



*Empowered lives.
Resilient nations.*

Health deprivation among Roma in the Western Balkans

New evidence on the social, economic and environmental determinants of health among marginalised Roma populations

2018

Roma Inclusion series



This publication was prepared
with support from the European Union

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Cover photo: UNDP

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To be cited as: Nikoloski, Z., Marnie, S. (2018). Health deprivation among Roma in the Western Balkans: New evidence on the social, economic and environmental determinants of health among marginalised Roma populations

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1. Introduction and Summary

Social, economic and environmental factors represent the three interlinking pillars of sustainable human development. They also constitute the key determinants of the health status for the world's population, and contribute to many inequities in health outcomes (UNDP, 2017). While this is widely acknowledged, the effects of the Social, Economic and Environmental Determinants (SEEDs) on health and health equity are rarely adequately addressed in development policy and practice, meaning that many important opportunities to maximize co-benefits for health and development are missed. This study aims to fill a gap in the literature by looking specifically at evidence on how SEEDs are impacting the health status of marginalised Roma in the Western Balkans.

The study draws on data from 2017 Regional Roma Survey conducted by the United Nations Development Programme (UNDP), the World Bank and the European Commission, and is one of a series of thematic reports commissioned by UNDP to use the survey results to conduct in-depth analysis of different types of deprivation which result from and contribute to exclusion among the Roma population. The 2017 survey collected data on socio-economic position of marginalised Roma and their non-Roma neighbours in the Western Balkans- Albania, Bosnia and Herzegovina (BiH), the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Kosovo*. The report draws on both quantitative data from the survey of 4592 Roma households living in more deprived communities with concentrations of Roma population¹; and also on 996 stories narrated by Roma themselves (micronarratives).

The analysis and report represent a first attempt to consciously link UNDP's work on studying the social, economic and environmental determinants (SEEDs) of health in the region (and their influence on health inequities), to UNDP's long record in measuring and documenting the social exclusion of Roma in the Western Balkan sub-region². Regarding the former, UNDP, in partnership with other actors in the international development community, has done a significant amount of work on examining the link between SEEDs and some of the most common indicators of health status (e.g. mortality, longevity, morbidity, self-rated health etc.). While socio-economic determinants are more commonly studied, there has been less attention paid to environmental determinants. These latter however figure quite prominently in a recent publication by UNDP "The SEEDs Equity Identifier – UNDP's SEEDs of H/HE Screening Tool for Development Practitioners": a screening tool designed to help development practitioners to identify SEEDs of health/health equity components in their projects during the design and implementation phases (UNDP, 2017). Of the total determinants of health listed in this screening tool, nine are directly linked to the environment where people live and work, i.e. access to affordable housing, exposure to hazardous substances, greenhouse gas emissions, indoor air quality, land use, outdoor air quality, soil pollution, waste management and water/sanitation. To the extent possible, we use the 2017 survey data to look at the impact of such environmental determinants – as well as selected socio and economic determinants – on the self-rated health status of marginalised Roma, and on that of their non-Roma neighbours living in close proximity to them.

*For the United Nations: All references to Kosovo shall be understood in the context of UN Security Council Resolution 1244/1999

*For the European Union: This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

¹ The sample also includes 2168 non-Roma households living in the same settlement, making the total sample 6780 households, with a sub-sample of 4592 Roma households and 2168 non-Roma households. For more details on the sampling methodology see IPSOS 2017.

² See for example, UNDP (2005), Faces of poverty, faces of hope: Vulnerability profiles for Decade of Roma inclusion countries, United Nations Development Programme, Bratislava; UNDP (2006), At Risk: Roma and the displaced in Southeast Europe, United Nations Development Programme, Bratislava. Ivanov A. and Kagin J. (2014), Roma Poverty from a Human Development Perspective (Roma Inclusion Working Papers, Istanbul, UNDP); Cukrowska E. and Kocze A. (2013), Exposing Structural Disparities of Romani Women, (Roma Inclusion Working Papers, Istanbul, UNDP).

