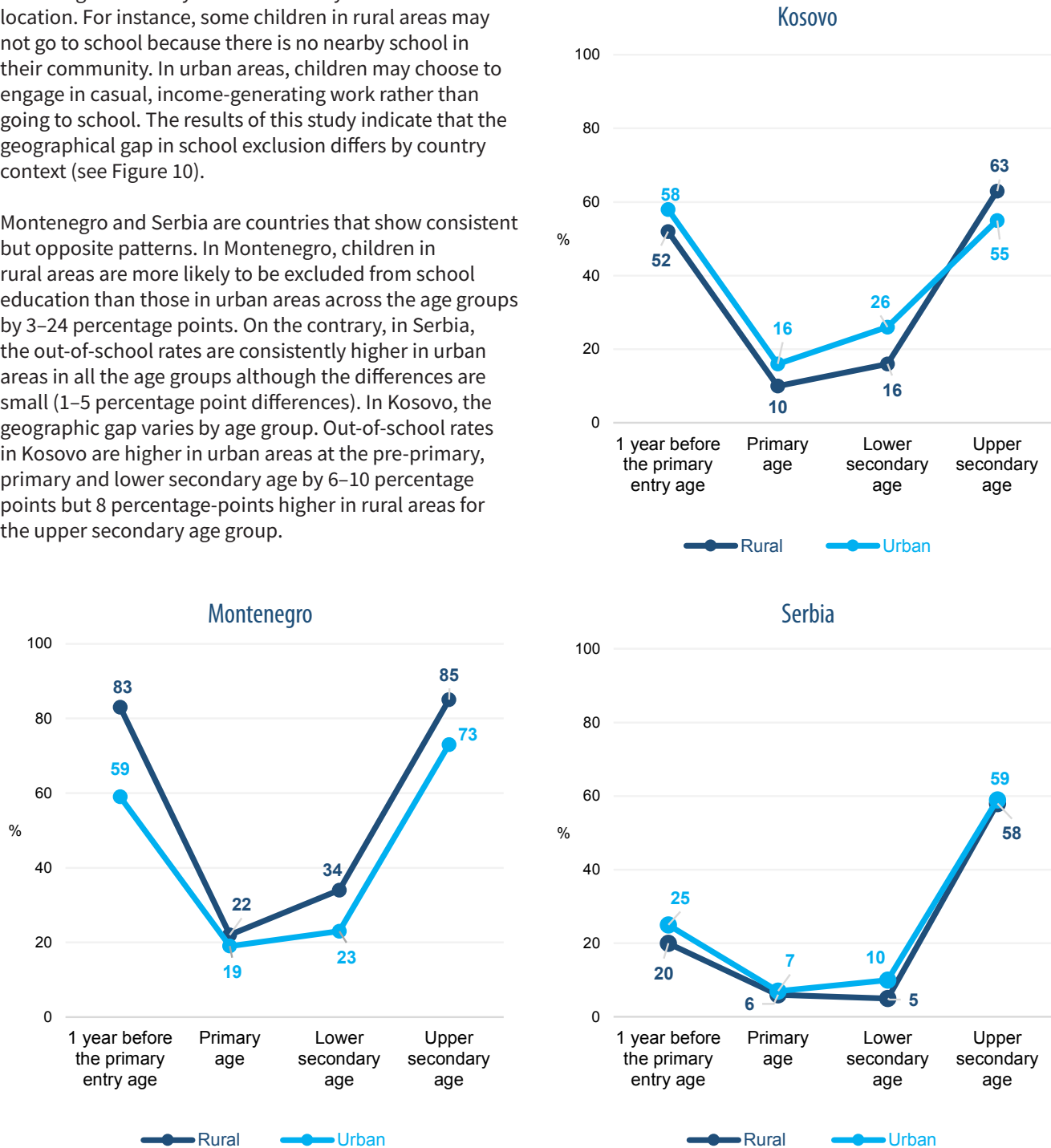


Location

The likelihood of children from Roma settlements attending school may be influenced by residential location. For instance, some children in rural areas may not go to school because there is no nearby school in their community. In urban areas, children may choose to engage in casual, income-generating work rather than going to school. The results of this study indicate that the geographical gap in school exclusion differs by country context (see Figure 10).

Montenegro and Serbia are countries that show consistent but opposite patterns. In Montenegro, children in rural areas are more likely to be excluded from school education than those in urban areas across the age groups by 3–24 percentage points. On the contrary, in Serbia, the out-of-school rates are consistently higher in urban areas in all the age groups although the differences are small (1–5 percentage point differences). In Kosovo, the geographic gap varies by age group. Out-of-school rates in Kosovo are higher in urban areas at the pre-primary, primary and lower secondary age by 6–10 percentage points but 8 percentage-points higher in rural areas for the upper secondary age group.

Figure 10: Out-of-school rates in Roma settlements, by location



Note: Urban/rural disaggregation in North Macedonia is not available due to small sample size in rural areas.



4.1.3 Factors associated with exclusion from school education

The previous section shows that, even within Roma settlements, the share of children who are excluded from school education varies by a number of demographic and household factors. However, the bivariate analysis, which looks at two variables at each time, poses a challenge in understanding how these factors are uniquely associated with the likelihood of being out of school. For instance,

the observed relationship between household wealth and school attendance might be explained in part by geographic differences, which may affect the supply of schools. Similarly, the relationship between living with both parents and school attendance would be a reflection of not only the availability of parental support but also a difference in household wealth.

Accordingly, using a sample of children aged 5–17, a logistic regression analysis was conducted to isolate the relationship between a given factor and school exclusion (see Table 2). This helps better understand the relative

importance of different factors in the risk of being out of school. The results of the regression analysis are presented in average marginal effects (AME), which show an average change in the probability of being out of school.⁹

Table 2: Average marginal effects on the probability of being out of school in Roma settlements, aged 5–17

Variable	Being out of school			
	Kosovo	Montenegro	North Macedonia	Serbia
Age	0.02*** (0.00)	-0.00 (0.01)	-0.02*** (0.00)	0.00 (0.00)
Female	0.05** (0.03)	-0.03 (0.04)	-0.02 (0.03)	0.03 (0.02)
Child labour	0.11** (0.05)	-0.01 (0.06)	0.29*** (0.08)	0.21*** (0.05)
Functional difficulty	0.10*** (0.04)	-0.02 (0.04)	0.06* (0.03)	0.06 (0.04)
Parents' highest education level completed				
Primary	-0.04 (0.06)	0.02 (0.04)	-0.05 (0.05)	0.02 (0.05)
Lower secondary	-0.10* (0.06)			
Upper secondary or tertiary	-0.20*** (0.06)			
Secondary or tertiary		-0.16** (0.07)	-0.12** (0.06)	-0.06 (0.05)
Living with both parents	-0.13*** (0.05)	-0.08 (0.05)	-0.07* (0.04)	-0.01 (0.03)
Household wealth index	-0.08*** (0.02)	-0.12*** (0.02)	-0.09*** (0.01)	-0.06*** (0.01)
No. of children in household	0.01 (0.01)	0.01 (0.01)	0.02*** (0.01)	0.00 (0.01)
Urban	0.02 (0.03)	-0.03 (0.04)	-0.06 (0.06)	-0.08*** (0.03)
Observations	758	466	753	963
Pseudo R ²	0.27	0.27	0.25	0.26

Note: Average marginal effects (AME) and their standard errors are in parentheses. AME of age include the effects of age squared. The reference category of parents' highest education level is pre-primary or less. Robust standard errors are used for estimation. Significance level: *** p<0.01, ** p<0.05, * p<0.1. AME that are statistically significant at the 5% level are in bold.

⁹ Please see Appendix 1 for a detailed explanation of the model and the full results in odds ratio.

The results suggest that household wealth is negatively associated with a likelihood of being out of school in Roma settlements across the countries, even after controlling for the other demographic and household characteristics. A one-unit increase in household wealth index¹⁰ is associated with a reduction in the probability of being excluded from school education by 8 percentage points in Kosovo, 12 percentage points in Montenegro, 9 percentage points in North Macedonia and 6 percentage points in Serbia.

On the other hand, other child and household characteristics are associated with a likelihood of being out of school in only some of the countries. For instance, a child's gender is associated with a likelihood of being excluded from school education only in Kosovo, holding the other factors constant. In Roma settlements in Kosovo, girls face a 5-percentage-point higher chance of being out of school than boys.

There is also a positive, relatively large association between child labour and exclusion from school education in Roma settlements in several countries. Engagement in child labour is associated with an increase in the probability of being out of school by 11 percentage points in Kosovo, 29 percentage points in North Macedonia and 21 percentage points in Serbia. On the other hand, child labour is not significantly related to the likelihood of school exclusion in Montenegro once we control for the other factors including household wealth. Interestingly, functional difficulties are positively associated with school exclusion only in Kosovo at the 5 per cent significance level. In Roma settlements in Kosovo, children with functional difficulties have a 10-percentage-point higher chance of being out of school.

Significant associations were also found between parents' education level and the likelihood of being out of school in Roma settlements in Kosovo, Montenegro and North Macedonia. The results suggest that the risk of school exclusion decreases if parents complete secondary or higher education. In Kosovo, having parents who completed primary or lower secondary education is not significantly associated with school exclusion at the 5 per cent significance level. However, children having parents who completed upper secondary or tertiary education have a 20-percentage-point lower probability of being out of school. Similarly, in Montenegro and North Macedonia, whether parents completed primary education is not significantly associated with the risk of school exclusion. However, having parents who completed secondary or tertiary education is associated with a decrease in the probability of being out of school by 16 and 12 percentage points in Montenegro and North Macedonia, respectively. On the other hand, no evidence was found that parents' education level is related to the likelihood of school exclusion in Roma settlements in Serbia.

Several household environment factors have a significant relationship with a likelihood of school exclusion in Roma settlements in several countries at the 5 per cent level. For example, living with both parents is associated with a 13-percentage-point decrease in the probability of being out of school in Kosovo. Since household wealth is already controlled for, the results imply the importance of non-financial parental support for improving school attendance and retention. In North Macedonia, having one more school-aged child in the household is associated with a 2-percentage-point increase in the likelihood of being out of school. Residential location matters only in Serbia, accounting for the range of child and household factors. Living in urban areas is associated with an 8-percentage-point increase in the chance of being out of school in Serbia.

¹⁰ A one-unit increase in household wealth index is equivalent to the increase of the index by 1.11 standard deviations (SD) in Kosovo, 1.17 SD in Montenegro, 0.99 SD in North Macedonia and 1.06 SD in Serbia.



4.2 Risk of dropping out of school

Attending school does not guarantee that the student continues schooling in future. Some students have a higher risk of dropping out of school. Identifying and supporting such at-risk students is therefore key to achieving inclusive, quality education. One of the risk factors for school dropout is over-age attendance (e.g., Roderick, 1994). Over-age students are those who started schooling late or experienced grade retention, and therefore learning in a grade level lower than expected for their age.

To assess the drop-out risk of students, we examined the over-age attendance rates in Roma settlements in

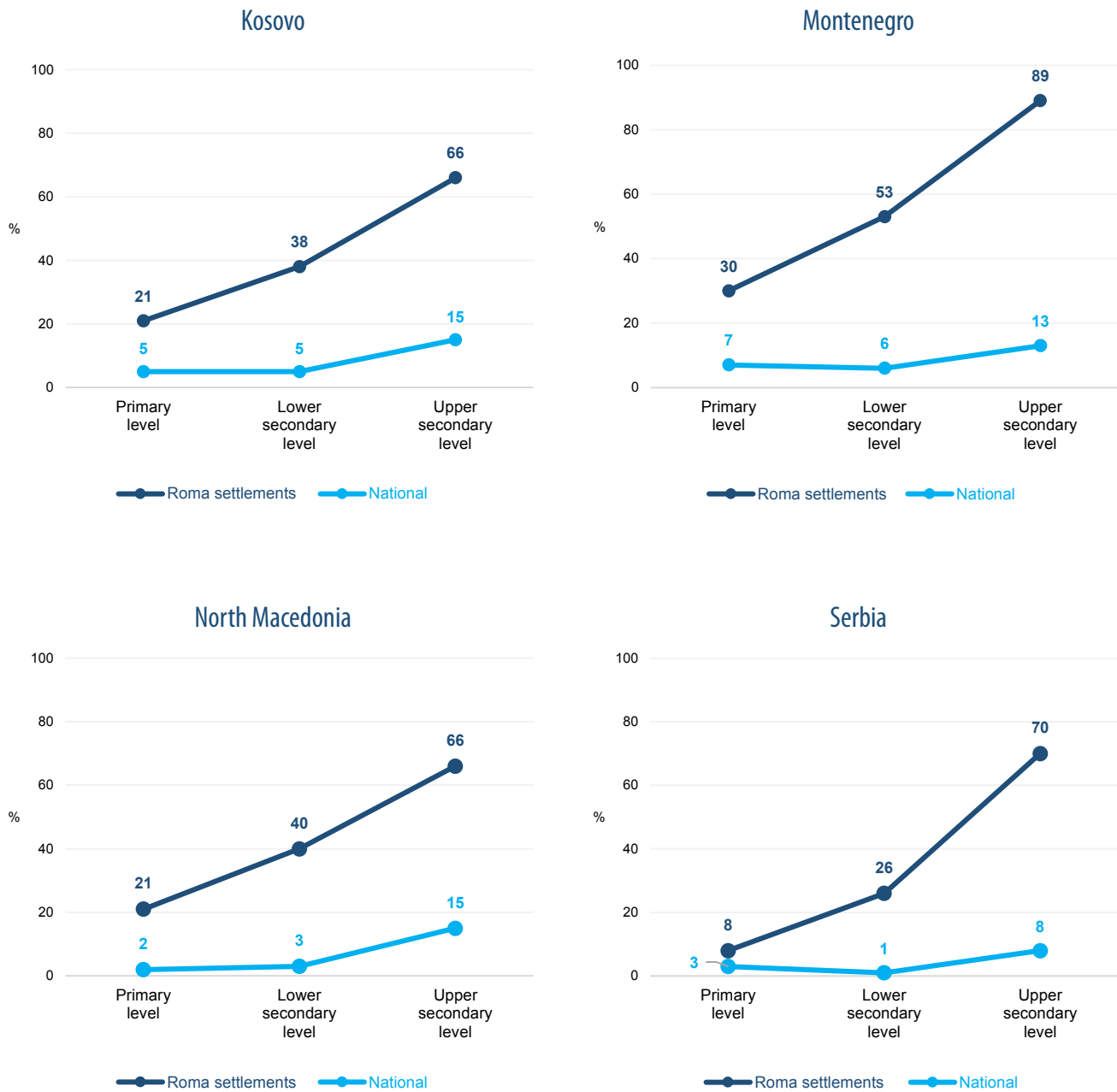
comparison to the national averages. The results show that students in Roma settlements are more likely to be over-age for their grade. The analysis also revealed that, within the Roma settlements, students from poor families, having less educated parents, and not living with both parents, have a higher probability of being over-age and thus face a greater risk of dropout. The over-age attendance rates also differ by geographic location, but its relationships are less consistent and vary with education level and country. A gender gap is relatively small when it exists.

4.2.1 Over-age students in Roma settlements

The results show that the over-age attendance rates are much higher for students in Roma settlements compared to the national average across education levels and countries, implying that students in Roma settlements

face a higher risk of dropping out of school. The gap increases as the education level goes up and becomes the largest at the upper secondary level (see Figure 11).

Figure 11: Over-age attendance rates in Roma settlements in comparison to the national average



At the primary education level, 21–30 per cent of students in Roma settlements are already over-age in Kosovo, Montenegro and North Macedonia, while the national averages in these countries are as low as 2–7 per cent. In Serbia, the over-age rates in Roma settlements are relatively low at 8 per cent. At the lower secondary level, the over-age enrolment rates increase substantially in all countries with the highest rate of 53 per cent in Montenegro followed by North Macedonia (40 per cent), Kosovo (38 per cent) and Serbia (26 per cent), while the national rates remain low at 1–6 per cent. At the upper secondary level, the majority of students in Roma settlements are over-age as suggested by the over-age rates of 89 per cent in Montenegro followed by Serbia (70 per cent) and Kosovo and North Macedonia (66 per cent, respectively). Although the national rates also increase

to 8–15 per cent, the gap between Roma settlements and the national average becomes the largest at the upper secondary education level. It is worth noting that the over-age rates at the upper secondary level are high regardless of whether the school level is compulsory or not.¹¹

The findings indicate a need to address over-age attendance of children in Roma settlements already at the first cycle of basic education, but also to facilitate smooth promotion to the next grade as well as transition to the next education level. In countries where students are automatically promoted to the next grade at a given education level, the over-age enrolment would be related to late entry rather than grade retention.



