GeoStudies

GeoStudies 2(@): 85–106 (2025)
DOI: 10.3897/geostudies.2.e180731

Research Article

Fertility among Roma in Urban Settings in Bulgaria: Contemporary Trends, Determinants and Social Consequences

Nadezhda Ilieva[1], Kamelia Petkova[2],

1 *National Institute of Geophysics, Geodesy and Geography – Bulgarian Academy of Sciences, Sofia, Bulgaria.*
2 *Institute of Philosophy and Sociology – Bulgarian Academy of Sciences, Sofia, Bulgaria.*
Corresponding author: Kamelia Petkova (kamelia.petkova@gmail.com)

Abstract

This study examines the transformations in fertility among Roma living in urban settings in Bulgaria by combining demographic data, a large-scale quantitative survey, and in-depth interviews. The findings reveal that despite the traditionally high fertility rates and favourable age structure characteristic of the Roma population during the 1990s and the early 21st century, the last two decades have been marked by a distinct decline in both overall fertility and adolescent childbearing. Changes in reproductive behaviour are shown to result from a complex interplay of socio-economic conditions, migration processes, educational trajectories, shifting family roles, and religious influences. The data demonstrate a strong association between the number of children, educational attainment, employment status and income levels, with higher levels of education and economic stability correlating with planned parenthood and smaller family size. At the same time, the large-scale migration of young Roma abroad exerts a dual effect: on the one hand, it generates a demographic vacuum at the local level, and on the other, it transfers norms of postponed parenthood and limited fertility. The interviews highlight increasing female emancipation and the growing role of education as an internal regulator of reproductive decision-making. The article argues that fertility should not be conceptualised as an isolated demographic characteristic, but rather as a reflection of social inequalities and the dynamic processes of adaptation within Roma communities.

Key words: Fertility, Roma communities, reproductive behaviour, migration, education, Bulgaria.

OPEN ACCESS

Subject editor: Desislava Varadzhakova
Received: 28 November 2025
Accepted: 10 December 2025
Published: 22 December 2025

Citation: Ilieva N, Petkova K (2025) Fertility among Roma in Urban Settings in Bulgaria: Contemporary Trends, Determinants and Social Consequences. GeoStudies 2: 85–106, https://doi.org/10.3897/geostudies.2.e180731

Copyright: © Nadezhda Ilieva & Kamelia Petkova
This is an open access article distributed under terms of the Creative Commons Attribution License (Attribution 4.0 International – CC BY 4.0).

Introduction

The current demographic situation of the population is the outcome of the long-term influence of multiple factors linked to the historical, economic and cultural specificities of the different ethnic communities in the country. The study of fertility among Roma communities in Bulgaria constitutes an important dimension of the analysis of social transformations and integration processes. Fertility is not merely a demographic indicator, but a multilayered social phenomenon that reflects the interaction between cultural patterns, economic opportunities, educational orientations and institutional conditions (Caldwell 2004; Lesthaeghe 2010;

McDonald 2000). This research examines the trends and determinants shaping changes in fertility among the Roma population since the beginning of the 21st century, as well as the social consequences of these processes. The focus is placed on the qualitative dimensions of demographic change on how respondents interpret shifts in their own behaviour and on the social meanings they attach to parenthood, family roles, value orientations and motivational choices.

Findings from numerous international studies demonstrate that postponement of childbirth and the reduction in family size result not only from economic factors, but also from a broader redefinition of family life and parenthood. Increasingly, parents do not follow the traditional model in which having many children represents a central value; instead, they plan their families in accordance with their opportunities for education, personal development and a better start in life for their children (Beck and Beck-Gernsheim 2002; Bernardi and Klärner 2014; Goldscheider et al. 2015). In this sense, fertility can be viewed as part of a wider transformation in the ways members of the Roma community understand life and family. Intergenerational relationships, the roles of men and women within the household, the importance of education and the prospects for women's professional development are being rearranged in new ways. As a result, a different understanding of what it means to be a parent today is taking shape.

Theoretical and Methodological Framework

This study is grounded in the concept of the demographic transition and the idea of social modernisation, according to which the decline in fertility is driven by rising educational attainment, urbanization, religious and cultural transformation, shifting values and changing family strategies (Caldwell 2004; Lesthaeghe 2010; McDonald 2000). The approach combines a sociological perspective focusing on value change, parenthood and social mobility (Beck and Beck-Gernsheim 2002; Goldscheider, et al. 2015) with a geographical perspective centred on spatial inequality, local specificities and migration flows (Castles et al. 2014). In this way, the study conceptualises fertility as a social indicator of integration and transformation, which makes it possible to trace deeper processes of change within the Roma community, related to lifestyle, attitudes toward education and children, and expectations regarding the future. Comparative research from Central and Eastern Europe shows that similar patterns of fertility decline, rising educational aspirations and shifting family norms are observed among Roma communities in Hungary, Slovakia, the Czech Republic and Romania (Kováts 2019; Surdu & Surdu 2006; Vašečka 2012; Kóczé & Popa 2019). These studies highlight that demographic change within Roma groups is embedded in broader regional processes of social modernisation and value transformation. Recent policy and analytical reports from the European Commission and the EU Agency for Fundamental Rights further emphasise the role of social inclusion policies, migration trajectories and educational integration as key determinants shaping reproductive behaviour and demographic transitions among Roma populations across Europe (European Commission 2020; FRA 2022).A mixed-methods design was employed, combining the interpretation of qualitative and quantitative data. This approach allows for capturing both personal narratives and motivations, as well as broader behavioural patterns characteristic of different urban contexts.

Qualitative component

In 2024, forty in-depth interviews were conducted with respondents across eight cities: Asenovgrad, Kyustendil, Dobrich, Lom, Straldzha, Razlog, Ruse and Blagoevgrad. A purposive sampling strategy was used to ensure the inclusion of respondents occupying different social positions and offering diverse viewpoints. Participants were recruited through local community leaders, educational and health mediators, NGOs, municipal representatives and snowball sampling. The selection criteria included age, gender, educational background, economic activity, marital status, religious affiliation (including Evangelical communities) and migration experience. This ensured substantial variation across Roma subgroups and neighbourhood contexts.

The qualitative data were analysed through thematic coding. The core analytical categories included migration, early marriage and family strategies, education and parenthood, religion and moral norms, value transformations, economic factors, health practices and the role of institutions. The analytical approach follows the principles of interpretive sociology, prioritising an understanding of the meanings and motivations that participants attribute to their reproductive and family practices rather than statistical generalisation. The interview sample is qualitative and theoretically oriented rather than representative; therefore, potential socially desirable responses may occur, particularly in discussions related to education, religion and future aspirations. Nevertheless, the coherence of the narratives across multiple respondents and locations enhances the analytical validity of the identified trends.