The objective of this study is thus to analyse the determinants of self-rated health of the Roma population, whilst paying particular attention to the environmental determinants of health deprivation in the Western Balkans. As indicated above, the analysis is based on two main sources, namely (i) the latest (2017) round of the household survey of marginalised Roma and their non-Roma neighbours and (ii) evidence from 996 'micronarratives', stories related by the Roma population themselves, which were collected in a parallel data collection exercise in 2017, in the same countries.

For the quantitative analysis we use the 2017 survey data on self-rated health status as a proxy indicator for health status and mortality. We also use the survey data to look at the main determinants of inadequate access to health services (i.e. unmet need for health care) as this has a direct impact on self-rated health status, and is also one of the core SEEDs (UNDP, 2017). The study uses descriptive statistics, but also logit modelling to determine the main determinants of differences in self-rated health status and of reduced access to health services.

Overall, the descriptive statistics confirm that marginalised Roma have significantly worse self-rated health status compared to their non-Roma neighbours, and that they also face more barriers to accessing healthcare. A similar picture emerges when we disaggregate the results by gender, i.e. a higher percentage of male and female non-Roma claim that they are in good or very good health, compared to the Roma population.

When looking at the link between self-rated health and environmental variables, we find that those living in an area with worse environmental indicators (living in an area with worsened housing, living in an area with worsened water supply, living in an area with worsened sewage and living in an area with worsened health centres) are in worse health, and that this relationship is much more pronounced among the Roma compared to non-Roma. Importantly, respondents living in an environment where there has been a deterioration in the conditions at healthcare centres in recent years consistently rate their health status as worse than others in the sample.

The logit modelling confirms that living below the poverty line is also associated with worse self-rated health and that, as expected, there is a linear link between age and self-rated health, with older respondents having worse self-rated health. Self-rated health improves with the education level of the respondent. More specifically, those with the highest education attainment (higher education) are roughly 3 times more likely (relative to those without any education) to be in good or very good health. Finally, the logit modelling exercise confirms that those living in areas with worsened healthcare centres (i.e. which have deteriorated in the past five years) have a lower self-rated health status relative to the rest.

The same logit modelling analysis is then carried out on the Roma sub-sample alone. As in the case of the entire sample, we find overwhelming evidence that self-rated health increases with education attainment. We also find evidence that those who are employed have higher self-rated health status, relative to those who are unemployed or are not in the labour market. The results vis-à-vis the environmental variables correspond to our results for the entire sample: i.e. those Roma who live in areas where conditions at healthcare centres have deteriorated in the past five years, have lower self-rated health indicators, pointing to issues of access and utilization of healthcare services.

Logit analysis is also carried out to identify the main determinants of unmet health needs. Again, Roma respondents have much higher unmet needs compared to non-Roma, and those living in poverty are more likely to have higher unmet needs. We also find that the extent of unmet need increases with age. Education is less relevant in explaining differences in unmet needs, but living in cities or towns is associated with better access to healthcare, suggesting that access to and quality of health centres and health personnel in the rural areas remain problematic in the region. Here we do not find any specific evidence of links between differences in access and the environment variables.

When performing logit analysis on the Roma sub-sample to look at the determinants of unmet health needs, we find that gender plays a significant role, with males having better access and use of services than females. Again, the probability of unmet need rises with age, and the probability of reporting unmet needs decreases with education attainment. Similarly, those that are employed having lower likelihood to suffer from access to healthcare issues, and those that live in the cities or towns also have a lower probability of suffering from access issues. Finally, we find evidence of a link between chronic illnesses and access to healthcare issues, with results suggesting that those with one or more chronic illness have a higher likelihood of unmet need.

The main reasons given for not seeking care when needed are lack of money (or lack of coverage) – roughly 56.2%, while about 10% of the respondents state that the waiting list is too long. These results are confirmed by the survey results regarding utilization of healthcare services. For example, while 27.1% of the Roma respondents reported that they had had dental check-ups in the last year, roughly 42% of non-Roma had done so. Similarly, 29.6% of Roma women had had a gynaecological check-up, and 34.6% of non-Roma have done so.

The results of the quantitative analysis are confirmed and reinforced by those emerging from analysis of the 'micronarratives'. While health topics figure explicitly in only a fraction of the stories (roughly a fifth of the stories specifically mention health issues), we find that in these stories there is a strong link between health and environment. More specifically, living conditions in the most immediate environment (e.g. housing) as well as in the community (e.g. pollution) are the most common environmental issues highlighted by narrators.