¹¹ Upper secondary education is compulsory in North Macedonia only.

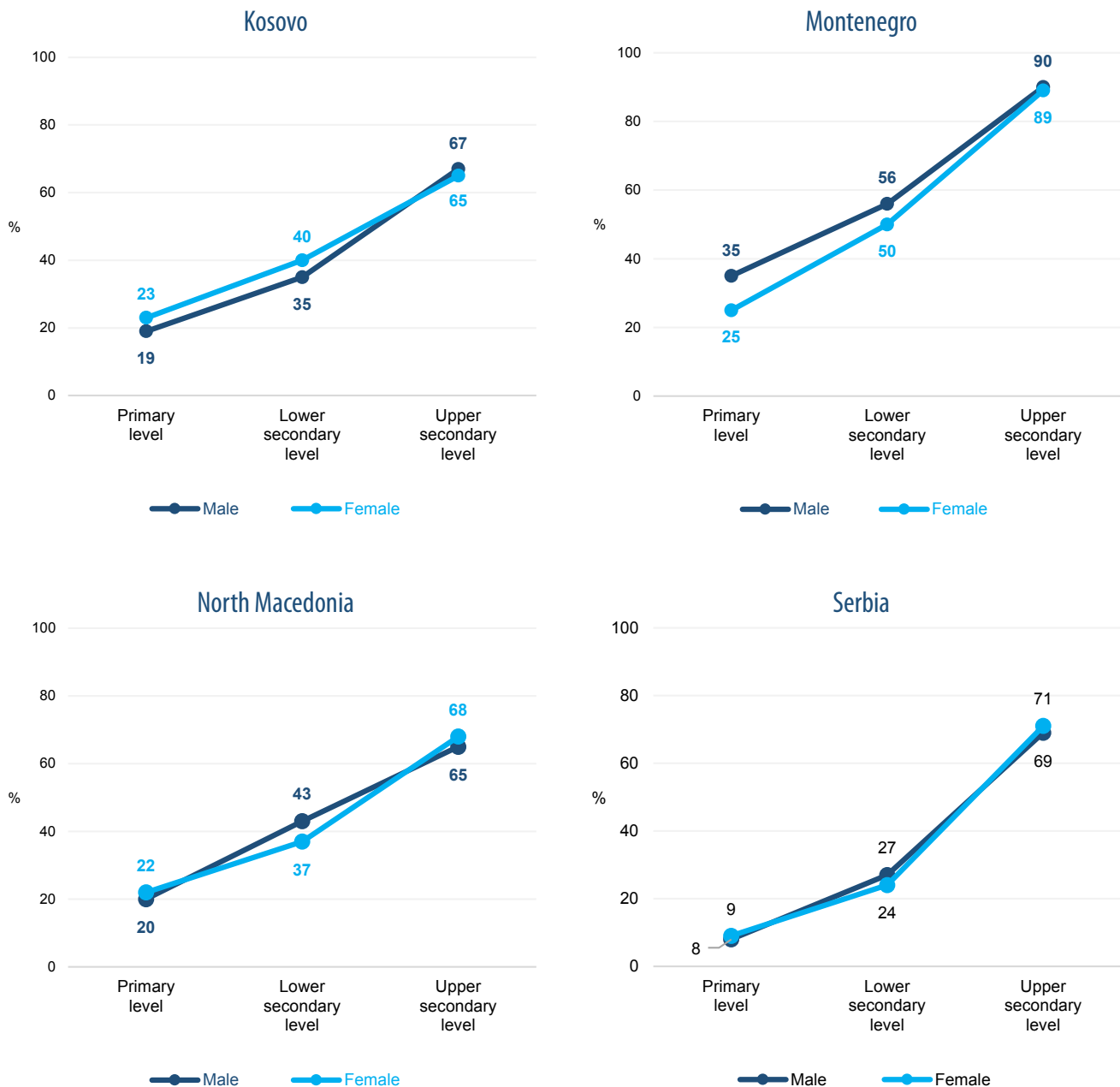
4.2.2 Heterogeneity within Roma settlements: Over-age attendance rates

Gender

Looking at the over-age attendance rates for male and female children in Roma settlements (see Figure 12), the results suggest the gender difference in over-age attendance is small, and its pattern varies by country and education level. A relatively large difference is found at the primary education level in Montenegro where male

students are more likely to be over-age than female students by 10 percentage points. At the lower secondary level, male students are more likely to be over-age in Montenegro, North Macedonia and Serbia by 3–6 percentage points, while female students have higher over-age rates in Kosovo.

Figure 12: Over-age attendance rates in Roma settlements, by gender



Household wealth

Results show a clear pattern, in which students from poor families are more likely to be over-age across education levels and countries, implying that students with economically disadvantaged background are exposed to higher risk of school dropout (see Figure 13). At the primary education level, 13–58 per cent of the poorest students are over-age, compared with 3–11 per cent of the richest students. At the lower secondary level, the gap in over-age rates between the poorest and wealthiest students increases to about 50 percentage points in

Kosovo and North Macedonia, followed by Montenegro (41-percentage-point difference). The gap by family wealth at the primary and lower secondary education levels is relatively small in Serbia. At the upper secondary level, more than 80 per cent of students from the poorest families are over-age in all four countries, with the highest rates found in Montenegro (97 per cent). Although the over-age rates for the richest families also increase to 41–83 per cent, these are still below the rates in other wealth quintiles.

Figure 13: Over-age attendance rates in Roma settlements, by household wealth quintile



Note: For ease of interpretation, the figure shows only the first (bottom 20%), third (40-60%), and fifth (top 20%) quintile.

Parents' highest education level completed

Looking at over-age attendance rates by parents' highest education level completed, results show a clear pattern in which students having less educated parents are more likely to be over-age across education levels and countries (see Figure 14). A large gap is found at the lower secondary education level in Kosovo where the over-age

rates of students having parents who completed only primary education or less are 49 percentage points higher than students whose parents completed secondary education. Montenegro demonstrates that students having parents who have a higher education degree are least likely to be over-age across education levels.

Figure 14: Over-age attendance rates in Roma settlements, by parents' highest education level completed

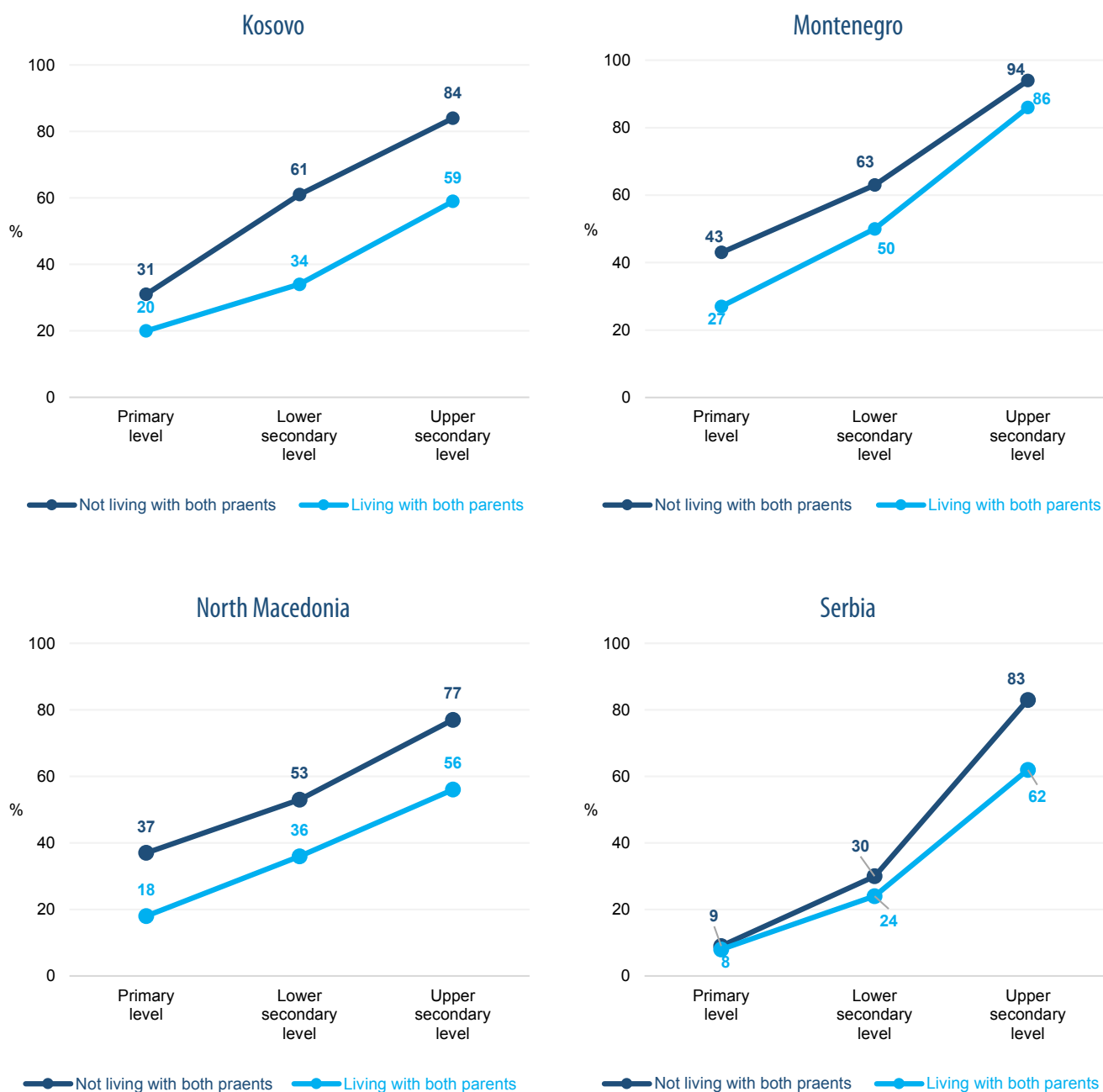


Living with both parents

The results show that students not living with both parents have higher over-age rates than those living with both parents consistently across education levels and countries (see Figure 15). A relatively large gap is found at the lower and upper secondary education levels in Kosovo where the over-age rates of students not living with both

parents are 25–27 percentage points higher than those living with both parents. The gap between the two groups is also large at the upper secondary education level in North Macedonia and Serbia (21-percentage-point difference, respectively).

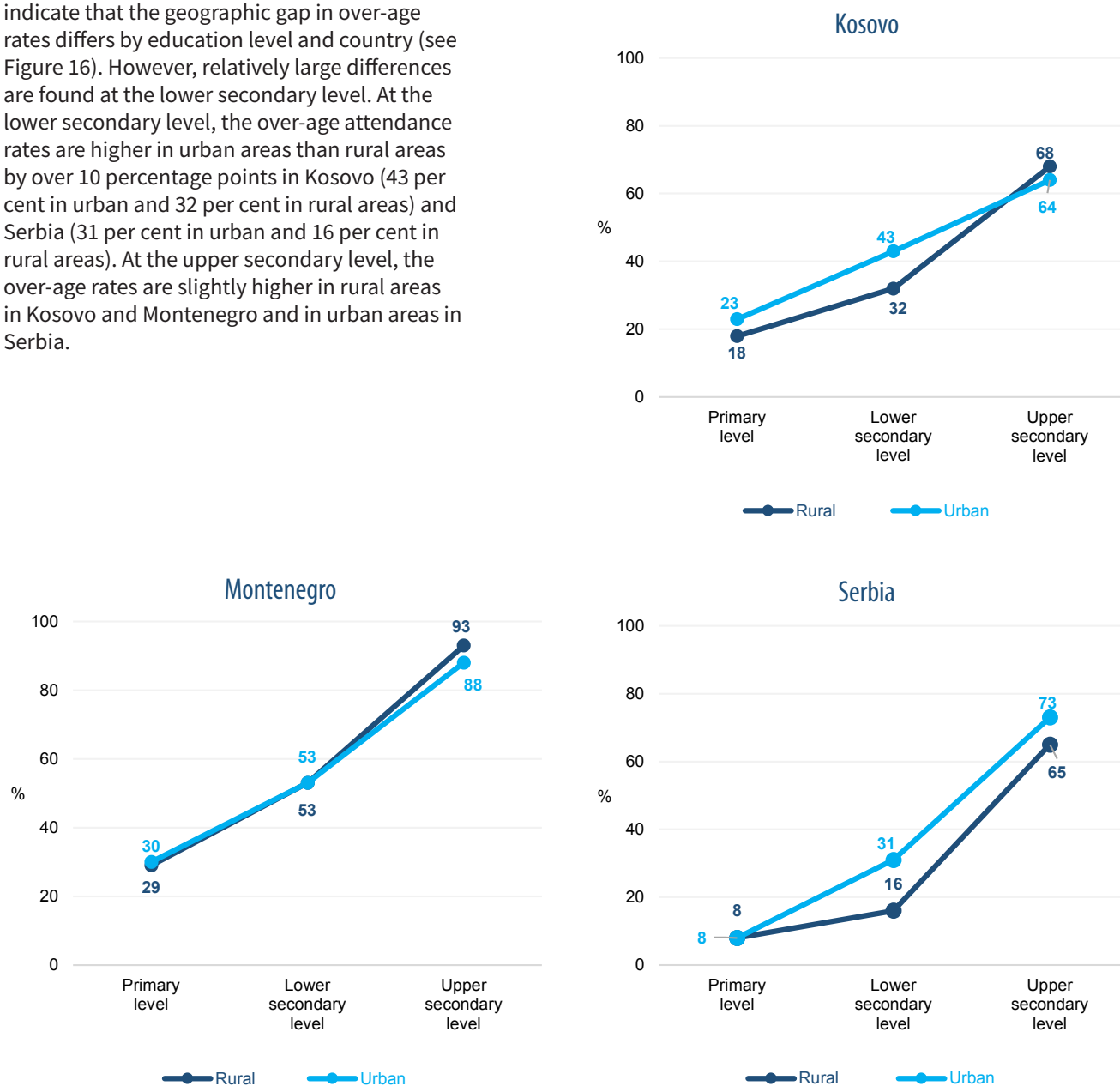
Figure 15: Over-age attendance rates in Roma settlements, by presence of parents in household



Location

Looking at the over-age attendance rates in urban and rural Roma settlements, results indicate that the geographic gap in over-age rates differs by education level and country (see Figure 16). However, relatively large differences are found at the lower secondary level. At the lower secondary level, the over-age attendance rates are higher in urban areas than rural areas by over 10 percentage points in Kosovo (43 per cent in urban and 32 per cent in rural areas) and Serbia (31 per cent in urban and 16 per cent in rural areas). At the upper secondary level, the over-age rates are slightly higher in rural areas in Kosovo and Montenegro and in urban areas in Serbia.

Figure 16: Over-age attendance rates in Roma settlements, by location



Note: Urban/rural disaggregation in North Macedonia is not available due to small sample size in rural areas.



4.3 Completion of primary and secondary education

Next, the study examined the extent to which children in Roma settlements complete primary and secondary education, which provides an opportunity to continue their learning at the next education level and participate in the labour market with educational credentials. The results suggest that, compared to the national averages, completion rates in Roma settlements are lower across education levels.