Quantitative component

The qualitative evidence was complemented by a nationally representative sociological survey of 900 respondents residing in ghettoised urban Roma neighbourhoods. The survey was conducted in November–December 2024 using a stratified two-stage cluster sampling design. The target population consisted of Roma aged 16 and above living in 147 towns where ghettoised Roma structures have been identified. Due to the absence of detailed census information for 2021 at the settlement level, the sampling frame relied on publicly available data from the 2011 census, according to which 170,878 Roma lived in the selected towns (52.5% of all Roma nationally).

At the first stage, clusters of five individuals were selected using probability proportional to size (PPS), stratified by region and settlement size (very large, large, medium and small towns). Because Roma populations are highly concentrated in larger cities, an oversampling strategy was applied to smaller towns to ensure adequate geographical representation. This oversampling was adjusted in the final dataset through design weights restoring the structural proportions of the target population.

Within each cluster, five interviews were completed, starting from a central public building in the GUS (typically a school or local administrative structure). A random-walk procedure applying the right-hand rule and a fixed step of N = 3 was used to select households, and the respondent within each household was chosen using the “last birthday” method among individuals aged 18 and above. In towns with more than one GUS, clusters were evenly distributed across different neighbourhoods. The final sample consisted of 180 clusters and provides a maximum sampling error of 3.3%.

Limitations

As with any mixed-methods study conducted in marginalised contexts, several limitations must be acknowledged. Self-reported information on fertility and migration may involve recall errors or socially desirable responses, especially regarding early childbearing or household practices. The most mobile or highly marginalised households may remain partially underrepresented despite the stratified design. Qualitative findings cannot be generalised statistically; however, they provide essential interpretative depth that complements the quantitative analysis and allows for tracing internal processes of social and demographic transformation within Roma communities

Results

The analysis of the empirical data makes it possible to trace how the trends outlined in the theoretical section manifest themselves in the actual demographic behaviour of members of the Roma community. The results reveal a complex picture in which economic conditions, education, age structure, cultural attitudes and family roles influence decision-making regarding childbirth, namely both the choice to have a first child and the total number of children. Alongside persistent traditional patterns, new models have emerged, associated with planned fertility and aspirations toward greater social mobility. Thus, fertility appears not merely as a biological or demographic process, but as an outcome of the interaction between values, opportunities and constraints experienced by different groups within the Roma population.

The dynamics of demographic indicators have varied in intensity across ethnic groups over the years. Since 1989, demographic trends have been strongly shaped by socio-economic factors. Fertility declined across all ethnic communities as a result of the severe economic crisis and the sense of uncertainty generated by broad social transformations. Nevertheless, the decline was least pronounced among Roma. Educational attainment, material and cultural needs, and parental aspirations concerning upbringing and the perceived value of children contributed to maintaining high fertility and positive natural population growth within the Roma population.

Data from the 1992 and 2001 population censuses show that Roma were the only ethnic group in the country whose numbers increased during this period despite the considerable discrepancy between official statistics and scientific demographic research, the latter indicating an even greater rise. Census survey data from 1992 and 2001 also reveal a high level of community closure and low motivation for emigration; when emigration occurred, it was rarely accompanied by a permanent change of residence. This indicates that the main driver of population growth among Roma during the period was high natural increase.

Based on official census data, natural increase among the Roma population between 1992 and 2001 is estimated at 18.7‰. Assuming mortality at around 8‰, fertility can be approximated at about 26‰. These figures are supported by the study conducted by Tomova (2005), commissioned by the Council of Ministers, which tasked the National Statistical Institute with producing a report on fertility among the major ethnic communities based on the ethnic self-identification of mothers recorded in the 2001 census. Although this report was not published in the official statistical bulletins of

NSI, its findings presented in Table 1 confirm that fertility among Roma was the highest of all ethnic groups. In fact, it corresponds to the levels recorded among Turks and Muslim Bulgarians in the early 1970s (Ilieva 2013).

Table 1. Fertility, infant mortality, mortality and natural increase (‰) by ethnic groups as of 1 March 2001

Demographic indicators	Total	Bulgarians	Turks	Roma
Fertility (by ethnic affiliation of the mother) (‰)	8.5	6.9	13	26.7
Total fertility rate (2001–2003)	1.22	1.03	1.62	2.81
Infant mortality (children under 1 year) (‰)	13.4	9,9	17.8	25
Mortality (‰)	14.2	15	10.3	7.3
Natural increase (‰)	-5.7	-8.1	2.7	19.4

Source: National Statistical Institute, unpublished statistical report based on the 2001 Census; Tomova 2005.

After 2002, systematic efforts were launched to ensure full enrolment of Roma children in primary education (grades 1–4) and to keep them in school for as long as possible (Tomova 2009). These measures contributed to a decline in fertility and, in particular, in adolescent or early childbearing within the community. Early fertility (under the age of 18) decreased from 690‰ to 508‰ between 1992 and 2001, and the rate of extremely early childbirth (under the age of 15) was reduced by half from 70.1‰ to 35.6‰. Despite this substantial decline in fertility over the past 15 years, the previously established favourable age structure has maintained and even increased the proportion of Roma in younger age groups. In 2011, approximately 39.1% of Roma in Bulgaria were under the age of 20, compared to 22.4% among the Turkish population and 15.5% among Bulgarians. This more favourable age structure predetermines higher fertility among Roma in the medium and long term, even in the context of a trend toward smaller households. The large proportion of women and men in active reproductive age groups "sustains" the demographic reproduction of the community at levels higher than those of other ethnic groups. At the same time, this demographic "youth" does not automatically translate into more favourable health and social outcomes. Roma remain the ethnic group with the highest infant mortality rate 25.0 per 1.000 live births, or 2.6 times higher than that of Bulgarians. The main reasons include persistent and widespread poverty, inadequate access to health services, poor hygienic living conditions and the high incidence of early and frequent childbirth among mothers, which increases the risk of complications for both women and newborns.

In addition, Roma have the highest share of premature mortality and the lowest life expectancy in the country (Tomova et al. 2011). Taken together, these factors outline a paradoxical situation: although fertility remains relatively high, a substantial part of it is "lost" due to poor health conditions and insufficient maternal care and prevention. Thus, the structural demographic advantages of

the community such as youthfulness and the potential for natural population growth are neutralised or weakened by conditions that reproduce vulnerability and poverty across generations.

This links reproductive behaviour to broader processes of social inequality. The interaction between high fertility, high infant mortality and early childbirth creates a cycle in which families often have more children not as part of long-term family planning, but as an attempt to secure the family's future under conditions of uncertainty. In the absence of access to quality healthcare and education, such a pattern hampers upward social mobility and deepens social distance and disparities between ethnic groups. For this reason, the dynamics of fertility cannot be understood in isolation. They are the outcome of specific health-related, socio-economic and cultural conditions that shape not only the opportunities for parenthood but also its risks.