These findings suggest that a policy focus on improving the most immediate living conditions (i.e. addressing housing issues, as well as issues of income poverty etc.) but also community related problems (i.e. improving access to sanitation, improving access to clean and safe drinking water as well as improving the overall conditions of the healthcare centres) could go long way towards improving the health outcomes of the Roma population in the Western Balkans.

2. Literature review

2.1. ROMA SELF- RATED HEALTH

Only a few publications can be found on the subject of Roma health, and most focus on genetic, biological, medical or anthropological topics related to infectious diseases or hereditary defects (Koupilova et al., 2001; Vozarova de Courten et al., 2003; Zeman, Depken, & Senchina, 2003). In general, Roma are found to have poorer health outcomes than majority populations (Hajioff & Mckee, 2000; Parry et al., 2007; Sepkowitz, 2006; Van Cleemput, Parry, Thomas, Peters, & Cooper, 2007; Zeman et al., 2003). For example, Roma are reported to have a higher prevalence of coronary artery disease, obesity, hyperlipidaemia and diabetes mellitus compared to the majority populations, and a higher occurrence of both health complaints and mental health problems (Goward, Repper, Appleton, & Hagan, 2006; Hajioff & Mckee, 2000; Nesvadbova, Rutsch, Kroupa, & Sojka, 2000; Sepkowitz, 2006; Vozarova de Courten et al., 2003).

A limited number of research papers have focused on identifying the determinants of self-rated health, usually within a single country context. In Slovakia, for example, Kolarcik et al (2009) found that Roma adolescents reported poorer self-rated health, more accidents and injuries during the previous year and more frequent use of healthcare during the past year. Similar findings emerged from another study (Jarcuska et al, 2013). Focusing on Serbia only, Janevic et al (2012) found that Roma were twice more likely to report having poor self-rated health compared to the rest of the population, though the probability was reduced when controlling for demographic and socio-economic variables. In Hungary (Kosa et al. 2007; Voko et al. 2009), Roma were found to have more than twice the risk of reporting poor self-rated health as non-Roma, although further analyses showed that this increase in risk was accounted for entirely by socioeconomic factors.

2.2. ACCESS TO HEALTHCARE

Lack of access to quality healthcare is one of the most common factors associated with poor scores for self-rated health. (Allin et al, 2009; Wagstaff and van Doorslaer, 2000). In the context of Central and Eastern Europe more generally and the Western Balkans more specifically, the evidence suggests that Roma face serious barriers in accessing healthcare. Such barriers include lack of health insurance and other official documentation leading to exclusion of Roma from health services, geographic isolation from quality care, lack of information, language and

communication obstacles, direct discrimination, degrading treatment and human rights violations in the provision of care (European Roma Rights Centre, 2006; Council of Europe and EUMC, 2003). Roma children are particularly affected by a range of barriers in obtaining health services (Rechel et al., 2009). A specific study in the context of Serbia has found that lack of documentation, as well as accessibility and affordability of care disproportionately impacts access of Roma to health care services (Idzerda et al., 2011).

3. Data and Methodology

3.1. HOUSEHOLD SURVEY OF ROMA AND NON-ROMA HOUSEHOLDS

The survey data used for the analysis were collected during 2017, and are drawn from a sample of Roma populations living in areas/ communities with higher densities or greater concentrations of Roma population than the national averages³. The sample frame is thus restricted to what we term 'marginalised Roma', i.e. those who are likely to be less integrated into the societies they live in. The survey design also includes a smaller sub-sample of non-Roma population living in close vicinity to the marginalised Roma settlements. The assumption is that these non-Roma neighbours face the same risk of socio-economic and environmental deprivation, i.e. are exposed to the same socio-economic and environmental determinants, apart from that of ethnic background. The sample is thus not representative of the whole Roma, or of the whole non-Roma, population in each of the countries covered by the survey. Rather, a conscious effort has been made to capture the less-integrated Roma, i.e. those most in need of support through inclusion strategies. The sampling of non-Roma living in the same area allows us to use the survey results to look at gaps between marginalised Roma and

their neighbours in living conditions, opportunities, and other factors contributing to exclusion and deprivation. In each of the country, approximately 750 Roma households, and 350 neighbouring non-Roma households participated in the survey. The survey was conducted using face-to-face interviews at the respondents' houses. In line with EU practice, the survey and this study uses the term 'Roma' as an umbrella term to capture all those who identified as Roma, Ashkali, Gypsies or Egyptians.