The analyses also indicate that, even within Roma settlements, some children face a higher risk of not

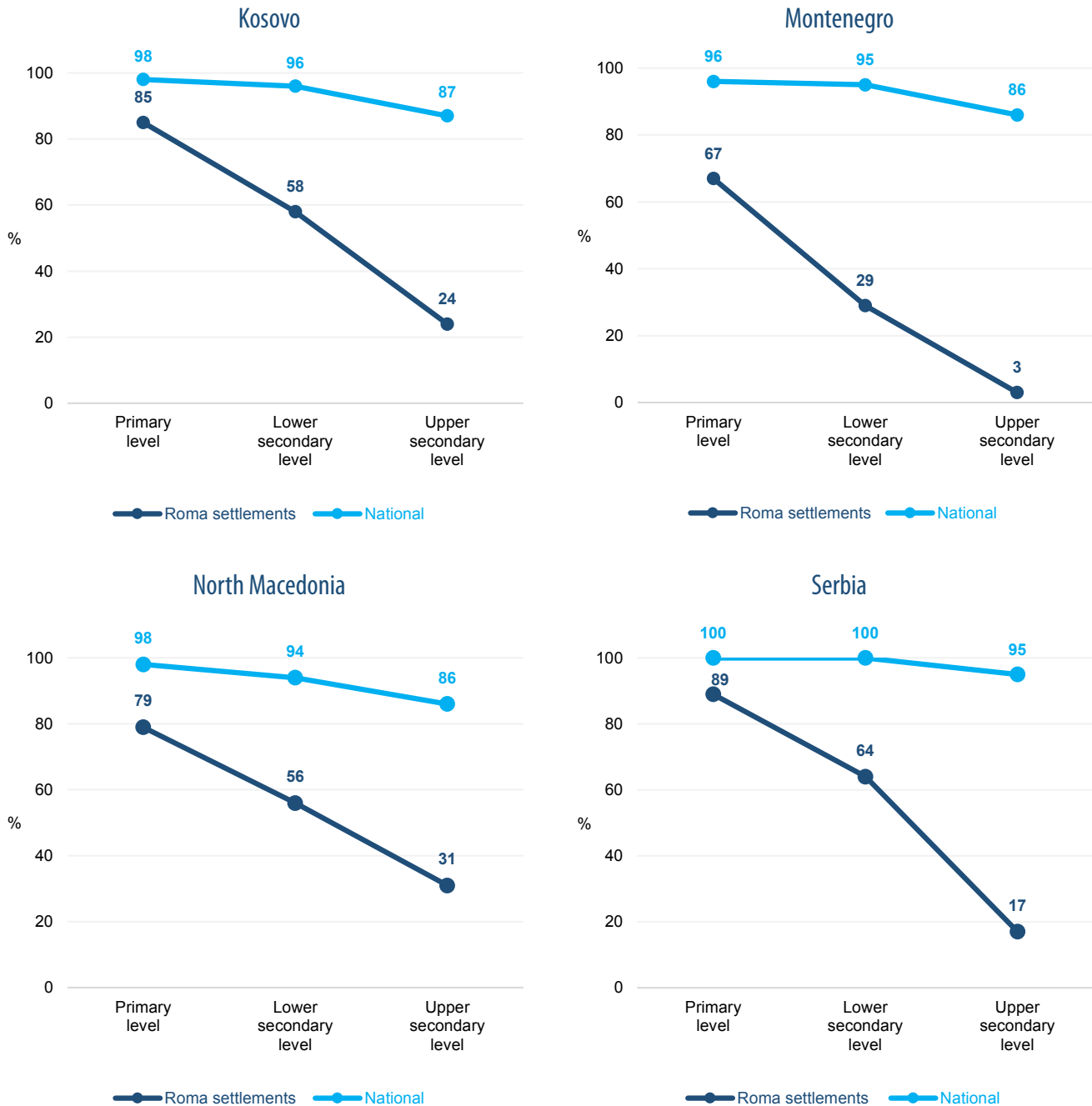
completing formal education. Children from poor households, having less educated parents, and not living with both parents have a lower chance of completing primary and secondary education across the countries. The completion rates are also lower for children who are engaged in child labour and have functional difficulties in Kosovo, North Macedonia and Serbia, but not in Montenegro. Completion rates also differ by child's gender and location (urban/rural), but the relationships vary depending upon education level and country.

4.3.1 School completion rates in Roma settlements

Across education levels and countries, the study found that children in Roma settlements have lower completion rates (see Figure 17). The difference increases as the

education level goes up mainly due to a sharp drop in completion rates in Roma settlements, which results in a large gap at the secondary level.

Figure 17: Completion rates in Roma settlements in comparison to the national average



At the primary level, completion rates for children in Roma settlements range from 67–89 per cent, while the national averages are 96–100 per cent. At the lower secondary level, completion rates sharply decrease in Roma settlements with the lowest rates of 29 per cent in Montenegro followed by North Macedonia (56 per cent), Kosovo (58 per cent) and Serbia (64 per cent), while the national averages remain high at 94–100 per cent. At the upper secondary level, the gap increases with a further reduction in completion rates in Roma settlements.

The completion rates in Roma settlements are merely 3 per cent in Montenegro, 17 per cent in Serbia, 24 per cent in Kosovo and 31 per cent in North Macedonia, while the national rates remain at 86–95 per cent in the four countries. These findings suggest the importance of providing support that facilitates children in Roma settlements to not only enrol and remain in school but to also meet all the requirements to complete a given cycle of school education.



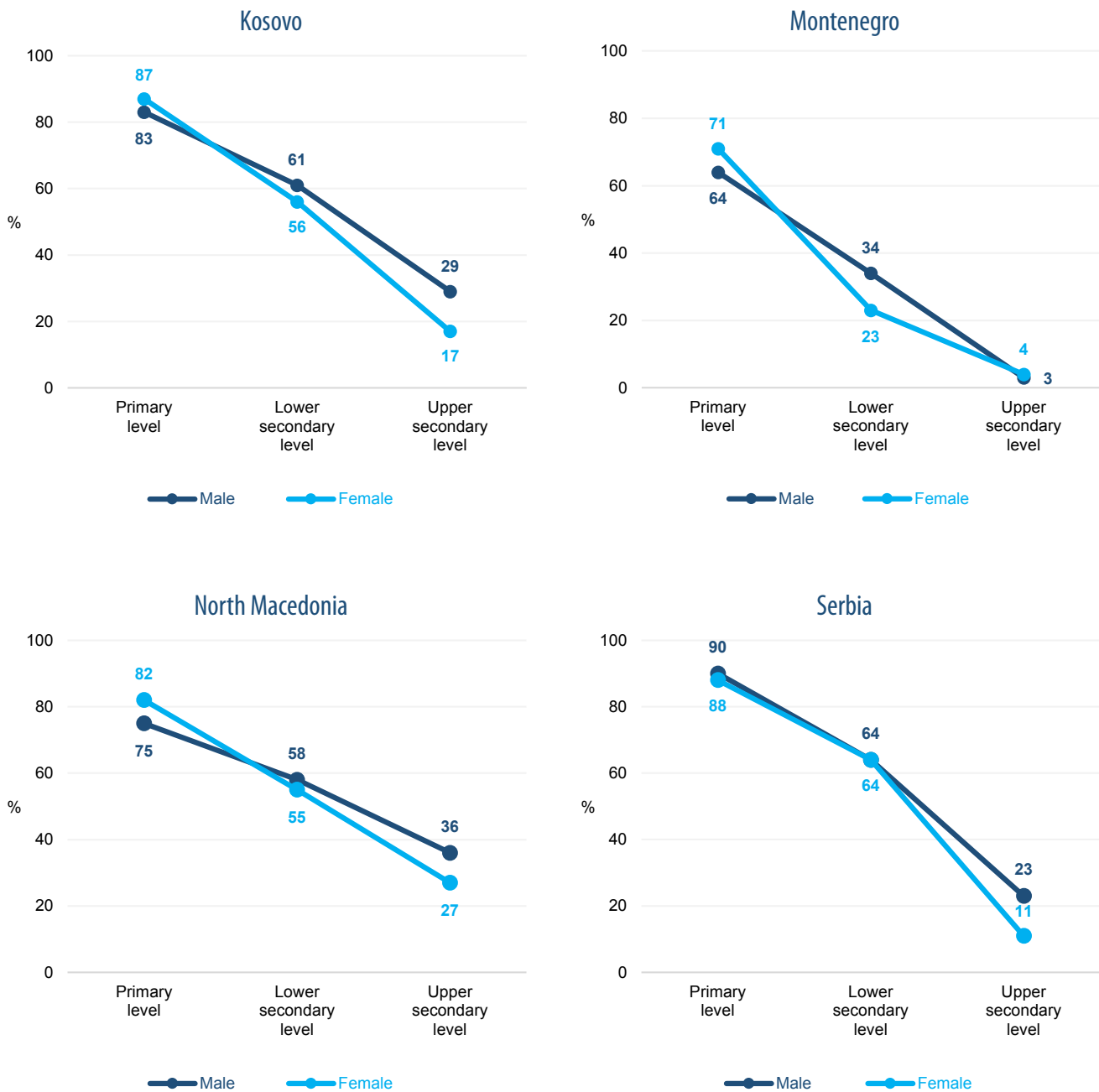
4.3.2 Heterogeneity within Roma settlements: School completion rates

Gender

The relationship between school completion and gender varies by education level (see Figure 18). At the primary level, girls have slightly higher completion rates (by 4–7 percentage points) in Kosovo, Montenegro, and North Macedonia. On the other hand, at the lower secondary

level, boys tend to have higher completion rates by 3–11 percentage points in these countries. The male advantage is also found at the upper secondary level in Kosovo, North Macedonia and Serbia where the completion rates for male students are higher by 9–12 percentage points.

Figure 18: Completion rates in Roma settlements, by gender



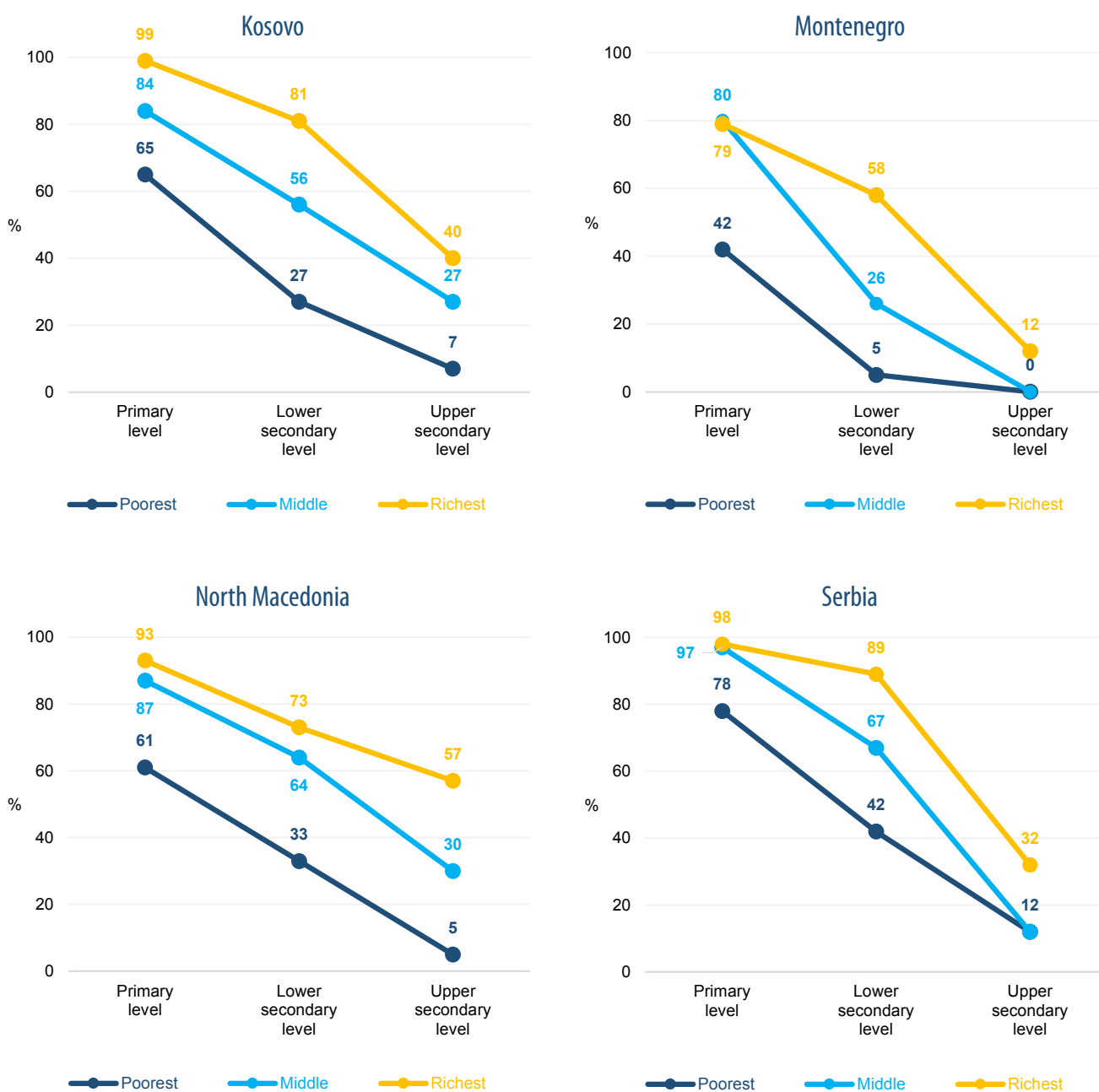
Household wealth

For household wealth, results show that, in general, the likelihood of completing a given level of school education is higher for children from rich households (see Figure 19). At the primary level, completion rates among the poorest children are as low as 42–78 per cent, while those for the richest children range from 79–99 per cent. This pattern becomes more obvious at the lower secondary level where the completion rates of the poorest families decrease to 5 per cent in Montenegro, followed by Kosovo (27 per cent), North Macedonia (33 per cent) and Serbia (42 per cent), while only the richest families enjoy the relatively high completion rates of 58–89 per cent.

relatively high completion rates of 58–89 per cent.

Interesting patterns emerge at the upper secondary level. The completion rates are very low not only for students in the poorest quintile (0–12 per cent) but also those in the middle quintile (0–30 per cent). The typical cases are Montenegro and Serbia where the middle quintile completion rates are as low as the poorest families (0 per cent in Montenegro, and 12 per cent in Serbia), while only the richest families enjoy the relatively high completion rates.

Figure 19: Completion rates in Roma settlements, by household wealth quintile



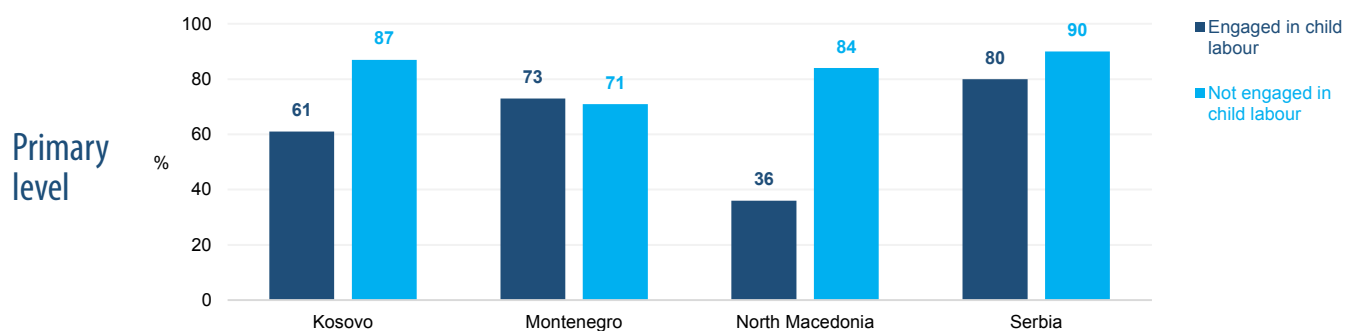
Note: For ease of interpretation, the figure shows only the first (bottom 20%), third (40-60%) and fifth (top 20%) quintile.