The lack of official statistics on the natural population movement disaggregated by ethnicity makes it difficult to determine precise values for demographic indicators. Roma are characterised by the highest proportion of large families, a pattern linked to cultural ideals that associate family status with attaining the desired number of children. A large family represents the highest value, and the greatest authority is attributed to those who originate from a big, numerous and influential kin group (Marushiakova and Popov 1993).

The "closed" structure of Roma groups is one of the factors that limits the penetration of modern lifestyles and contributes to the preservation of patriarchal traditions and their associated value systems. In summary, prior to the country's socio-economic transformation, fertility among Roma was estimated at around 28 per mille. The transition and its related hardships led to a sharp decline of 8–10 points in the early 21st century. Similar trends were also recorded in the in-depth interviews conducted in 2024. The data show that all respondents reported a substantial decrease in fertility in recent years, identifying the period following Bulgaria's accession to the EU and the intensification of emigration as a key turning point in this change.

According to the respondents, many young families postpone having children or plan to have fewer children because moving abroad requires income stabilisation, time for adaptation and securing housing. Some interviewees further noted that living and working conditions in host countries encourage a different outlook on family planning. Greater emphasis is placed on professional development and educational opportunities, which affects the timing of the first birth and the overall number of children.

Alongside emigration, respondents also associate the observed decline in fertility with changing attitudes toward parenthood. Increasingly, they articulate a desire for children to have "a better start and career development," which implies investments in education, health, housing and a stable family environment. These factors lead many parents to make more cautious decisions regarding the number of children. In this sense, the reduction in fertility is not explained solely by economic hardship, but also by changing expectations and standards concerning "what it means to be a good parent."

All these observations point to a gradual transformation of traditional family models. Although fertility remains relatively high compared to other ethnic groups in the country, the processes of planned parenthood, postponement of first childbirth and the trend toward smaller families are becoming increasingly pronounced.

Respondents perceive this shift not simply as external "pressure" from modern life, but as part of a broader change in values, expectations and visions for the future.

Based on the specific characteristics of the demographic transition among the Roma population and the persisting age structure, it can be assumed that if mortality is around 8–9‰ and fertility decreases by another three to four points, reaching 16–17‰, the natural increase would amount to approximately 6–8‰. The main drivers of this process are large-scale labour and seasonal migration of young people to Western Europe, shifting value orientations toward education and family life, as well as the influence of religious movements and health interventions. Illustrative excerpts from the interviews include:

> *"Fertility has been decreasing for about 10 years now" (Ruse, female, 43, local government representative);*
>
> *"There are no people of our age with four or five children anymore; most have one or two. Things have changed a lot for us Roma as well" (Asenovgrad, Roma, 34);*
>
> *"Young people don't want to have children anymore — it's not like before when people had five or six" (Lom, Roma, 72);*
>
> *"In the past people had children without thinking too much. Now they first look at whether they have a job and whether they can afford a child, and only then decide" (Kyustendil, Roma woman, 29);*
>
> *"Young people want to settle first to work, to have a home, and only then have children. They're not rushing anymore" (Dobrich, Roma, 38).*

Indirect insights into the dynamics of fertility can also be drawn from the results of the nationally representative survey conducted among Roma living in ghettoised urban structures in Bulgaria. The findings show that families with three or fewer children are becoming increasingly typical. Although gradual, this trend began to take shape during the first decade of the 21st century, with the most substantial shift observed in the transition from families with more than four children to families with three or fewer. Previous research confirms this trend, indicating that Roma households have an average of 2.9 children, which reflects an accelerated transition and a shift from the traditional family model. Among younger respondents, particularly those aged up to 25, the ideal of a three-child family remains widespread (with an average of 2.6 children), suggesting that the intention to have a third child remains persistent (Ilieva and Bardarov 2022).

The analysis of the quantitative data reveals a clearly expressed and statistically significant association between respondents' age and the number of children in the household. This association is confirmed by the high value of Cramér's V (V = 0.791), indicating a strong relationship between the two variables. The share of individuals with three or more children is highest among respondents aged 46–65 (30.5%) and 36–45 (23.9%). A similar tendency is observed among those aged 65+, where 17.7% also report having three or more children. These results outline a persistent pattern of high fertility among older generations, characteristic of traditional reproductive norms in the Roma community. In younger age groups, however, this pattern shifts markedly. Among respondents aged 30–35, the highest relative share is recorded among those with two children (43.5%), suggesting that the notion of a "large family" remains present but no longer dominates to the extent observed in older generations. The most pronounced change is observed among Roma aged 15–29: the largest share report having one child (59.6%), while 91.7% state that they

do not yet have children at the time of the survey. This reflects a substantial shift in reproductive behaviour, whereby early childbearing, long considered a dominant model in the Roma community, is no longer as relevant among the youngest generations.

These findings indicate a transformation in fertility patterns that affects not only the number of children but also the timing of parenthood. Older generations were socialised in a cultural context in which early family formation and a larger number of children were key elements of the life course and social status. Among younger Roma, however, a process of demographic and cultural adaptation is emerging, manifested through:

- postponement of the first child;
- reduction in the number of children;
- stronger subjective orientation toward planned parenthood.

Educational attainment has a direct impact on reproductive behaviour, expectations toward parenthood and the perceived model of family life. Cross-analysis between education and number of children reveals a statistically significant association between the two variables, confirmed by the value of Cramér's V (V = 0.402). Although this association is not as strong as the relationship between age and number of children, it is sufficiently robust to outline clear differences between groups with different educational statuses. The data show that the highest share of respondents with three or more children is observed among those with no schooling (68.1%), those with primary education (up to 4th grade) – 67.6%, and those with lower secondary education – 51.5%. These figures indicate that lower educational attainment is associated with higher fertility and larger families.

The opposite trend is observed among respondents with secondary and higher education. In these groups, the largest share consists of individuals with two children 51.5% among those with secondary education and 66.7% among those with higher education. Here, the model is no longer one of high fertility; families with one or two children are the most widespread. This reflects a more moderate and planned pattern of parenthood. The results therefore suggest that changes in fertility among Roma cannot be explained solely by generational differences; they are also linked to educational participation. Where educational attainment is higher, there is evidence of:

- a lower number of children per family;
- a greater likelihood of forming a two-child family model;
- a more pronounced orientation toward planned and postponed parenthood.

In this sense, education functions as an important factor reshaping perceptions of family and parenthood. It does not entirely replace traditional models, but modifies them, producing internal differentiation within the Roma community: a high-fertility model characteristic of groups with low education and a more moderate one prevailing among better-educated Roma. These findings indicate that rising educational levels particularly among young Roma are likely contributing to the transformation in reproductive behaviour observed in the previous section. In other words, the changes in fertility patterns progress both "by generation" and "by education."