The 2017 survey builds on the UNDP's first major data collection exercise on Roma living standards, which was carried out in 2004, and which provided baseline data for the Decade of Roma Inclusion. It also builds on the second round of the regional Roma survey carried out in 2011 by UNDP in partnership with the European Union⁴, World Bank, and in coordination with the EU's Fundamental Rights Agency. In fact, the 2017 survey design deliberately replicates (with some adjustments) that of the 2011 regional survey, in order to allow comparison of results both across time and between countries.

Dependent variables

Self-rated health (SRH): in order to create this variable, we relied on the following question: "How is [name's] health in general: (1) very bad; (2) bad; (3) fair; (4) good; and (5) very good". Based on this question, we created a dummy variable called 'good/very good self-rated health' which takes values of 1 if the health status of the respondent is very good or good and 0 otherwise.

Unmet need: in order to construct this variable, we drew on the question asked in the final module of the survey, which is administered to one randomly selected household member, older than 16. The question is: "During the past 12 months, was there any time when you needed to consult a doctor or medical specialist, but you did not?". The variable takes values of 1 if the respondent answered the question affirmatively and 0, otherwise.

¹ Approximately half of the Roma sample included Roma households living in areas with higher density of Roma population (share of Roma 40% or above in total population, and the other half of the sample included Roma households living in areas with lower density of Roma population (defined as those where the share of Roma is from 10 % to 40 % in total population).

² 2011 Regional Roma Survey implemented in Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Moldavia, Montenegro, Romania, Serbia, Slovakia, the former Yugoslav Republic of Macedonia <http://www.eurasia.undp.org/content/rbec/en/home/ourwork/sustainable-development/development-planning-and-inclusive-sustainable-growth/roma-in-central-and-southeast-europe/roma-data.html>

In order to look further into the reasons for unmet need, we also undertook a descriptive analysis of the subsequent question which asks about the reasons for not consulting a doctor: (1) the examination/treatment/medication is too expensive/no coverage; (2) length of the waiting list for the treatment/examination; (3) could not get time off work; (4) could not go due to work or family matters (taking care of children); (5) too far away, had no way how

to get there, travel expensive; (6) was afraid of the doctors/hospital/examination/treatment; (7) wanted to wait to see if the problem solves on its own; (8) did not know good doctor/specialist; (9) went for help to other people (e.g. alternative healer); (10) treatment was refused by service provide/insurance company; (11) no official papers; (12) don't like to go because they are prejudiced against the Roma; (13) it happened abroad.

Independent variables

Roma. We based this variable on the question which elicits information on whether the respondent lives in a Roma settlement or not. The variable takes values of 1 if the respondent has stated that he/she lives in a Roma settlement and 0 if otherwise.

Male. This is a dummy variable which takes values of 1 if the respondent is male and 0, otherwise.

Age. The survey questionnaire elicits information about the age of the respondent, as well as the other members of the household. Based on this question, we created the following age categories: (a) aged 0 to 5; (b) aged 6 to 17; (c) aged 18 to 30; (d) aged 31 to 40; (e) aged 41 to 50; (f) aged 51 to 60; (g) aged 61 to 70; and (h) aged over 70 years of age.

Marital status. We created these dummies based on the question regarding the marital status: (1) married – traditionally; (2) married – officially; (3) married – traditionally and officially; (4) divorced; (5) separated; (6) widowed/cohabiting partner passed away; (7) cohabitation; (8) never married. Based on these answers we have created the following dummy variables: Married, divorced/separated, widowed, cohabiting and never married.

Religious affiliation. Question A7 asks the respondent about his/hers (and the family members') religious affiliation: (1) Orthodox; (2) Catholic; (3) Protestant; (4) Muslim; (5) no religion. Based on this question we created appropriate dummy variables capturing the various religious affiliations.