Child labour

Children who engage in child labour are less likely to complete primary education in Kosovo, North Macedonia and Serbia (see Figure 20). In particular, there is a stark difference in North Macedonia where only 36 per cent of children who engage in child labour complete the first

cycle of compulsory education, while 84 per cent of children not in child labour successfully complete primary schooling. Given the data on child labour is collected through the questionnaire for children 5–17 years old, results are for primary school level only.¹²

Figure 20: Completion rates in Roma settlements, by engagement in child labour

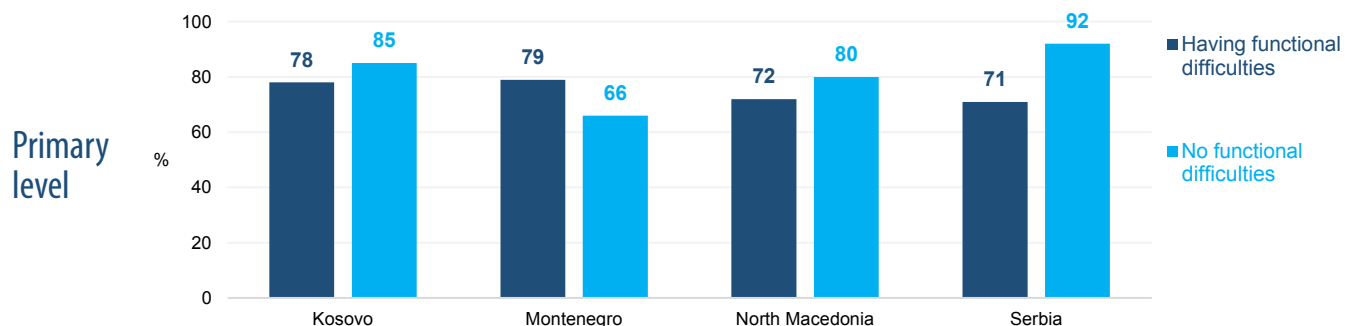


Functional difficulties

Children experiencing functional disabilities are less likely to complete primary education in Kosovo, North Macedonia and Serbia (see Figure 21). The difference is relatively large in Serbia where only 71 per cent of children with functional difficulties complete compulsory primary education, whereas over 90 per cent of children without functional

difficulties finish their primary education. Montenegro is a unique case where children with functional difficulties have higher completion rates at the primary education level. Given that data on child functioning is collected through the questionnaire for children up to 17 years old, the table presents the results for the primary level only.

Figure 21: Completion rates in Roma settlements, by presence of functional difficulties



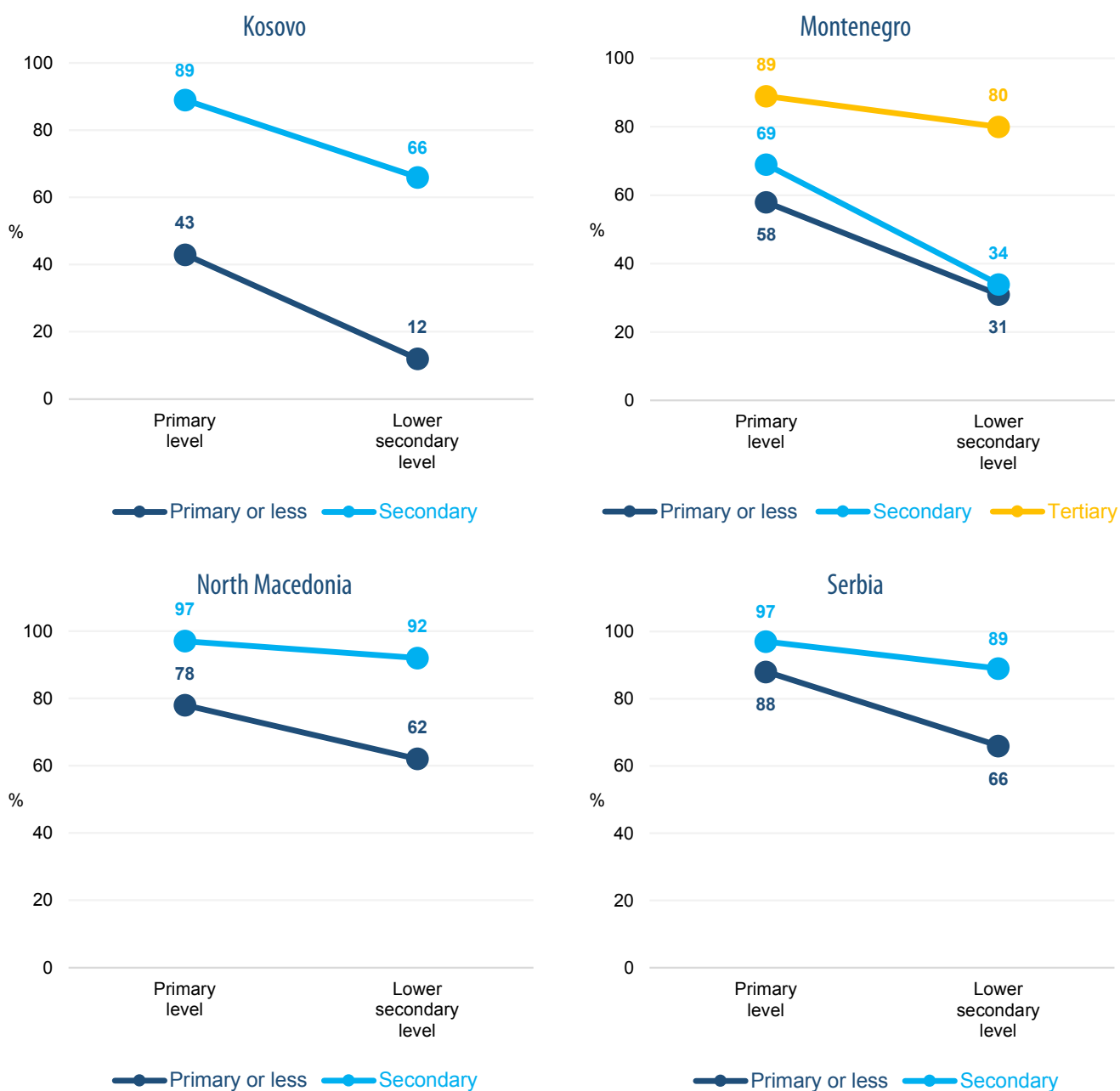
¹² Completion rates are calculated using the data of children aged 3–5 years above the intended age for the last grade of primary education. These children include those who have not finished primary education, completed primary education but did not transition to secondary education, and are currently attending secondary education. Therefore, being engaged in child labour does not necessarily mean that they worked or are working when they are in primary school.

Parents' highest education level completed

The study found that children having educated parents are more likely to complete primary and lower secondary education (see Figure 22). The completion rates of primary education are 43–88 per cent for children having parents with primary or less education. However, completion rates increase by 9–46 percentage points for children who have a parent with a secondary education certificate. The largest difference is observed in Kosovo where completion rates increase from 43 to 89 per cent. In Montenegro, completion rates also reach 89 per cent for children whose parent has a higher education degree.

Parents' education level is also related to the chance of completing lower secondary education. Compared to children whose parents finished primary education or less, those having parents who attained secondary education have higher completion rates by 54 percentage points in Kosovo, 30 percentage points in North Macedonia and 23 percentage points in Serbia. Montenegro is a unique case where the completion rates of lower secondary education do not change much by parents' secondary education attainment but jump up by 46 percentage points from 34 to 80 per cent for those having a parent with a higher education degree.

Figure 22: Completion rates in Roma settlements, by parents' highest education level completed

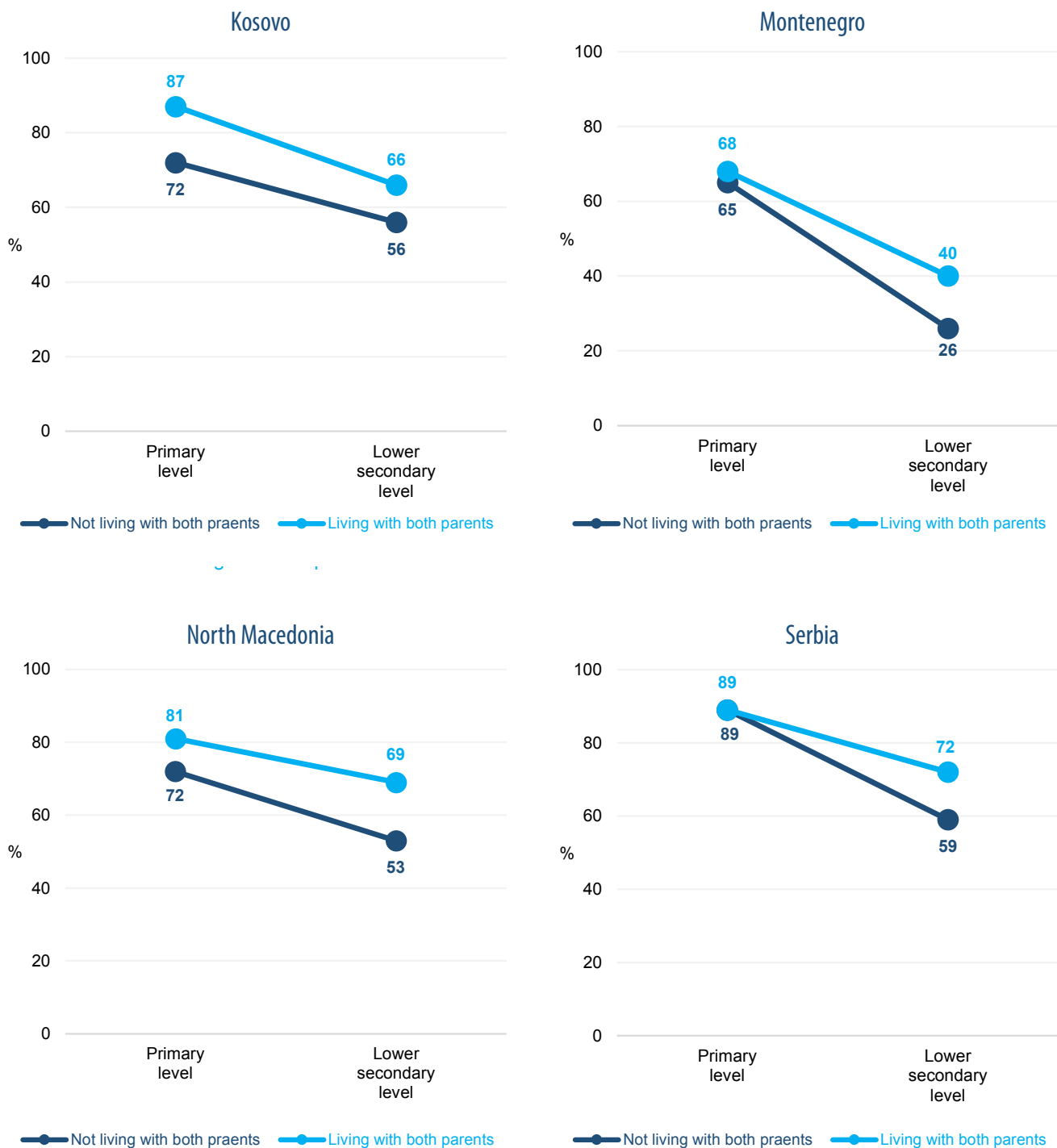


Living with both parents

In general, children who live with both parents have higher completion rates at both primary and lower secondary levels (see Figure 23). The gap is larger at the primary level

in Kosovo (15-percentage-point difference) but greater at the lower secondary level in Montenegro, North Macedonia and Serbia (about 14-percentage-point difference).

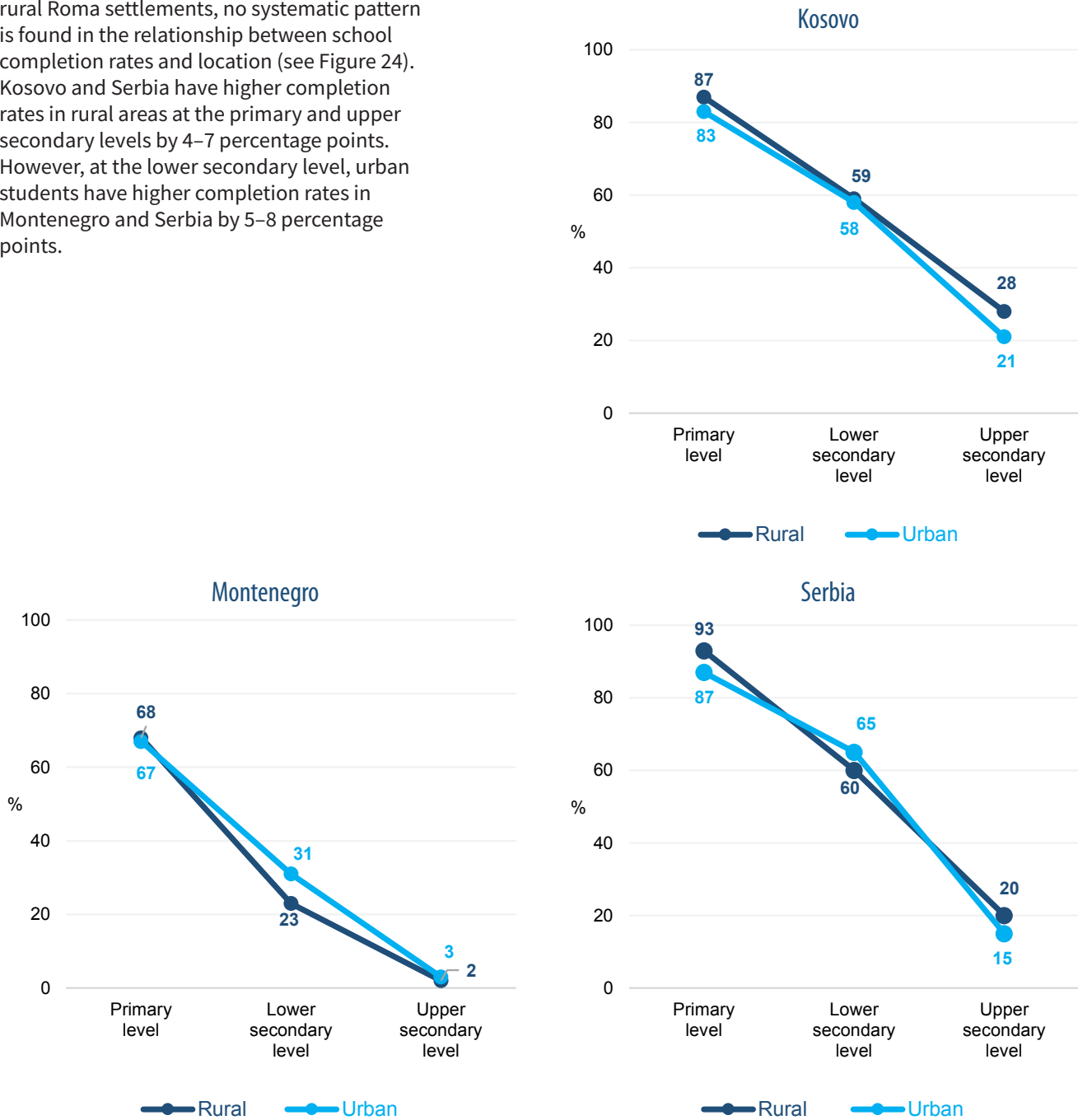
Figure 23: Completion rates in Roma settlements, by presence of parents in household



Location

Looking at differences between urban and rural Roma settlements, no systematic pattern is found in the relationship between school completion rates and location (see Figure 24). Kosovo and Serbia have higher completion rates in rural areas at the primary and upper secondary levels by 4–7 percentage points. However, at the lower secondary level, urban students have higher completion rates in Montenegro and Serbia by 5–8 percentage points.

Figure 24: Completion rates in Roma settlements, by location



Note: Urban/rural disaggregation in North Macedonia is not available due to small sample size in rural areas.