Alongside education, place of residence also influences the reproductive behaviour of Roma. The data show a statistically significant association between the size of the settlement and the number of children in the household. The

calculated value of Cramér's V (V = 0.833) indicates a strong and clearly expressed relationship between the two variables. A distinct inverse relationship is observed: the number of children increases as the size of the settlement decreases. The highest share of Roma with three or more children is found in towns with up to 10.000 inhabitants (52.6%). This trend is likely related to more strongly embedded traditional family models, socio-cultural expectations and the role of the extended family in smaller settlements, as well as more limited access to family planning services.

At the opposite end of the spectrum, in the largest cities (over 200.000 inhabitants) the share of individuals with three or more children decreases to 36.4%. Other models of family planning emerge in these urban contexts: individuals with one child are most strongly represented precisely in the largest cities (52.1%), as well as those who report having no children (43.2%). The share of two-child families is also highest in large cities (40.9%), indicating the dominance of a "small family model" in urban environments likely shaped by economic factors, higher employment rates, different life priorities and higher levels of education.

A significant association is also observed between the number of children and respondents' employment status. The share of individuals with three or more children is highest among the unemployed (79.8%), whereas among those who are employed this share decreases sharply to 19.1% (Figure 1). The value of Cramér's V (V = 0.413) indicates a moderate strength of association. This tendency can be interpreted through the lens of economic vulnerability and social strategies of survival: larger families are often linked to lower levels of labour market participation, dependence on social transfers, early marriages and traditional cultural expectations regarding motherhood and fatherhood. Conversely, among employed individuals the lower number of children may be attributed to limited resources for raising a large family, labour market pressures, aspirations for further qualification and different reproductive attitudes.

The data also demonstrate a strong association between the number of children in the household and income levels. The calculated value of Cramér's V (V = 0.589) indicates a high strength of association between the two variables.

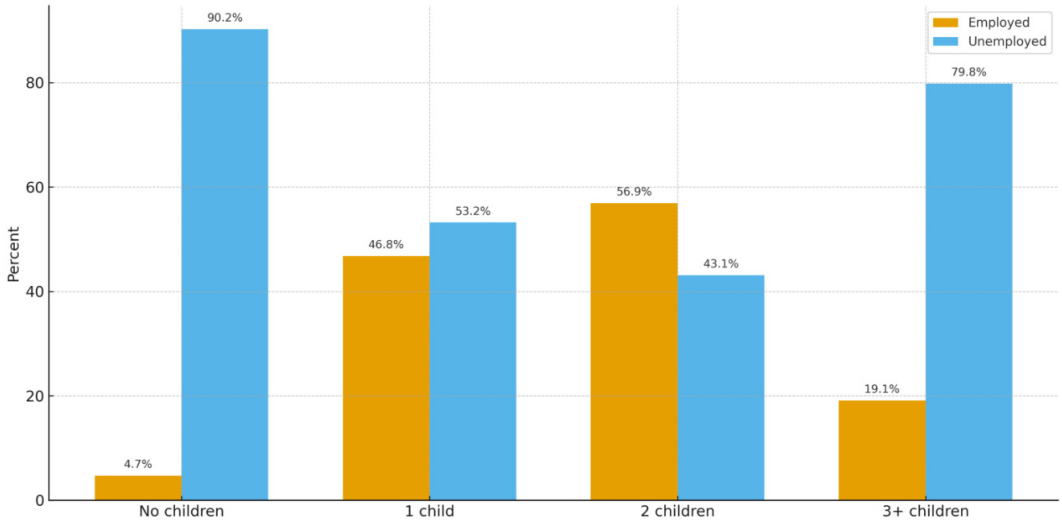

Figure 1. Number of children by employment status

There is a clear concentration of high fertility among households with the lowest incomes. The share of respondents with three or more children is highest among families with incomes below 500 BGN (40.1%) and those with no income (32.9%), while this share decreases gradually across higher income groups to 15.9% for households with incomes between 500 and 1.000 BGN, 10% between 1.000 and 1.500 BGN, and only 1.2% for households with incomes above 1.500 BGN. This outlines a strong link between economic vulnerability and the likelihood of raising a large number of children. A middle position is occupied by families with two children, among whom the largest share is recorded in households earning between 1,000 and 1.500 BGN (31.6%), followed by those with incomes between 500 and 1.000 BGN (24.7%). This pattern suggests a condition of relative economic stability, but within limited financial means sufficient to raise children, yet insufficient to further expand the family. Among families with one child, the highest share falls within the income group 500–1.000 BGN (44.7%), followed by households earning 1.000–1.500 BGN (23.9%) (Table 2). Here the model indicates that the decision to have a second child is likely constrained by financial considerations: available income ensures basic family security but restricts the possibility of family enlargement.

The share of individuals without children is exceptionally high among households with no income (85.4%), reflecting a clear relationship between economic insecurity and demographic behaviour. In this context, remaining childless appears linked to extreme economic vulnerability, lack of stability and limited personal and family prospects.

Therefore, the data indicate that in the Roma families included in the sample, economic status plays a key role in shaping reproductive patterns. The lower the income, the greater the likelihood that a household will have three or more children or none at all whereas middle-income groups are most strongly associated with the "one-child" and "two-child" family models. This relationship confirms that the economic situation not only follows reproductive behaviour but actively shapes it, embedding it within a cycle of vulnerability and constrained opportunities.

Table 2. Distribution of the number of children per household by income group (in %)

Income group (monthly)	No children	1 child	2 children	3+ children
No income	85.4	0	12.4	32.9
Under 500 BGN	0.8	52.5	27.3	40.1
500 – 1000 BGN	6.2	17.4	24.7	15.9
1000 – 1500 BGN	6.2	23.9	31.6	10

One of the most visible effects of the decline in fertility is the change in the age structure of the population in Roma neighbourhoods. The large-scale emigration of young people of working and reproductive age leads to a decrease in the number of children and young families, and to a relative "ageing" of those who remain. This has consequences both for the internal social dynamics such as reduced participation of young people in the local economy and community activities and for the functioning of local institutions. Increasingly, kindergartens and schools are confronted with shrinking numbers of children, while social services redirect their resources toward two main groups: older adults and

children whose parents are abroad. The demographic imbalance is particularly pronounced in small towns, where according to respondents between 30% and 50% of the Roma population resides temporarily or permanently abroad. This trend creates a specific "demographic vacuum," which hinders sustainable reproduction and the economic viability of the community at the local level.

The analysis shows that the decline in fertility among the Roma population is the outcome of a complex interplay of migratory, socio-economic, cultural and institutional factors. These factors do not operate in isolation; instead, they reinforce one another, resulting in the emergence of new behavioural strategies and a gradual shift from the traditional model of large families toward a more modernised model of planned and limited fertility.