4.4 Educational pathway across the life course

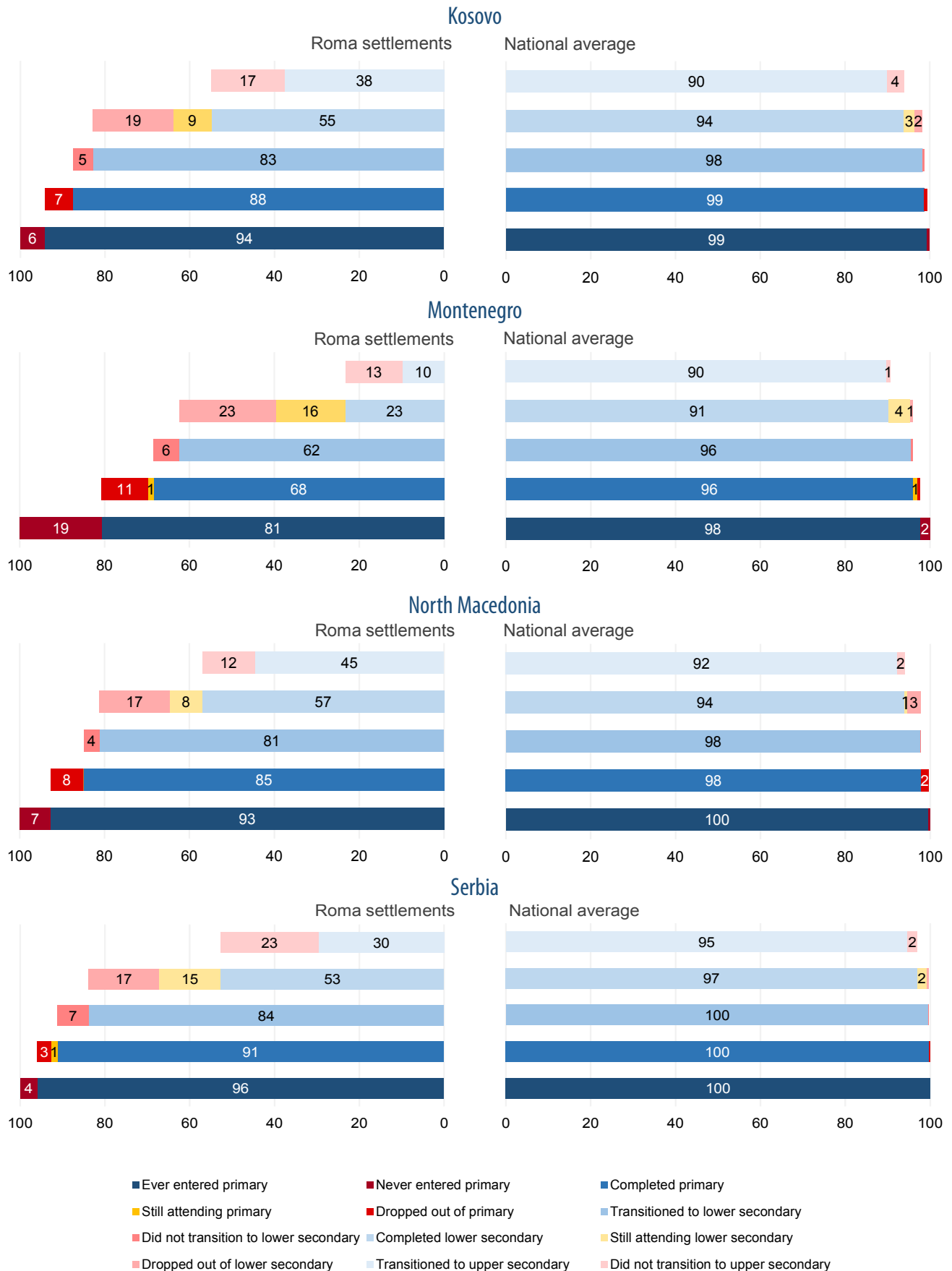
The results above provide suggestive evidence that children in Roma settlements face educational challenges throughout their childhood and adolescence. They are more likely to be excluded from education from the beginning, and even if attending school, face a higher risk of dropping out of school and a lower chance of completing primary and secondary education. Their educational journey and learning progression are hampered and interrupted at different stages.

In order to identify critical moments that determine educational attainment of children in Roma settlements, an education pathway analysis was conducted for upper

secondary-aged children¹³ in Roma settlements in comparison to the national averages. The results show rates of entry, completion, dropout and transition among education levels across the life course (see Figure 25). This study found that, consistently across education levels and countries, young people in Roma settlements are more likely to never have entered formal education, to have dropped out or to be attending an education level that corresponds with an age group lower than their current age, and are less likely to have transitioned to the next level of education. However, results also indicate that major barriers to continuing school education appear at different stages of life course depending on the country.

¹³ Children aged 15–18 in Kosovo, Montenegro and North Macedonia, and 14–17 in Serbia.

Figure 25: Percentage of children of upper secondary age, by educational status



Pathways through primary education

Entering and completing the first stage of basic education are the critical steps to transition to lower secondary level and continue required schooling and learning. However, children of upper secondary age in Roma settlements are disproportionately less likely to start and finish primary education compared to national averages.

The percentage of children in Roma settlements who entered primary education at some point, including those who may have entered late, is as high as 96 per cent in Serbia, followed by 93–94 per cent in Kosovo and North Macedonia and 81 per cent in Montenegro, but approximately 4–17 percentage points lower than the national averages. Unfortunately, entry into primary education does not guarantee its completion. In fact, 3–11 per cent of children in the age group dropped out of primary education in Roma settlements, compared with the national averages of less than 1–3 per cent. There is also a fraction of children of upper secondary age who are still attending primary school. As a result, the percentage of children of the age group who completed primary education in Roma settlements remains as low as 68 per cent in Montenegro and 85–91 per cent in the other three countries, all of which are 9–28 percentage points lower than the national averages.

Pathways through lower secondary education

Lower secondary education is compulsory in all four countries and serves as a critical step in promoting skills development in the national education system. However, the results of this study suggest that children in Roma settlements are less likely to transition to lower secondary education in all countries and to complete the education level. This indicates that limited legal action has been undertaken to ensure all children attend and complete compulsory education.

While between 96 and just under 100 per cent of children of upper secondary age enter lower secondary school nationally, the percentage of children who transitioned to lower secondary education in Roma settlements is as low as 62 per cent in Montenegro and 81–84 per cent in the other three countries. Consequently, in Roma settlements, the share of children who successfully transitioned to lower secondary is 11–19 percentage points lower than the percentage of those who ever entered primary education across these countries.

Completion of lower secondary education is another hurdle for children in Roma settlements in many of the countries. 17–23 per cent of children of upper secondary age dropped out of lower secondary school in Roma settlements, while the national averages are as low as 1–3

per cent. In Roma settlements, the share of those who dropped out during lower secondary education is almost five times as high in Serbia, three times as high in Kosovo and twice as high in Montenegro and North Macedonia as the percentage of those who dropped out during primary education. These ratios, however, are not notably larger than the ratios for national averages.

It is also important to note that, in Roma settlements, children of upper secondary age who are still attending lower secondary school account for 8–9 per cent of the age group in Kosovo and North Macedonia and 15–16 per cent in Montenegro and Serbia, all of which are higher than the national average. Consequently, the percentage of children of upper secondary age who completed lower secondary education in Roma settlements remain as low as 23 per cent in Montenegro and 53–57 per cent in the other three countries, which are lower than the national averages of 91–97 per cent.

Compared to the percentage of children of the age group who had transitioned to lower secondary education, the percentage of those who completed lower secondary education is lower by 39 percentage points in Montenegro, 31 percentage points in Serbia, 28 percentage points in Kosovo and 24 percentage points in North Macedonia in Roma settlements. Given that the differences in the national averages are as low as 3–5 percentage points, the result suggest that a disproportionately large share of children face challenges in completing lower secondary education in Roma settlements in the four countries.

Pathways through upper secondary education

Although upper secondary education is mandatory only in North Macedonia, the education level is deemed important to help prepare children for further education and skilled employment. However, children in Roma settlements are less likely than the national average to transition to upper secondary education by the time they reach upper secondary age, which contributes to even greater disadvantage of Roma children.

The percentage of children of upper secondary age who have transitioned to upper secondary education in Roma settlements is as low as 10 per cent in Montenegro, followed by Serbia (30 per cent), Kosovo (38 per cent) and North Macedonia (45 per cent). These are 47–80 percentage points lower than the national averages. It is important to note that the share of children of the age group who completed lower secondary but did not transition to upper secondary education is also higher in Roma settlements by 10–21 percentage points in the four countries.

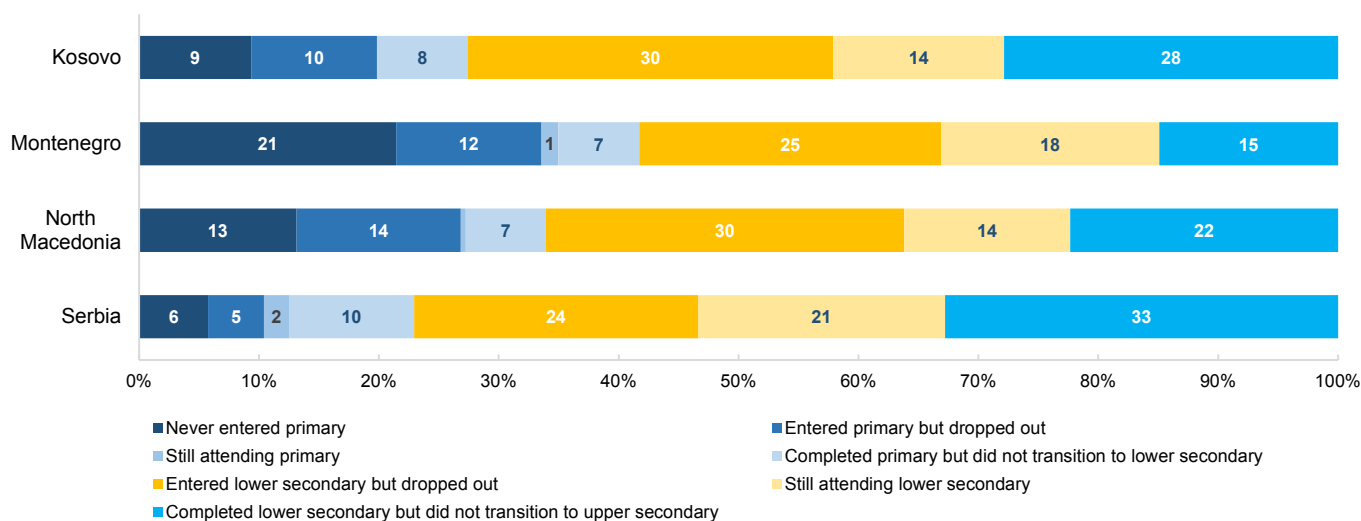
Key moments in the education pathway in Roma settlements

The results of education pathway analysis presented in Figure 25 provide an overview of educational experiences of children of upper secondary age in Roma settlements. In Kosovo, 94 per cent of children in Roma settlements enter formal education, 55 per cent complete lower secondary education on time and 38 per cent transition to upper secondary education. In Montenegro, while 81 per cent of children in Roma settlements enter formal education, only 23 per cent complete lower secondary education on time and 1 in 10 (10 per cent) transition to upper secondary education. In North Macedonia, 93 per cent of children in Roma settlements enter formal education, 57 per cent complete lower secondary education on time and 45 per cent transition to upper

secondary education. In Serbia, while almost all children (96 per cent) in Roma settlements enter formal education, 53 per cent complete lower secondary education on time and only 30 per cent transition to upper secondary education. The pathway analysis presents opportunities for intervening at different stages across the life course to close these gaps in access to school education.

In order to identify the critical moments where children in Roma settlements need support, the study also examined educational status of children of upper secondary age¹⁴ in Roma settlements who have not entered upper secondary education (see Figure 26).

Figure 26: Percentage of children of upper secondary age who do not enter upper secondary education in Roma settlements, by educational status



In Kosovo, the critical moments that prevent children in Roma settlements from enrolling in upper secondary education are successful completion of lower secondary education, including on-time completion, and transition from lower to upper secondary school. In fact, of those who have not entered upper secondary school, 30 per cent dropped out during lower secondary, 14 per cent are over-age but still attending lower secondary school and 28 per cent did not transition to upper secondary school after completing lower secondary.

In Montenegro, the key challenge for children in Roma settlements to enter upper secondary education already exists in initial entry into primary education. In fact, 21 per cent of the children who never attended upper secondary school are those who have never entered basic education. Another critical moment is successful completion of lower secondary education (25 per cent dropped out during lower secondary), particularly on time (18 per cent are still attending lower secondary school as over-age students).

¹⁴ Children ages 15 through 18 in Kosovo, Montenegro and North Macedonia and 14 through 17 in Serbia.

In North Macedonia, children in Roma settlements face challenges to enter upper secondary education more consistently across the education pathway. Initial entry into primary school and completing primary education are challenges given that, of those who have not entered upper secondary education, 13 per cent never entered primary school and 14 per cent dropped out during primary education. Completion of lower secondary is the most significant challenge (30 per cent dropped out during lower secondary), along with completing it on time (14 per cent are over-aged students still attending lower secondary school) and transitioning to upper secondary education (22 per cent did not transition to upper secondary school after completing lower secondary level).

In Serbia, patterns are somewhat different. Initial entry into and successful completion of primary education, including on-time graduation, appear to present minimal challenges to enter upper secondary education. In fact, of those who have not entered upper secondary education, just 6 per cent never attended primary education, 5 per cent dropped out during primary schooling and 2 per cent are still attending primary school. Interestingly, transition to lower secondary school seems to present a greater

challenge than in other countries: 10 per cent of upper secondary age youth who have never attended upper secondary school are those who completed primary but did not transition to lower secondary education. Drop-out during lower secondary school presents a less notable challenge than in the other countries, while over-age attendance presents a more notable challenge, as do barriers in transitioning to upper secondary education. Approximately one-third of all children of upper secondary school age who do not enter upper secondary education in Roma settlements are those who completed lower secondary education but did not transition.

The above results demonstrate that children residing in Roma settlements in different countries face educational challenges at different stages of their life course. However, there are also some critical moments that exist in many of the countries. Across these locations, initial entry into primary education, dropout during lower secondary schooling, over-age attendance at lower secondary level and transition to upper secondary education represent the moments during the education pathway in which children in Roma settlements would likely benefit from additional support.

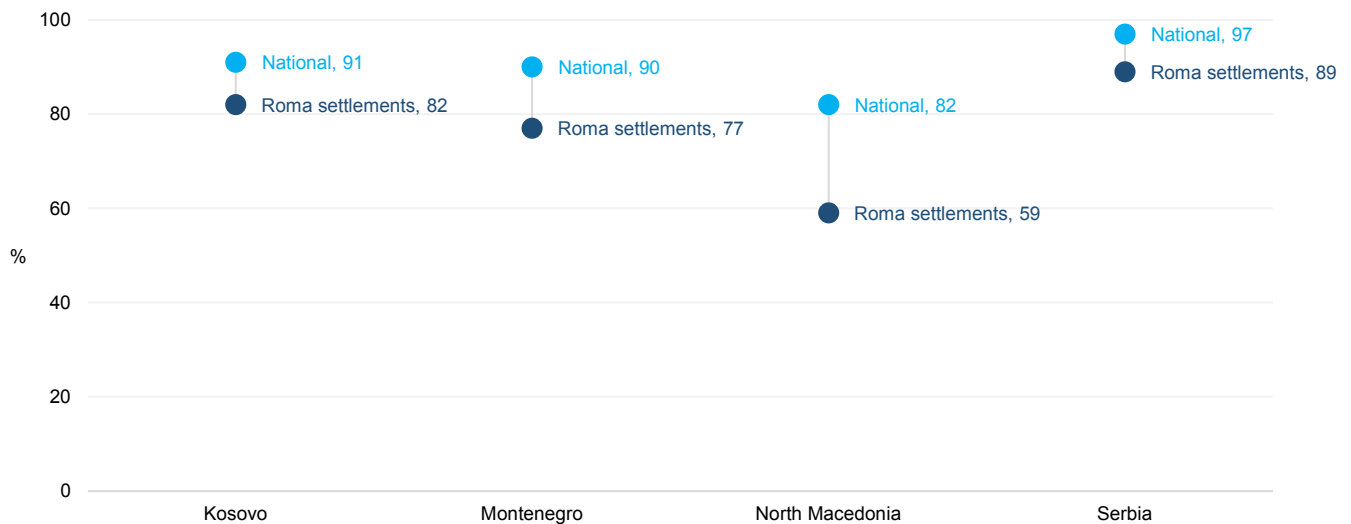


Box 2. Early childhood development in Roma settlements

Early childhood development is an important indicator for a successful transition to formal schooling and completion of compulsory education. Figure 27 shows the percentage of children aged 36–59 months who are developmentally on track, which is measured by Early Childhood Development Index (ECDI), in Roma settlements and in the whole nation. Children are considered developmentally on track if they are on track in at least three of the four domains (literacy/numeracy; physical; social/emotional; and learning).

The results indicate that children in Roma settlements are more likely to developmentally fall behind already in early childhood. Compared to the national average, the percentage of children developmentally on track in Roma settlements is lower by 23 percentage points in North Macedonia, followed by Montenegro (13 percentage points), Kosovo (9 percentage points) and Serbia (8 percentage points). In North Macedonia, over 40 per cent of the children in Roma settlements are off the developmental trajectory already before reaching six years old. The results imply that educational disadvantages of children in Roma settlements form from the very beginning of their life.