Among these factors, large-scale emigration of the younger Roma generations exerts the strongest influence. This process began in the early 21st century and became widespread after 2007, when freedom of movement within the EU facilitated permanent settlement abroad. Almost all respondents noted that young families who migrate to Germany, France, Spain, Austria, the Netherlands or Poland tend to settle there permanently, establish families and rarely return. This results in a dual demographic effect: depopulation of Roma neighbourhoods in Bulgaria and a decline in the number of births at the local level. Increasingly, children are born outside the country, which means that demographic statistics in Bulgaria do not fully capture the real number of children born to Bulgarian Roma.

The absence of young families alters the age structure of the neighbourhoods: primarily older adults remain, along with children whose parents are abroad. At the same time, migration has another important cultural effect. Roma who live in countries with more developed social and educational infrastructure adopt family-planning models characteristic of the host majority population including later timing of first birth, fewer children, and a stronger focus on professional and career development. In this way, migration functions as a channel for the transfer of new social norms that gradually undermine the traditional model of high fertility within the community. This change is clearly reflected in the words of many interviewees:

> *"People change completely after living abroad when they return, they realise that if they have many children, they cannot raise and educate them properly" (Blagoevgrad, Roma woman, 56);*
>
> *"Migration has stopped Roma from having many children. Now they have one or two. Older people stay in Dobrich, while the young migrate abroad. Every day, every year, more and more people leave. For example, if 1.000 migrate this year, the next year it will be 1.200" (Dobrich, Roma man, 52);*
>
> *"Fertility has decreased in recent years. Young people now stay with one or two children but very rarely three. This has been noticeable for about ten years, since they began travelling abroad" (Asenovgrad, Roma man, 62);*
>
> *"In the past, families in Straldzha had five or six children. Now the young say it is better to have two, but to educate them. The mindset has changed. They want to secure a future for their children, not just give birth to them" (Straldzha, Roma woman, 41);*
>
> *"In Kyustendil more children used to be born. Now most young people work abroad and give birth there, while only the grandparents remain here. If they have a second child, it happens after many years, not immediately" (Kyustendil, Roma man, 47);*

"In Lom you rarely see families with four children anymore. Everyone goes to Germany and comes back different. They say that first you need a job, income and a home, and only then should you think about children" (Lom, Roma woman, 35);

"In Razlog young people have become more cautious. They do not marry as early; first they work and travel. And when they feel stable, then they have a child, just one or two, not more" (Razlog, Roma man, 31).

Many of the interviewees noted a withdrawal from the tradition of early marriage and an increase in the age at which the first child is born. In some cases, early marriages still occur, but they are described as exceptions rather than as the dominant pattern. This shift is explained by the growing value placed on education, economic considerations and the influence of religious and community leaders.

"Mornings of early marriage are now much rarer" (Ruse, Roma woman, 26, educational mediator);

"In the past the average age for marriage was around 14–15. Now it happens very rarely. Most people get married at 18–19. It is very rare for a girl to become pregnant earlier" (Dobrich, educational mediator, Roma man, 24);

"Young people do not want to have children now; it is no longer like before. Families used to have five or six children. That does not happen anymore. Girls and boys do not get married so early. It is very rare nowadays for the bride and groom to be under 20. We have young women aged 25–26 who still do not want to marry" (Lom, Roma woman, 43).

The analysis of the interviews points to a marked increase in the emancipation and social activity of Roma women. A growing number of them participate in the labour market, take part in educational initiatives, acquire professional qualifications and assume active roles in community and public life. This leads to a shift in traditionally established family roles and to a new understanding of parenthood. The number of children is no longer determined solely by value orientations, but also by the actual possibilities for raising them, ensuring their education and supporting their social realisation. Childbearing is no longer the only mechanism for social recognition, and women who combine motherhood with employment and education have become positive role models within the community. Many respondents emphasised precisely this transformation of women's roles:

"Women are no longer confined to the home. They study, work and travel. They want to set an example for their children, not just give birth to many children as it was before" (Kyustendil, Roma woman, 33).

The change in women's status also affects family planning. The first child is increasingly postponed, marriage is no longer the obligatory starting point for self-realisation, and decisions regarding a second or third child are discussed in the context of economic stability and the ability to provide full and adequate care.

"I want my child to be well cared for, to study and to have a future. For that to happen, I must first work and be stable myself. It's not like before to give birth to many children and then see what happens" (Asenovgrad, Roma woman, 28).

There are also voices highlighting how the new roles of women are reshaping the internal dynamics of family life:

"In the past the man decided everything. Now the woman also gives her opinion about how many children there should be. They think about career and about education, but of course it also depends a lot on the religion they

follow. In some families who follow Turkish traditions, things are different" (Lom, Roma man, 44).

A model is gradually emerging in which women are becoming active agents of social change. They participate in educational programmes, seek professional realisation and prioritise the success of their children as a key life goal. This transformation leads not only to new forms of family planning, but also to the transfer of new values to the next generation: from the ideal of "many children" to the ideal of "fewer children, but with more opportunities." As respondents from Straldzha and Kyustendil summarise:

There is a substantial increase in the perceived importance of education as a tool for a better future and for social mobility, and it is directly linked to the decision to have fewer children. The shift in educational orientations leads to a transformation of family strategies as more resources are directed towards one or two children, allowing greater investment in each of them so they can receive better education and greater opportunities for realisation. In this way, education indirectly influences fertility, becoming a mechanism that regulates childbearing. Parents who themselves did not have the opportunity to study perceive education as a compensatory pathway for the next generation.

"We didn't study and now life is difficult for us, and we want our children to be educated" (Dobrich, Roma woman, educational mediator, 51);

"Education has become a major value… every parent wants their child to receive an education" (Lom, Roma woman, 41);

"I am 19 and I don't want to have more than two children. Those boys who are educated will not want to have more than one, two or three children" (Straldzha, Roma man, educational mediator, 19);

"It is believed that with better education the chances of finding a better job are higher. Parents with low education find it difficult to support their children academically, but they say: we didn't study and now it is difficult. We want our children to be educated. There have been many university graduates in the town in recent years" (Dobrich, Roma woman, educational mediator, 42);

"Now parents insist on education. There are fewer who do not pay attention and only enrol their children just to receive benefits" (Kyustendil, Roma man, 43);

"More than 80–90% finish secondary school, and here we also have many university graduates" (Lom, Roma man, 56).

More and more parents encourage their children to complete secondary and even higher education, recognising that this is the key to better opportunities for realisation and social prestige:

"Education is now a major value… there isn't a parent who doesn't want their child to be educated" (Lom, Roma woman, 29).

This process, although gradual, increases the chances of upward social mobility and creates new generations of Roma with better qualifications, higher self-confidence and a stronger sense of belonging to the wider society. At the same time, however, not all emerging opportunities can be utilised equally. Discriminatory attitudes, segregated school environments and limited access to quality education continue to hinder the full realisation of this potential. For many families, the aspiration for a better life is confronted with invisible yet persistent barriers such as stigmatisation, low expectations from teachers and employers, and restricted professional prospects

even when young people succeed in overcoming structural difficulties and obtaining an education. According to the respondents, this results in a contradictory situation. On the one hand, there is a strong desire for integration and high expectations of education; on the other hand, there is a sense of injustice and disappointment when the efforts invested do not lead to equal opportunities. As one father from Kyustendil shared:

> *"We encourage our children, we tell them to graduate, to get a good job… But when they see that Roma are not hired, how can they not give up? They try, but they are not given a chance" (Kyustendil, Roma man, 45).*

This feeling is not isolated; similar views are expressed in other locations. A respondent from Lom added:

> *"Our children want to succeed, but people look at them with a 'label' — Roma child. At school they separate them, they don't pay attention to them. After that, who will have the motivation to keep fighting?" (Lom, Roma woman, 39).*

Another interviewee emphasised the link between discrimination and decisions related to fertility and future plans:

> *"When you see that life is harder for Roma, you think twice about having many children. You want to give them a future, but you know they have to be twice as good to be accepted" (Razlog, Roma man, 32).*

In this context, fertility becomes not only a demographic, but also a social and psychological choice and one that reflects the extent to which parents believe their children will have real chances for education, employment and dignified realisation in life. In other words, the motivation to have fewer children is not only a matter of "modernisation", but also of rational assessment of how far society allows Roma to realise their potential under equal conditions.

> *"I was faced with the dilemma between a good education and my daughter's mental health. In the mixed school she felt humiliated" (Kyustendil, Roma man, 39).*

This dilemma is important for understanding the quality of the educational trajectory, but it does not negate the general aspiration toward schooling. The decrease in the number of children in Roma families and the rise in educational ambitions have a direct effect on access to education and on the quality of learning. An integrated and supportive educational environment remains a key factor in transforming demographic change into real social mobility.

On the other hand, the findings from the in-depth interviews show that in several ghettoised neighbourhoods the influence of Evangelical churches plays a significant role in reshaping family models. Religion functions as a regulator of social and family behaviour. Religious teachings emphasise responsible parenthood, discipline and childrearing, encouraging families to have fewer children to whom they can provide higher-quality care and better developmental conditions. Protestant religious communities (mainly Pentecostal and related groups) create new behavioural norms that replace traditional patriarchal values and place emphasis on self-discipline, moral upbringing and responsible parenthood. These changes establish a new type of moral order that facilitates the integration of Roma into the wider social context.

> *"The church teaches people how to live, how to raise their children… if you have many children, you cannot bring them up properly" (Blagoevgrad, Roma man, pastor, 39).*

In addition, religious leaders contribute to the legalisation of marriages and the rejection of certain traditional practices such as early marriages and informal cohabitation, which also influences the decline in fertility.

> *"When it was explained to them, they started to register civil marriages… religion changed the way of life" (Blagoevgrad, Roma man, pastor, 39).*

The religious community functions as a social mediator between tradition and modernity, supporting internal changes in values and behaviour. Religion acts as an internal mechanism of social change that replaces traditional models of high fertility with new norms of planned parenthood.

> *"This religion (Protestantism) inspires a person, gives courage, motivates them, gives them the opportunity to form character and behaviour" (Razlog, Roma man, 58).*

Religious influences operate in synergy with economic and migratory factors.

> *"The church has changed the way of life in the neighbourhoods and the way people think. People no longer want to raise their children the way we were raised. Can you say that fertility decreased after people started travelling abroad? Maybe because of emigration, yes, but the influence of the church is also very strong and I will tell you why. The church teaches people how to live, how to raise their children and to educate them. They realise that if they have many children, they cannot raise them and teach them properly. You cannot educate them. The church helps them understand how many children they are able to raise. I now see that families no longer have more than three or four children" (Blagoevgrad, Roma man, pastor, 39).*

The economic realities of the transition and the contemporary labour market lead to a more pragmatic approach to family planning. Young families are increasingly aware of the link between the number of children, financial resources and quality of life.

> *"Who is going to have ten children now… I am 19 and I don't want more than two" (Straldzha, Roma man, educational mediator, 19).*

An increasing number of families perceive children as an economic responsibility and plan the number of births according to their real capacity to provide care and education. Labour migration provides income but also introduces a new type of rationality linked to the need for stability and control over the family budget. This change is visible even among older generations, who now view children as an "investment" rather than simply a continuation of the family line. As the number of children decreases, a qualitative shift in parenthood is observed: families increasingly perceive children as an investment in the future rather than as a reflection of a traditional reproductive culture.

> *"People want to leave something to their children, to educate them and to provide them with a better future" (Blagoevgrad, Roma man, pastor, 39).*

This attitude directs greater attention to education, health and childrearing, and in many cases parents strive to ensure better material living conditions. This, in turn, generates a new kind of parental responsibility to have fewer children, but also ones who are better prepared for life. As some respondents explain:

> *"Our parents were very different from us today. They did not think about their children the way we do now. They were not thinking about leaving a house for their children one day. Today's modern parents, if you talk to them, everyone thinks about how to secure a better future for the child and how to educate them" (Blagoevgrad, Roma man, pastor, 39);*

> *"One day when the child grows up and becomes educated, you know that they can support you, that they can help you, that they can be your backing. The best investment anyone can make in Bulgaria is to invest in their child" (Blagoevgrad, Roma man, pastor, 39);*
>
> *"The best investment a person can make is to invest in their child" (Blagoevgrad, Roma man, pastor, 39).*

In recent years, in some localities institutional programmes for early childhood development and health education have been successfully implemented in partnership with health mediators. These interventions have had a visible impact on awareness of reproductive health and the risks associated with early pregnancy, encouraging the use of health and social services that were previously little known or difficult to access for Roma families. Local health teams and mediators play a significant role, functioning as trusted intermediaries between institutions and families because they are members of the community themselves. Their presence facilitates communication, overcomes cultural and linguistic barriers and supports participation in preventive examinations, health education sessions, family planning activities, and consultations on maternal and child health.

Gradually, these activities have led to shifts in attitudes towards family planning, hygiene, responsible parenthood and the timing of the first birth. Increasingly, young women recognise that early pregnancy entails health and social risks and that education and professional development may precede the formation of a family. Some respondents attribute this transformation precisely to the role of mediators and to the regular information sessions and consultations. As a result, in some localities a decline in early marriages and in the number of births among the youngest age groups has been observed, indicating that institutional support can accelerate the transition toward more planned and conscious parenthood.

> *"One of the projects is on early childhood development. There is an obstetrician-gynecologist who comes once every two weeks. Roma have learned about it and go there. Before that they had no contact with such a medical specialist. We also have three health mediators. They constantly visit the neighbourhood. There is perhaps an effect, because fertility has decreased — we explain the risks of early pregnancy and if in the past families had seven or eight children, now they have two or three" (Straldzha, local government representative, man, 48).*

When analysing fertility, it is important to account for stratification within the Roma population. The interviews reveal differences between "long-settled" and "newly arrived" groups; between more educated, integrated and socially active groups on the one hand, and more traditional, poor and isolated groups on the other; between religious and non-religious communities; and between larger cities and smaller settlements. In some neighbourhood such as those in Lom and Razlog higher levels of education and material security are observed, whereas in others (e.g. Straldzha) traditional models remain more strongly pronounced. These differences confirm that the decline in fertility is not a uniform process but unfolds at different speeds and with varying depth depending on the local context.