Figure 27: Early Childhood Development Index for children aged 36–59 months





4.5 Foundational skills

Children are expected to acquire knowledge and skills that are necessary to thrive in society through education. However, limited access to school education and a socioeconomically disadvantaged background may prevent children in Roma settlements from learning and developing skills. In order to assess learning outcomes, the study examined the extent to which children of primary and lower secondary school age are equipped with foundational skills.¹⁵ The assessment of foundational skills was conducted in Kosovo and North Macedonia only.¹⁶

The findings show that children in Roma settlements are less likely to acquire foundational skills in both reading and numeracy compared to national averages. Disaggregated analyses also show that, within Roma settlements, children with educated parents and living with both parents are more likely to be equipped with foundational skills in general. The relationships between skills development and other factors (i.e., gender, household wealth and location) are less consistent and

vary by age group, type of skill and country.

To understand the relative importance of different demographic and family factors in the development of foundational skills in Roma settlements, multiple regression analysis was conducted. The results show that completing an additional school grade is associated with an increase in the likelihood of acquiring foundational skills by 5–9 percentage points in both countries. Suggestive evidence was also found that children who engaged in child labour, experience functional difficulties, and use a language at home that is not an official school language, develop foundational skills through school education as much as other children do if they attend school. However, even after controlling for educational attainment, girls in Kosovo and children from less wealthy families, having less educated parents, and experiencing functional difficulties in North Macedonia have a lower chance of acquiring foundational skills, possibly due to differences in school quality and the learning environment at home.

¹⁵ In MICS6, children are considered to have foundational skills in reading if they can successfully read 90 per cent of the words in a short story and correctly answer questions related to the story. Children are considered to possess foundational skills in numeracy when they perform adequately in number recognition, number discrimination, simple addition and recognition using sequences of numbers.

¹⁶ The percentage of children who have foundational skills was calculated by school age group, not by age, due to a relatively small sample size at each age. Primary school age is 6–10 years and lower secondary age is 11–14 years in both countries.

4.5.1 Foundational skills of children in Roma settlements

The research examined the percentage of children in Roma settlements who have foundational skills in reading and numeracy in comparison with the national averages (see Figure 28). Results indicate that, compared to the national average, children in Roma settlements are less

likely to acquire foundational skills in both reading and numeracy already at the primary school age, and the disadvantage in skills development continues at the lower secondary school age.

Figure 28: Percentage of children who have foundational skills in Roma settlements in comparison to the national average



At the primary school age, the proportion of children possessing foundational skills in reading is 15 per cent and 23 per cent in Roma settlements of Kosovo and North Macedonia, while the national average is 36 per cent and 55 per cent in each of the countries. In numeracy, only 1 in 10 children in Roma settlements possess foundational skills in both countries, compared to the national averages of 35–36 per cent. The learning gap remains at the lower secondary school age as well. Although the proportion

of children equipped with foundational skills increases, the difference between children in Roma settlements and their national counterparts are between 19–35 percentage points. A relatively large gap is identified in reading skills in North Macedonia (42 per cent in Roma settlements against the national mean of 77 per cent) and numeracy skills in Kosovo (16 per cent in Roma settlements against the national average of 48 per cent).

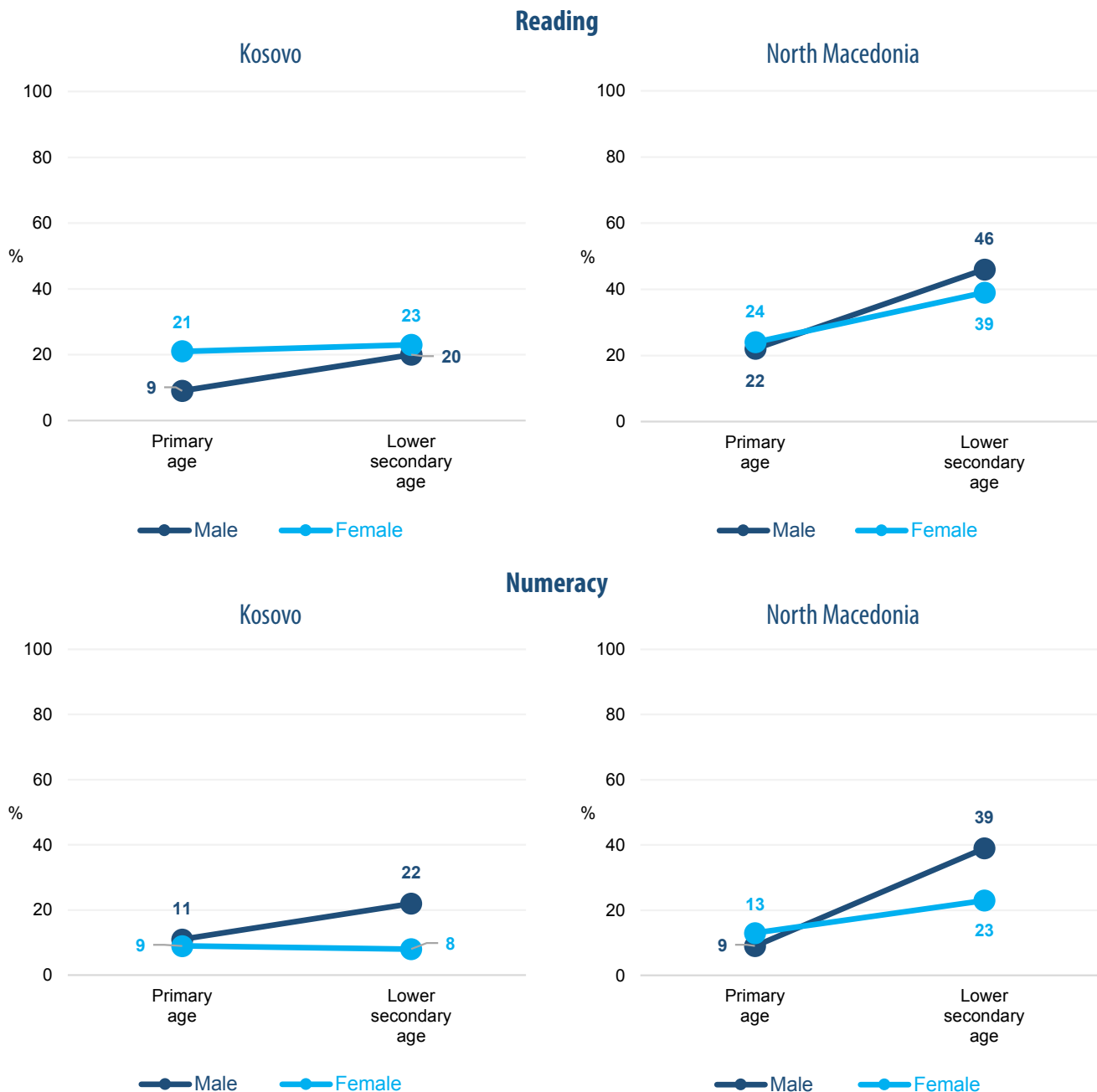
4.5.2 Heterogeneity within Roma settlements: Foundational skills

Gender

The relationship between gender and foundational skills varies with type of skill, age group and country (see Figure 29). In Kosovo, girls outperform boys in reading skills at the primary school age and less notably at the lower secondary age, but boys are better equipped with

numeracy skills at the lower secondary age. In North Macedonia, the share of children having foundational skills in both reading and math is slightly higher for girls at the primary school age but for boys at the lower secondary school age in both subjects.

Figure 29: Percentage of children who have foundational skills in Roma settlements, by gender



Household wealth

The results indicate that the relationship between wealth and foundational skills may not necessarily be consistent (see Figure 30). However, a relatively consistent pattern is found in reading skills at the primary school age in North Macedonia and the lower secondary school age in both

countries: children from wealthier families are more likely to acquire reading skills than those from less wealthy households. Nonetheless, the proportion of children with foundational skills remains low, even among the wealthiest households in Roma settlements.

Figure 30: Percentage of children who have foundational skills in Roma settlements, by household wealth quintile



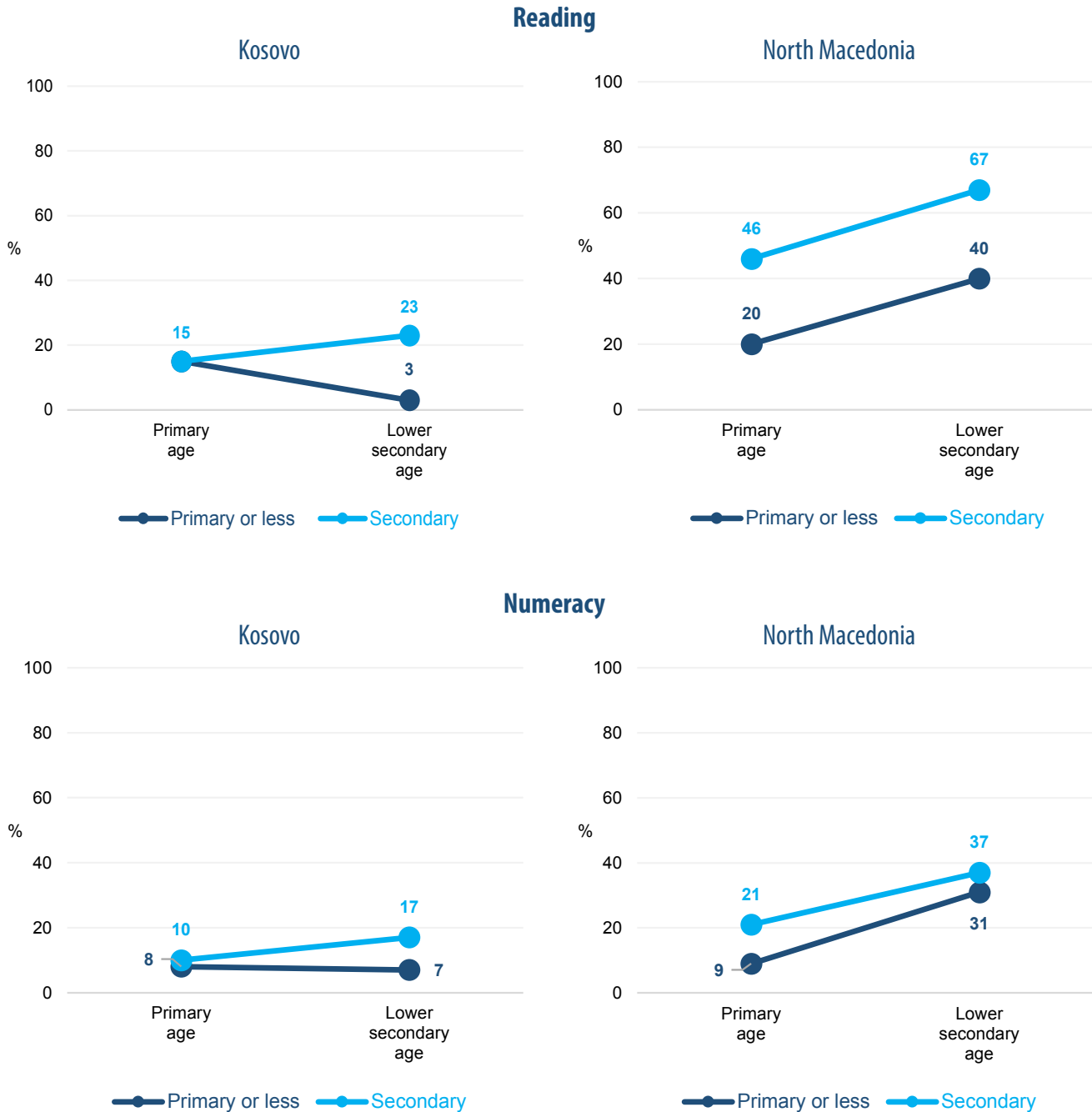
Note: For ease of interpretation, the figure shows only the first (bottom 20%), third (40–60%) and fifth (top 20%) quintile.

Parents' highest education level completed

In general, children having parents who completed secondary education are more likely to acquire foundational skills in both reading and numeracy compared to children whose parents completed only primary education or less (see Figure 31). A large

difference is found in reading skills in North Macedonia where children with educated parents are more likely to be equipped with foundational skills at the primary and lower secondary school age by 26–27 percentage points.

Figure 31: Percentage of children who have foundational skills in Roma settlements, by parents' highest education level completed

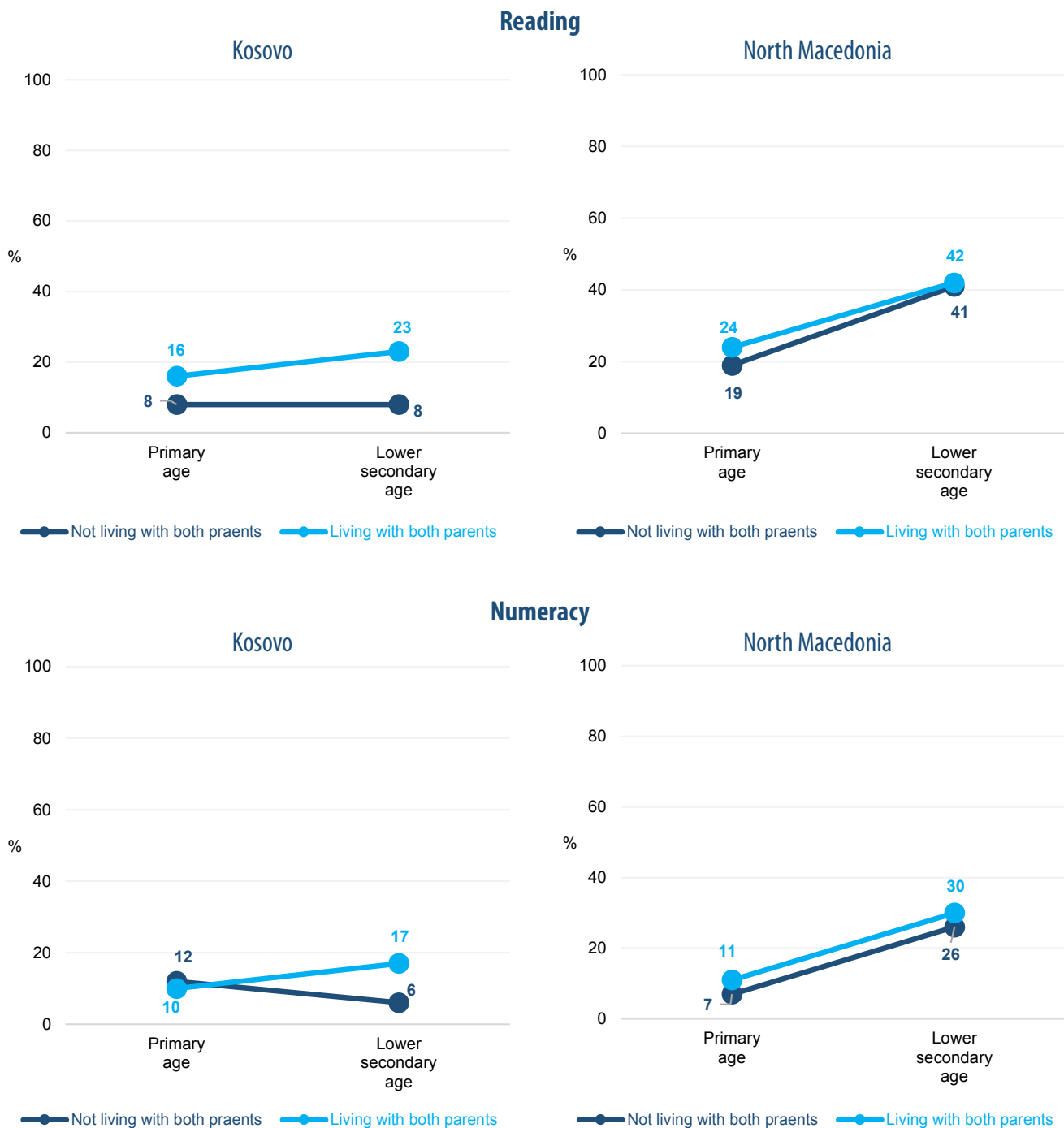


Living with both parents

Apart from one exception in numeracy skills at the primary school age in Kosovo, children living with both parents are more likely to be equipped with reading and numeracy skills (see Figure 32). A relatively large difference is found at the lower secondary age in Kosovo

where the proportion of children having reading and numeracy skills is higher for those living with both parents than those not living with both parents by 15 and 11 percentage points, respectively.