Discussion

The results outline a picture of a specific demographic transition taking place within Roma communities in Bulgaria. On the one hand, they confirm earlier empirical observations of higher fertility rates and a more favourable age structure of the Roma population compared to other ethnic groups in the country (Tomova 2005; Ilieva 2013). On the other hand, it becomes clear that Roma are not "outside" the broader demographic trends but follow them albeit with delay and along specific trajectories strongly influenced by socioeconomic inequalities, spatial segregation and internal cultural transformations. In this sense, the results challenge the persistent stereotype of "consistently high" Roma fertility and show that reproductive behaviour within Roma communities is changing towards more planned and limited parenthood. Importantly, this process unfolds under conditions of poverty, restricted access to services and structural discrimination.

At the macro level, official statistics and previous studies indicate that Roma were the only major ethnic group in Bulgaria that maintained a positive natural increase during the 1990s and the first decade of the 21st century (Tomova 2005; Tomova et al. 2011), with high fertility offsetting unfavourable health indicators and shorter life expectancy. In the last two decades, however, there has been a noticeable decline in the total fertility rate as well as in teenage and exceptionally early childbearing, which brings some Roma groups closer to the mainstream patterns of demographic transition. Yet the demographic "advantages" of youth and high natural increase are neutralised by high infant and premature mortality and by adverse socioeconomic conditions (Tomova et al. 2011). Thus, the Roma demographic transition does not represent a smooth outcome of "modernisation", but rather an adaptation to changing circumstances under persistent structural inequalities.

The strong statistical relationship between age and number of children highlights pronounced generational differentiation in reproductive behaviour. Older generations, socialised in the context of traditional patriarchal norms and the high symbolic value of large families, reflect the classic image of Roma family life described in earlier research (Marushiakova and Popov 1993). Among the youngest age groups, however, a significant shift is evident: more individuals postpone having their first child, and the ideal of three or more children is gradually giving way to two–child or even one–child models. Marriage and parenthood are no longer the earliest or sole forms of social recognition. Employment, migration, stable income and secure housing precede childbearing decisions. In this regard, part of the Roma population increasingly approaches the wider European trend of delayed parenthood, though this transformation does not evolve uniformly across all subgroups within the community.

The findings also confirm the central role of education as a key regulator of reproductive behaviour. Where educational attainment is low, the traditional pattern of high fertility persists; where it is higher, more moderate and planned family models are dominant. Education is perceived simultaneously as an instrument of social mobility and as a condition for "good parenting", encouraging investment in fewer children so that parents can provide a better future for them. In this way, education indirectly influences fertility, becoming an internal mechanism of self-regulation. At the same time, experiences of discrimination, school segregation and limited professional opportunities undermine the belief

that education leads to equal chances. Decisions about the number of children are therefore taken within a context of both high aspirations and uncertainty regarding whether society will permit equal opportunities for the next generation.

The relationship between fertility and economic status is equally revealing. The highest share of large families is observed among those with the lowest income, but among them the share of individuals without children is also high. This suggests that extreme poverty produces different and sometimes opposing reproductive strategies: large families may function as a strategy of security based on kinship networks and traditional roles, whereas others postpone or refrain from parenthood due to extreme economic uncertainty. Middle-income groups are the most strongly associated with one- or two-child family models, reflecting the search for balance between economic stability and parenthood. This indicates that poverty does not automatically result in high fertility. Rather, reproductive strategies vary by available resources, expectations and opportunities for mobility.

Migration emerges as one of the most powerful drivers of changing fertility patterns. The large-scale outflow of young people of working and reproductive age creates a demographic vacuum in Roma neighbourhoods. The number of children and young families declines, whereas the relative share of elderly people and children whose parents live abroad increases. This affects the internal social dynamics of the settlements, the local economy and the operation of schools, kindergartens and social services. At the same time, migration acts as a channel for the transfer of new social norms: later first births, fewer children and greater emphasis on professional and personal development. Thus, migration simultaneously "drains" local demographic potential and accelerates the internal demographic transition. Complicating matters further, a considerable proportion of children born to Bulgarian Roma are born abroad and remain invisible in national statistics.

The analysis of interviews reveals a marked transformation of family roles, especially among Roma women. Increasing numbers of women enter the labour market, participate in educational programmes, obtain professional qualifications and engage in public and community activities. This emancipation reshapes internal family dynamics: women participate in decisions concerning the timing and number of children, and motherhood is no longer the only mechanism of social legitimacy. Women thus emerge as key agents of internal social change.

The influence of religious communities, most notably evangelical and Pentecostal churches, is particularly interesting. They function as an internal mechanism of modernisation, promoting responsible parenting, discipline, legitimacy of marriages and limiting the number of children to those for whom adequate care and education can be provided. In many cases, religious leaders contribute to reducing early marriages and discontinuing practices that hinder education and integration. Religion therefore facilitates the transition from high to planned fertility and reinforces the increasingly active role of women in family decisions.

Institutional interventions including programmes for early childhood development, health education and the work of health and educational mediators add another significant dimension. These interventions are most successful when they are locally embedded and culturally sensitive. Where stable and con-

tinuous, they contribute to a decrease in early marriage and births among the youngest age groups, indicating that institutional support can accelerate the transition towards more informed and conscious parenthood.

Finally, the interviews underline the internal heterogeneity of Roma communities. Differences between "local" and "newly settled" groups, between segregated and more integrated neighbourhoods, between large and small settlements, and between religious and non-religious communities, show that the decline in fertility is not a uniform process. It evolves at different speeds and depths depending on the local context. In small towns and highly isolated neighbourhoods traditional models of early marriage and high fertility remain more persistent, while in larger cities and among the more educated, religiously engaged or migration-mobile groups the transition towards limited and planned fertility is significantly accelerated. Roma therefore cannot be viewed as a homogeneous demographic category, and policies targeting them must take into account territorial and group-specific characteristics.

In conclusion, fertility in Roma communities functions not only as a demographic indicator but also as a sensitive reflection of broader processes of social inequality, discrimination and the search for mobility. Decisions about the number of children and the timing of childbirth are embedded in a web of economic constraints, migration strategies, educational ambitions, religious influences and institutional opportunities. The decline in fertility should not be interpreted either as a "threat" or as an automatic marker of successful integration. Rather, it represents a complex adaptation to changing conditions in which traditional models are reshaped under the impact of new values and persistent structural barriers. Understanding these processes requires moving beyond quantitative indicators and examining the interplay between values, inequalities and opportunities for social mobility. Only in this way can policies be designed not merely to regulate demographic behaviour but to meaningfully support Roma families in their effort to provide a better life for fewer but better supported children.