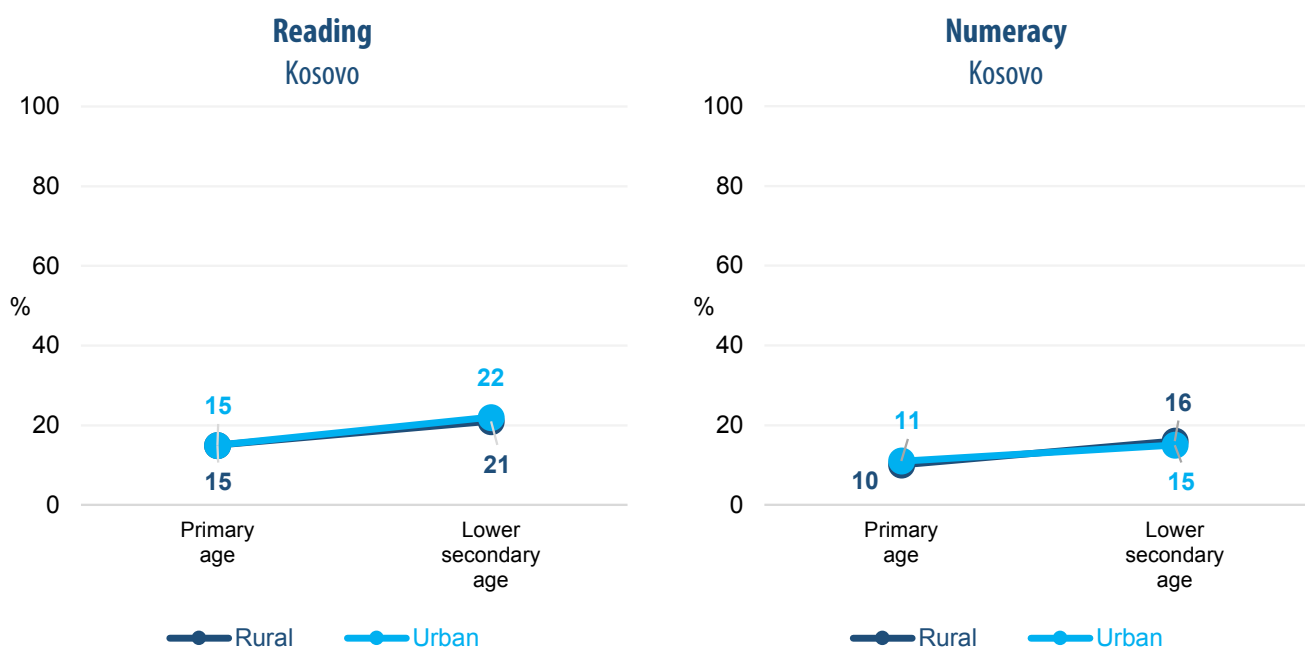
Figure 32: Percentage of children who have foundational skills in Roma settlements, by presence of parents in household



Location

Figure 33 shows the percentage of children who have foundational skills in urban and rural Roma settlements. There is little geographic difference in foundational skills development among children of primary and lower secondary school age in Kosovo.

Figure 33: Percentage of children who have foundational skills in Roma settlements, by location



Note: Urban/rural disaggregation in North Macedonia is not available due to small sample size in rural areas.



4.5.3 Factors associated with foundational skills

In order to examine how different demographic and household factors are associated with foundational skills development in Roma settlements, logistic regression models were estimated using a sample of children aged 7–14 who reside in Roma settlements. The multiple regression analyses help to understand the relative

importance of different factors in the acquisition of foundational skills, by isolating a relationship between a given factor and skills development. Table 3 presents the results of the analyses in average marginal effects (AME), which show an average change in the probability of acquiring foundational skills.¹⁷

Table 3: Average marginal effects on the probability of acquiring foundational skills in Roma settlements, aged 7–14

Variable	Reading skills		Numeracy skills	
	Kosovo	North Macedonia	Kosovo	North Macedonia
Age	-0.04* (0.02)	-0.02 (0.02)	-0.02 (0.02)	0.00 (0.02)
Female	0.02 (0.04)	0.03 (0.04)	-0.09*** (0.04)	-0.06* (0.04)
Highest school grade completed	0.07*** (0.02)	0.09*** (0.02)	0.05** (0.02)	0.05*** (0.01)
Child labour	0.05 (0.07)	-0.06 (0.12)	-0.04 (0.06)	-0.02 (0.10)
Functional difficulty	-0.03 (0.06)	-0.13*** (0.05)	-0.06 (0.05)	0.04 (0.05)
Parents' highest education level completed				
Primary	-0.05 (0.11)	0.15* (0.09)	-0.10 (0.09)	0.00 (0.08)
Lower secondary	-0.01 (0.10)		-0.01 (0.09)	
Upper secondary or tertiary	0.03 (0.11)		-0.03 (0.10)	
Secondary or tertiary		0.23** (0.10)		-0.00 (0.09)
Living with both parents	0.02 (0.06)	-0.04 (0.05)	-0.02 (0.06)	-0.02 (0.05)
Household wealth index	0.03 (0.03)	0.06** (0.02)	0.04* (0.02)	0.07*** (0.03)
No. of school-aged children in household	0.00 (0.01)	-0.01 (0.01)	0.00 (0.01)	-0.00 (0.01)
Using an official school language at home	0.10 (0.08)	0.02 (0.04)	0.04 (0.08)	0.04 (0.04)
Urban	0.01 (0.04)	0.10 (0.09)	0.03 (0.04)	-0.00 (0.08)
Observations	393	419	393	419
Pseudo R ²	0.09	0.22	0.12	0.17

Note: Average marginal effects (AME) and their standard errors are in parentheses. The reference category of parents' highest education level is pre-primary or less. Robust standard errors are used for estimation. Significance level: *** p<0.01, ** p<0.05, * p<0.1. AME that are statistically significant at the 5% level are in bold.

¹⁷ Please see Appendix 3 for a detailed explanation of the model and the full results in odds ratio.

The results found that school education contributes to skills development in Roma settlements, even after controlling for the range of child and household characteristics. The results show that completing an additional school grade is associated with an increase in the likelihood of acquiring foundational skills in reading by 7–9 percentage points and in numeracy by 5 percentage points in both countries.

There are several other factors that are statistically significantly associated with the probability of acquiring foundational skills in Roma settlements, even after controlling for the highest education grade completed and other child and household characteristics. For example, girls face a 9-percentage-point lower chance of acquiring foundational skills in numeracy in Kosovo. Although engagement in child labour has no significant relationship with foundational skills development, having functional difficulties is associated with a 13-percentage-point decrease in the probability of acquiring reading skills in North Macedonia. Because the models controlled for the school grade completed, the observed associations are likely to capture the variation in foundational skills development due to differences in school quality and learning environment at home.

A few other factors contribute to increasing the chance of developing foundational skills in Roma settlements, after accounting for the highest education grade completed. Parents' education level is significantly associated with the development of foundational skills in North Macedonia only. The results suggest that, in Roma settlements in North Macedonia, children whose parents have a secondary education diploma or tertiary education degree, have a 23-percentage-point higher probability of being equipped with foundational skills in reading, compared to those having parents who do not complete primary education. Household wealth also has a significant, positive association with skills development in North Macedonia.¹⁸ These associations capture the variation in foundational skills that is not explained by education attainment, such as differences in the quality of learning environment at school and home.

Exploration of heterogeneous effects of school education

The findings above provide evidence that school education has an important role to play in promoting foundational skills development in Roma settlements in Kosovo and North Macedonia. However, the degree of skills development associated with an additional year of education may differ depending on the characteristics of children in Roma settlements. For instance, children who are engaged in child labour may not gain the same level of benefits from schooling if they skip school and class more often than other students. Those who have functional difficulties may not be able to learn in school as much as others do if schools do not adequately support them. Children who use a language that is not an official school language at home may learn less at school due to a language barrier.

In order to explore the heterogeneous effects of school education, interaction models were estimated in which the highest grade completed is interacted with engagement in child labour, presence of functional difficulties, and whether the home language is an official school language, respectively.¹⁹ The results (see Appendix 4), show that the relationship between completing an additional grade level and acquisition of foundational skills does not change according to engagement in child labour, presence of functional difficulties, or use of a language that is not a school language at home, at the 5 per cent significance level. The findings imply that children in Roma settlements acquire foundational skills through schooling similarly regardless of the presence of these disadvantages if they attend school.

In order to explore the hypothesis, the study calculated the average marginal effects of completing an additional grade level on the acquisition of foundational skills for children with and without each of the disadvantages, respectively. The results (see Table 4) show that the marginal effects are positive and similar in magnitude for both children with and without the disadvantage, although the effects are not statistically significant for children whose home language is not an official school language in Kosovo.

¹⁸ A one-unit increase in the wealth index score, which is equivalent 0.99 SD, is associated with an increase in the likelihood of acquiring foundational skills by 6 and 7 percentage points in reading and numeracy, respectively, in North Macedonia.

¹⁹ The languages of instruction at school in Kosovo are Albanian, Serbian, Turkish, Bosnian and Croatian. Those in North Macedonia are Macedonian, Albanian, Turkish, Serbian and Bosnian.

Table 4: Average marginal effects of highest grade completed on acquisition of foundational skills in Roma settlements, by existence of disadvantage, aged 7–14

Variable	Reading skills		Numeracy skills	
	Kosovo	North Macedonia	Kosovo	North Macedonia
Highest school grade completed				
<u>By child labour</u>				
Engaged in child labour	0.07*** (0.02)	0.09*** (0.02)	0.05** (0.02)	0.05*** (0.01)
Not engaged in child labour	0.08*** (0.03)	0.08*** (0.02)	0.04* (0.02)	0.05** (0.02)
<u>By functional difficulties</u>				
Having functional difficulties	0.07*** (0.02)	0.09*** (0.02)	0.05** (0.02)	0.05*** (0.01)
Not having functional difficulties	0.06** (0.03)	0.07*** (0.02)	0.04* (0.02)	0.06*** (0.02)
<u>By language used at home</u>				
Not an official school language	0.04 (0.03)	0.08*** (0.02)	0.04 (0.03)	0.05*** (0.01)
An official school language	0.07*** (0.02)	0.09*** (0.02)	0.05** (0.02)	0.05*** (0.02)

Note: The table shows average marginal effects (AME) and standard errors in parentheses for the highest school grade completed, estimated by the basic model. Robust standard errors are used for the estimation. Significance level: *** p<0.01, ** p<0.05, * p<0.1. AME that are statistically significant at the 5% level are in bold.

The findings provide suggestive evidence that, in Roma settlements in Kosovo and North Macedonia, children who are engaged in child labour or have functional difficulties acquire foundational skills through school education like other children do if they attend school, even after controlling for a range of demographic and household characteristics. In North Macedonia, children

who speak a language that is not an official school language at home, can also develop foundational skills through school education as much as other children do, accounting for the other factors. These results shed light on the importance of inclusive education for the most marginalized children in Roma settlements to acquire the skills necessary to participate in society.



5 Conclusions and recommendations

In Europe, Roma children are among the most marginalized from their earliest moments of life, including in the areas of educational participation and learning outcomes. They are recognized as an educationally disadvantaged group that requires interventions and support from the perspectives of educational rights and equity. However, the Roma population is not homogeneous. They are different in many aspects including individual and household characteristics and thus have different educational experiences and outcomes and consequently, different needs for support. To this end, international communities have called for a stronger focus on diversity within the Roma population and addressing unique needs of different Roma groups (e.g., European Commission, 2020).

To respond to the call and fill gaps in the existing research, this report examined the educational situations of different groups of children in Roma settlements by using household data from the sixth round of MICS in Kosovo, Montenegro, North Macedonia and Serbia. The data enabled analysis of education access and learning outcomes of children in Roma settlements who are both in school and out of school. Below are the summarized findings and policy implications.

Children in Roma settlements fall behind in participation in education and learning

The study found that children in Roma settlements consistently fall behind in both education access and outcomes in comparison to the national averages. Across education levels, age groups and countries, they are significantly less likely to attend school; more likely to be over-age and thus face higher risk of drop-out; less likely to complete primary and secondary education; and have a lower chance of acquiring foundational skills. It is also important to note that, regardless of continued efforts, the out-of-school rates in Roma settlements have not changed much since the last round of MICS surveys in most of the countries. The lasting impact of school closure during the COVID-19 pandemic, which hit vulnerable children the hardest, is likely to have widened the observed educational inequalities due to unequal access to support and resources including digital learning (e.g., United Nations Montenegro, 2020). These findings thus reaffirm the need to address the educational inequalities by providing dedicated support to children facing educational challenges in Roma settlements as well as maintaining the slight improvement that Montenegro and Serbia have for their children.

School education is a driver for foundational skills development regardless of disadvantages

The data collected in Kosovo and North Macedonia indicate that, even within Roma settlements, there are gaps in foundational skills development according to children's own characteristics and home environment. However, school education appeared as the only factor that is associated with foundational skills development across the countries and the types of skills based on the analytical model. A series of regression analyses suggest that, in Roma settlements, completing an additional school grade level is associated with an increase in the likelihood of acquiring foundational skills in reading and numeracy by 5–9 percentage points. Suggestive evidence was also found that, within Roma settlements, children engaging in child labour, experiencing functional difficulties, and using a language at home that is not an official school language, can develop foundational skills through school education as much as other children do if they can attend school.

These findings reaffirm the importance of inclusive education as a social mechanism to help all children – including the most marginalized children in Roma settlements – acquire the knowledge and skills necessary to thrive in society. Given the low school attendance rates in Roma settlements, bringing children in Roma settlements back to school would be key to closing the learning gap in these countries, although school attendance alone may not be enough to fully achieve equitable learning outcomes. Certainly, the quality of school education and learning environment at home play a crucial role in learning gain and skills development, and this needs to be further examined by future research.

Addressing the exclusion of marginalized children from school education

Despite the observed benefits of schooling for learning and skills development, the data show that access to school education is not equal even within Roma settlements. Even after entering school, some children in Roma settlements face higher risk of dropping out. Identifying at-risk children and providing interventions to support their school enrolment, retention and completion are therefore crucial to achieve equitable, inclusive education for all.

Socioeconomically disadvantaged children in Roma settlements: Supporting school entry and completion of children from socioeconomically disadvantaged families in Roma settlements is key to closing educational equity gaps in all the countries. The regression analysis suggests that, in Roma settlements, household wealth has a negative association with risk of being out of school across the countries. It also indicates that, in Kosovo, the likelihood of school exclusion in Roma settlements increases for children that do not live with both parents. The data also show that, in Roma settlements, students from poor families, having less educated parents, and not living with both parents have higher over-age attendance rates. They likely face greater risk of dropout, as well as a lesser chance of completing both primary and secondary education across countries and education levels.

Providing additional support to these children and their families would be important to ensure that every child accesses and benefits from school education. For instance, if the cost of schooling is a major barrier, a reduction in school formal/informal fees and the provision of vouchers and transportation services could be an option to promote school entry, attendance and completion, although these need to be designed in context. Actions can also be taken to ensure they enter school on time and attend the grade level expected for their age and prevent dropout in Roma settlements. For example, collecting student information (e.g., family environment, school readiness, attendance records and achievement) prior to school entry age and during schooling, as well as diagnosing the risk of late entry and grade retention of the socioeconomically disadvantaged students would be important. It would be equally important to provide those who had dropped out with an opportunity to resume and continue their learning by supporting re-entry and strengthening the connections between formal and non-formal education opportunities.

Children engaged in child labour in Roma settlements:

To bridge educational inequality in several countries, supporting school attendance and completion among children engaged in child labour in Roma settlements are key areas for interventions. This research found that engagement in child labour is associated with

an increase in the probability of being out of school by 11–29 percentage points in Roma settlements in Kosovo, North Macedonia and Serbia. Also in these three countries, primary school completion rates are lower for children who engage in child labour. Regardless of family wealth, taking measures to prevent children in Roma settlements from income-generating activities, such as enforcement of legal provisions and community monitoring, would be important to protect the right to education in these countries. If the opportunity cost of schooling is a bottleneck, conditional cash transfers could be an option to help working children back to school. Providing non-formal education, which may help working children continue learning and integrate into formal school education, could be another measure to address educational inequality depending on the context.

Children with functional difficulties in Roma settlements:

The research suggests that the presence of functional difficulties is associated with a 10-percentage-point increase in the likelihood of being excluded from school education in Roma settlements in Kosovo. To identify children with functional difficulties at an early stage and support their enrolment, attendance and retention in school, inter-sectoral coordination at national and local levels and policy interventions such as development of inclusive education standards would help. In addition, in Kosovo, North Macedonia and Serbia, the primary school completion rates are lower for children with functional difficulties. Promoting inclusive education practices at primary school, such as individual education plans and inclusive pedagogy, would help meet these children's learning needs and facilitate their primary school completion. Assessment and removal of the barriers to implementing inclusive education practice is critical given that legal provisions related to inclusive education are often not fully enforced. This is due to a number of reasons, which include insufficient resources at school, a lack of understanding and skills of school personnel, and social norms that impact the views and behaviours of local communities, including parents.

Girls in Roma settlements: Supporting girls' enrolment and attendance is key to address educational inequalities, particularly in Kosovo, where girls face a 5-percentage-point higher probability of being out of school. To facilitate their school attendance, gender-sensitive approaches can be used to remove barriers girls face, such as insufficient sanitation facilities, gender-based bias in teaching practices and a lack of awareness of the importance of girls' education in communities and families. In order to design effective interventions, a review and assessment of structural barriers that prevent girls from attending school would need to first take place.

Giving priority to remove bottlenecks at the critical moments in the education pathway

There are multiple entry points to address inequalities in education access and outcomes in Roma settlements, which include entry into, retention in and completion of a given education level as well as transition to the next level. Across the countries, the research showed that initial entry into primary education; dropout during lower secondary schooling; over-age attendance at lower secondary level; and transition to upper secondary education, represent the moments in which many children in Roma settlements face challenges and thus would likely benefit from additional support. In North Macedonia, dropout during primary education is another notable challenge to be addressed and in Serbia, successful transition to lower secondary education is found to be a challenge. Prioritizing removal of educational bottlenecks at these critical moments would be an effective approach to address inequalities in education access and outcomes in these countries.

Attaining secondary education has an important implication for the reproduction of educational disadvantages in Roma settlements in Kosovo, Montenegro and North Macedonia. The research suggests that, in Roma settlements, having parents who completed secondary education is associated with a decreased likelihood of being out of school in all three countries, holding the other factors constant. This implies that attaining secondary education would be key for breaking the cycle of educational disadvantage over generations in Roma settlements. While children in Roma settlements fall behind throughout their educational pathway and there exists multiple entry points to address inequality, secondary education completion can be set as a strategic goal to achieve inclusive, equitable education in a sustainable manner.

Promoting foundational skills development at school and home for marginalized children

School education has significant, positive association with the acquisition of foundational skills in Roma settlements in both Kosovo and North Macedonia. However, the research identified several other factors that are significantly associated with foundational skills development. Because the models accounted for the school grade completed, the observed associations likely capture the variation in foundational skills development that is not explained by educational attainment, such as differences in school quality and learning environment at home. This indicates that school attendance alone is not enough to address learning inequality in these countries.

In Kosovo, for example, girls have a 9-percentage-point lower probability of acquiring foundational skills in numeracy in Roma settlements, holding the highest school grade completed and other factors constant. This suggests there is potential to bridge the inequality in skills development in Kosovo further by providing interventions and support that enable girls in Roma settlements to learn more at school and home. One possible policy option would be a girl-centred approach for skills development, which empowers girls by providing opportunities to acquire and apply a range of skills in safe environments, with their own leadership and under mentorship (Plourde et al., 2020). Similarly, in North Macedonia, the likelihood of acquiring foundational skills in reading and/or numeracy in Roma settlements is lower for children belonging to poor families, having less educated parents, and having functional difficulties, after holding school grade completed constant. The results indicate a need to provide these children with quality education at school and learning support at home to close these learning gaps.

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Appendices

Appendix 1: Estimation of the likelihood of being out of school

Using a sample of children aged 5–17 residing in Roma settlements, a logistic regression model was estimated to examine how child and household characteristics are associated with the risk of being excluded from school education. Children of pre-primary school age were included to cover the educational pathways from pre-primary to upper secondary levels. The model is specified below.

$$\text{OutOfSchool}_{ij} = B_0 + B_1\text{Age}_{ij} + B_2\text{Age}_{ij}^2 + B_3\text{Female}_{ij} + B_4\text{ChildLabour}_{ij} + B_5\text{FunctionalDifficulty}_{ij} + B_6\text{ParentEd}_{ij} + B_7\text{LivingWithParents}_{ij} + B_8\text{HHWealth}_j + B_9\text{HHNumChildren}_j + B_{10}\text{HHLocation}_j + \epsilon_{ij}$$

The outcome (OutOfSchool) is being out of school. The likelihood of child i in household j being excluded from school education is estimated as a function of the demographic characteristics (age, gender, engagement in child labour, presence of functional difficulties, parents' highest education level completed and whether living with both parents) and household characteristics (household wealth, number of school aged children in household and residential location).

Table A1 presents the results of logistic regression analysis in both odds ratio and average marginal effects. Average marginal effects enable the interpretation of results in the probability scale. However, a relationship between predictors and a probability of a given outcome event happening (e.g., being out of school) cannot be represented by a single number, because marginal effects of a given predictor vary by values of the variable and all the other variables and thus differ from individual to individual. Average marginal effects are an average change in probability across observations.

Table A1: Estimation of the likelihood of being out of school in Roma settlements, aged 5–17

Variable	Being out of school							
	Kosovo		Montenegro		North Macedonia		Serbia	
	OR	AME	OR	AME	OR	AME	OR	AME
Age	0.13*** (0.03)	0.02*** (0.00)	0.15*** (0.04)	-0.00 (0.01)	0.18*** (0.03)	-0.02*** (0.00)	0.12*** (0.02)	0.00 (0.00)
Age squared	1.10*** (0.01)		1.10*** (0.01)		1.08*** (0.01)		1.11*** (0.01)	
Female	1.49** (0.30)	0.05** (0.03)	0.84 (0.20)	-0.03 (0.04)	0.85 (0.16)	-0.02 (0.03)	1.26 (0.22)	0.03 (0.02)
Child labour	2.09** (0.63)	0.11** (0.05)	0.94 (0.40)	-0.01 (0.06)	5.41*** (2.34)	0.29*** (0.08)	3.96*** (1.17)	0.21*** (0.05)
Functional difficulty	2.02*** (0.52)	0.10*** (0.04)	0.88 (0.25)	-0.02 (0.04)	1.49* (0.33)	0.06* (0.03)	1.52 (0.41)	0.06 (0.04)
Parents' highest education level completed								
Primary	0.77 (0.29)	-0.04 (0.06)	1.13 (0.33)	0.02 (0.04)	0.73 (0.23)	-0.05 (0.05)	1.14 (0.40)	0.02 (0.05)
Lower secondary	0.52* (0.18)	-0.10* (0.06)						
Upper secondary or tertiary	0.22*** (0.10)	-0.20*** (0.06)						
Secondary or tertiary			0.28* (0.18)	-0.16** (0.07)	0.43** (0.17)	-0.12** (0.06)	0.60 (0.25)	-0.06 (0.05)
Living with both parents	0.42*** (0.12)	-0.13*** (0.05)	0.58* (0.19)	-0.08 (0.05)	0.62* (0.15)	-0.07* (0.04)	0.90 (0.20)	-0.01 (0.03)
Household wealth index	0.56*** (0.07)	-0.08*** (0.02)	0.44*** (0.06)	-0.12*** (0.02)	0.55*** (0.06)	-0.09*** (0.01)	0.64*** (0.06)	-0.06*** (0.01)
No. of children in household	1.05 (0.05)	0.01 (0.01)	1.07 (0.07)	0.01 (0.01)	1.17*** (0.06)	0.02*** (0.01)	1.03 (0.06)	0.00 (0.01)
Urban	1.15 (0.23)	0.02 (0.03)	0.79 (0.22)	-0.03 (0.04)	0.69 (0.25)	-0.06 (0.06)	1.82*** (0.38)	0.08*** (0.03)
Observations	758		466		753		963	
Pseudo R ²	0.27		0.27		0.25		0.26	

Note: The table shows odds ratio (OR), average marginal effects (AME), and their standard errors in parentheses. AME of age include the effects of age squared. The reference category of parents' highest education level is pre-primary or less. Robust standard errors are used. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Appendix 2: Results of education pathway analysis

Table A2: Percentage of children of upper secondary school age, by education status

Moments in education pathway		Kosovo		Montenegro		North Macedonia		Serbia	
		National	Roma Settlements	National	Roma Settlements	National	Roma Settlements	National	Roma Settlements
Enter primary	Entered primary	99.4	94.2	97.6	80.7	99.6	92.7	100.0	95.9
	Never entered primary	0.6	5.8	2.4	19.3	0.4	7.3	0.0	4.1
Complete primary	Completed primary	98.6	87.6	96.0	68.5	97.8	84.9	99.7	91.2
	Still attending primary	0.0	0.0	1.1	1.3	0.0	0.2	0.0	1.5
	Dropped out of primary	0.7	6.5	0.5	10.9	1.8	7.6	0.3	3.3
Enter lower secondary	Transitioned to lower secondary	98.2	82.9	95.6	62.4	97.7	81.2	99.7	83.9
	Did not transition to lower secondary	0.4	4.7	0.4	6.1	0.1	3.7	0.0	7.3
Complete lower secondary	Completed lower secondary	93.9	54.9	90.5	23.3	93.9	57.0	96.9	52.7
	Still attending lower secondary	2.5	8.9	4.4	16.4	0.7	7.7	2.2	14.5
	Dropped out of lower secondary	1.8	19.0	0.9	22.7	3.1	16.6	0.5	16.7
Enter upper secondary	Transitioned to upper secondary	89.9	37.6	89.7	9.9	92.2	44.6	94.7	29.6
	Did not transition to upper secondary	4.0	17.4	0.8	13.4	1.7	12.4	2.3	23.1

Note: Children aged 15–18 in Kosovo, Montenegro and North Macedonia and aged 14–17 in Serbia.

Appendix 3: Estimation of the likelihood of acquiring foundational skills

Using a sample of children aged 7–14 residing in Roma settlements, a logistic regression model was estimated to examine how different demographic and household factors are associated with the development of foundational skills. The model is specified as shown below.

$$\text{FoundationalSkills}_{ij} = B_0 + B_1\text{Age}_{ij} + B_2\text{Female}_{ij} + B_3\text{GradeCompleted}_{ij} + B_4\text{ChildLabour}_{ij} + B_5\text{FunctionalDifficulty}_{ij} + B_6\text{ParentEd}_{ij} + B_7\text{LivingWithParents}_{ij} + B_8\text{HHWealth}_j + B_9\text{HHNumChildren}_j + B_{10}\text{HHLanguage}_j + B_{11}\text{HHLocation}_j + \epsilon_{ij}$$

The outcome (FoundationalSkills) is acquisition of foundational skills in either reading or numeracy. The likelihood of child i in household j acquiring the foundational skills is estimated as a function of child characteristics (age, gender, highest school grade completed, engagement in child labour, presence of functional difficulties, parents' highest education level completed and whether living with both parents) and household characteristics (household wealth, number of school aged children in household, whether the home language is one of the official school languages of instruction²⁰ and residential location). Table A3 presents the results of logistic regression analysis in both odds ratio and average marginal effects.



²⁰ The languages of instruction at school in Kosovo are Albanian, Serbian, Turkish, Bosnian and Croatian. Those in North Macedonia are Macedonian, Albanian, Turkish, Serbian and Bosnian.

Table A3: Estimation of likelihood of acquiring foundational skills in Roma settlements, aged 7–14

Variable	Reading skills				Numeracy skills			
	Kosovo		North Macedonia		Kosovo		North Macedonia	
	OR	AME	OR	AME	OR	AME	OR	AME
Age	0.74*	-0.04*	0.87	-0.02	0.82	-0.02	1.01	0.00
	(0.12)	(0.02)	(0.10)	(0.02)	(0.14)	(0.02)	(0.12)	(0.02)
Female	1.18	0.02	1.18	0.03	0.45**	-0.09***	0.61*	-0.06*
	(0.32)	(0.04)	(0.28)	(0.04)	(0.14)	(0.04)	(0.18)	(0.04)
Highest school grade completed	1.61***	0.07***	1.66***	0.09***	1.48**	0.05**	1.47***	0.05***
	(0.26)	(0.02)	(0.20)	(0.02)	(0.25)	(0.02)	(0.17)	(0.01)
Child labour	1.34	0.05	0.68	-0.06	0.72	-0.04	0.87	-0.02
	(0.59)	(0.07)	(0.52)	(0.12)	(0.42)	(0.06)	(0.68)	(0.10)
Functional difficulty	0.80	-0.03	0.45**	-0.13***	0.58	-0.06	1.37	0.04
	(0.39)	(0.06)	(0.15)	(0.05)	(0.34)	(0.05)	(0.51)	(0.05)
Parents' highest education level completed								
Primary	0.70	-0.05	2.60	0.15*	0.39	-0.10	1.04	0.00
	(0.50)	(0.11)	(1.74)	(0.09)	(0.30)	(0.09)	(0.63)	(0.08)
Lower secondary	0.92	-0.01			0.92	-0.01		
	(0.60)	(0.10)			(0.60)	(0.09)		
Upper secondary or tertiary	1.23	0.03			0.79	-0.03		
	(0.88)	(0.11)			(0.57)	(0.10)		
Secondary or tertiary			4.06**	0.23**			0.97	-0.00
			(2.88)	(0.10)			(0.67)	(0.09)
Living with both parents	1.15	0.02	0.79	-0.04	0.86	-0.02	0.86	-0.02
	(0.52)	(0.06)	(0.25)	(0.05)	(0.41)	(0.06)	(0.32)	(0.05)
Household wealth index	1.23	0.03	1.44**	0.06**	1.38*	0.04*	1.72***	0.07***
	(0.23)	(0.03)	(0.21)	(0.02)	(0.24)	(0.02)	(0.35)	(0.03)
No. of children in household	1.02	0.00	0.96	-0.01	1.03	0.00	0.99	-0.00
	(0.08)	(0.01)	(0.06)	(0.01)	(0.08)	(0.01)	(0.08)	(0.01)
Use official school language at home	2.20	0.10	1.14	0.02	1.38	0.04	1.35	0.04
	(1.73)	(0.08)	(0.28)	(0.04)	(1.12)	(0.08)	(0.39)	(0.04)
Urban	1.10	0.01	1.86	0.10	1.24	0.03	0.98	-0.00
	(0.31)	(0.04)	(1.17)	(0.09)	(0.39)	(0.04)	(0.59)	(0.08)
Observations	393		419		393		419	
Pseudo R ²	0.09		0.22		0.12		0.17	

Note: The table shows odds ratio (OR), average marginal effects (AME), and their standard errors in parentheses. The reference category of parents' highest education level is pre-primary or less. Robust standard errors are used. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Appendix 4. Estimation of interaction effects on foundational skills development

Table A4: Estimation of interaction effects on foundational skills development in Roma settlements, aged 7–14

Variable	Reading skills (OR)		Numeracy skills (OR)	
	Kosovo	North Macedonia	Kosovo	North Macedonia
1) Child labour				
Highest school grade completed	1.54** (0.26)	1.65*** (0.20)	1.49** (0.25)	1.47*** (0.17)
Highest school grade completed x Child labour	2.00* (0.75)	1.04 (0.43)	0.99 (0.31)	1.01 (0.25)
2) Functional difficulties				
Highest school grade completed	1.62*** (0.27)	1.63*** (0.20)	1.48** (0.26)	1.50*** (0.18)
Highest school grade completed x Functional difficulty	0.95 (0.13)	1.08 (0.16)	1.02 (0.21)	0.91 (0.12)
3) Use of a school language at home				
Highest school grade completed	1.67* (0.49)	1.69*** (0.22)	1.26 (0.27)	1.61*** (0.22)
Highest school grade completed x Use of a school language at home	0.96 (0.24)	0.97 (0.11)	1.19 (0.19)	0.86 (0.10)

Note: The table shows odds ratios (OR) and standard errors in parentheses for the highest school grade completed (main effects) and a corresponding interaction term only. All models include both main effects, the interaction term, and the demographic and household characteristics used in the basic model. Robust standard errors are used for estimation. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