Conclusion

Changes in fertility among Roma communities cannot be attributed to a single determining factor. They are the outcome of the combined influence of economic rationalisation, social mobility, cultural adaptation and institutional mediation. The analysis outlines a clear and consistent trend of declining fertility beginning in the early twenty-first century and intensifying thereafter as a result of large-scale labour migration, rising educational aspirations, the growing social role of women and the influence of religious communities. At the core of this shift lies the transition from a traditional to a modernised family model, in which the number of children is no longer the key priority; instead, the focus is placed on children's opportunities for education and future realisation. The decline in fertility, combined with migration, education and value transformation, is producing profound social and demographic changes within Roma communities themselves.

The social consequences of this transformation are dual. On the one hand, it creates opportunities for upward social mobility through higher educational achievements and greater parental engagement. On the other hand, it generates new institutional challenges, such as adapting schools to children return-

ing from abroad, ensuring cross-sectoral coordination and maintaining continuous monitoring of demographic processes at the local level. In the long term, declining fertility may become a positive resource for social integration if supported by consistent educational, health and social policies. Such policies should not aim to increase the number of children but rather to improve their quality of life, education and developmental prospects. In this sense, the decline of fertility should not be interpreted as a sign of demographic crisis but as an indicator of social transformation in which Roma families gradually turn towards models of modern, conscious and responsible parenthood.

Demographic decline, if not accompanied by social inclusion, may widen the internal inequalities between integrated and non-integrated Roma. At the same time, it provides an opportunity for smaller but more educated generations to become engines of social change if institutional support is granted. A long-term social policy is needed to combine educational encouragement, economic activation and equal access to services in order to transform fertility changes into positive social capital rather than a source of new vulnerabilities.

Despite numerous local and national initiatives, the interviews reveal a lack of strategic thinking and continuity. Changes in fertility remain insufficiently monitored, and data on Roma populations are often fragmented and incomplete. This hinders the development of effective policies and leads to reactive rather than preventive institutional responses. There is a need for systematic local monitoring and analysis including collaboration between municipalities, universities and civil society organisations to ensure up-to-date knowledge of demographic and social processes in Roma neighbourhoods.

The main policy challenges can be summarised in several key directions:

- Establishing regular monitoring and access to reliable statistical data;
- Ensuring active cross-institutional coordination to create a common framework for interaction between systems such as education, health care and social services;
- Providing long-term funding to guarantee the sustainability of mediator programmes;
- Strengthening work with families, religious leaders and youth to support new values of responsible parenthood and social mobility;
- Supporting local economic initiatives related to training and employment of parents, which contributes to changing attitudes towards having many children.

If these directions are implemented consistently, the institutional environment will not simply react to demographic changes but will be able to transform them into a resource for social integration and sustainable development.

Acknowledgements

This paper presents the results of the “Spatial models of the Roma ghettoized urban structures in Bulgaria", a project funded by the Bulgarian National Science Fund (BNSF), Ministry of Education and Science, contract КП-06-Н65/7 from 12.12.2022.

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

Author contributions

Kamelia Petkova and Nadezhda Ilieva jointly designed the study, collected and analysed the data, and wrote and revised the manuscript. Both authors have approved the final version.

Author ORCIDs

Nadezhda Ilieva https://orcid.org/0000-0001-9553-2509
Kamelia Petkova https://orcid.org/0000-0002-3108-3887

Data availability

All of the data that support the findings of this study are available in the main text or Supplementary Information.

References

Beck U and Beck-Gernsheim E (2002) Individualization. London: SAGE Publications Ltd.

Bernardi L and Klärner A (2014) Social networks and fertility. Demographic Research 30 (22): 641–670. https://doi.org/10.4054/DemRes.2014.30.22.

Caldwell C (2004) Demographic theory: A long view. Population and Development Review 30 (2): 297–316. https://doi.org/10.1111/j.1728-4457.2004.014_1.x

Castles S, de Haas H, Miller J (2014) The Age of Migration: International population movements in the modern world (5th ed.). New York, NY: Guilford Press.

European Commission 2020 EU Roma Strategic Framework for Equality, Inclusion and Participation 2020–2030.Brussels: European Commission.

European Union Agency for Fundamental Rights (2022) EU-MIDIS II: Roma results. Luxembourg: Publications Office of the European Union.

Goldscheider F, Bernhardt E, Lappegård T (2015) The Gender Revolution framework. Population and Development Review 41(2): 207–239. https://doi.org/10.1111/j.1728-4457.2015.00045.x

Ilieva N (2013) The Roma in Bulgaria Number and Localization from the Liberation (1878) until the beginning of the 21st Century. Sofia: National Institute of Geophysics, Geodesy and Geography, Bulgarian Academy of Sciences. ISBN 978-954-9649-09-3.

Ilieva N and Bardarov G (2022) (Im)possible Roma Integration: Demographic Specifics. Sofia: Friedrich Ebert Foundation. ISBN 978-954-2979-58-6.

Kováts A (2019) Roma population dynamics in Central and Eastern Europe: Fertility, family patterns and demographic change. Demográfia, 62 (2): 145–170.Kóczé A and Popa R-M (2019) Roma women's reproductive rights in Central and Eastern Europe. Feminist Review, 121(1): 81–99.

Lesthaeghe R (2010) The Second Demographic Transition. Population and Development Review 36(2): 211–251. https://doi.org/10.1111/j.1728-4457.2010.00328.x

Marushiakova E and Popov V (1993) Gypsies in Bulgaria. Sofia: Klub 90 Publishing House.

McDonald P (2000) Gender equity and fertility transition. Population and Development Review 26(3): 427–439. https://doi.org/10.1111/j.1728-4457.2000.00427.x

Surdu M and Surdu L (2006) Fertility and reproductive health among Roma women in Romania. Reproductive Health Matters, 14(27): 44–52.

Tomova I (2005) Demographic processes in the large ethnoconfessional communities in Bulgaria. In: M. Ivanov & A. Atanasov (Eds.), Demographic Development of the Republic of Bulgaria Sofia: Bulgarian Academy of Sciences:155–177.

Tomova I (2009) Health and the Roma Community: Analysis of the Situation in Europe (Preliminary National Report). Madrid. ISBN 978-84-692-5537-7.

Tomova I, Pamporov A, Milenkova V (2011) The socio-economic situation of vulnerable ethnic minorities in Bulgaria. Sofia: http://rudocs.exdat.com/docs/

Vašečka M (2012) Reproductive behaviour of Roma communities in Slovakia. In J. Vaňo (Ed.), Social inclusion and demographic trends: 87–110. Bratislava: INFOSTAT.