Education status. Question A9/B6 asks the respondent about the education status of household members: "What is [name's] highest attained education level? : (1) no formal education; (2) incomplete primary; (3) complete primary; (4) completed primary special school; (5) incomplete secondary school; (6) incomplete vocational school; (7) completed secondary school; (8) completed vocational school; (9) completed secondary special school; (10) post-secondary education other than college/university; (11) associate (2yr) college; (12) incomplete university; (13) bachelor; (14) masters; (15) PhD/specialist". Based on this question we created the following dummy variables: no education, incomplete primary education, complete primary education, incomplete secondary education, complete secondary education, higher education.

Question A8 was used in order to create the variable capturing employment status. The question reads: "Considering [name] everyday activities, would you consider [name] mainly as: (1) working –full time; (2) working – part time; (3) working – ad hoc jobs; (4) self-employed; (5) full time home maker (looking after the home/children/relatives); (6) he/she is on paid parental leave; (7) doing unpaid work in family business; (8) doing other unpaid or voluntary work; (9) not working; (10) asking for money; (11) student/pupil/in kindergarten; (12) child not in school; (13) in vocational school; (14) retired; (15) too old to work; (16) unable due to long-term illness/disability; (17) in compulsory military/community services". If the respondent answered the options 1-4 above, then the dummy variable 'employed' that we had created took values of 1 and 0 otherwise.

Urbanicity. In order to capture the rural/urban divide, we relied on the following question: “type of residence the household lives in: (1) capital; (2) district center/city; (3) town; (4) village; and (5) unregulated area. We have created a dummy called city-town which takes values of 1 if the respondent lives in a city or a town and 0 otherwise.

Poverty level. In order to come up with a dummy for (monetary) poverty status we relied on the question on expenditure. The question asks about the spending in the last month on the following items: (a) food, everyday household goods (e.g. hygiene products, detergents etc.); (b) alcohol and cigarettes; (c) clothes and shoes; (d) housing (rent and public utilities – phone, water, electricity); (e) medicines and medical services; (f) paying back loans and instalments; (g) education (including transport, feeds, books, lodging); (h) transportation; (i) socializing events, cafeteria etc. Based on this question we aggregated total consumption and expressed it per household member on a daily basis. PPP conversion factors were used in order to express the consumption in USD, PPP. Finally, based on our calculations, we constructed a dummy variable taking a value of 1 if the respondent lives on more than 1.9 USD per day, PPP and 0 otherwise.

Deprivation index. As a robustness check, we also use an alternative measure for socio-economic status

which corresponds broadly to the EU deprivation index. In order to construct the index, we used a total of 9 values derived from the following questions: (i) can you afford paying mortgage or rent, utility bills, hire purchase instalments or other loan payments?; (ii) can you afford paying for a week’s annual holiday away from home?; (iii) can you afford eating meat, chicken or fish every second day?; (iv) can you afford an unexpected required expenses and pay through your own resources?; (v) does your household have a colour TV?; (vi) does your household have a car/van for private use?; (vii) does your household have a mobile phone or landline?; (viii) does your household have a washing machine?; (ix) can your household afford heating to keep the house sufficiently warm?. Based on these questions, two deprivation indices were created: (a) moderate deprivation index, which takes a value of 1 if the household’s members face 3 of the 9 deprivations above, and 0 otherwise; and (b) severe deprivation index, which takes a value of 1 if the household’s members face 4 out of the 9 deprivations above, and 0 otherwise.

Chronic illness. In order to account for chronic illness, we constructed a variable which takes a value of 1 if the respondent answered affirmatively to the following question: “Does [name] due to chronic diseases, disability or old age have difficulties in performing daily activities?”.

Environment variables

In order to investigate the link between environment and health, we relied on the following question: “Could you please tell me if in the past 5 years the following things have improved, stayed the same or got worse in your neighbourhood?”. The options given were: neighbourhood in general, roads and pavements, private or public housing estates/houses/apartments, sewage systems, electricity/gas supplies, public transport, drinking water system, kindergarten, schools, health centre, community centres and premises for religious ceremonies.

Based on this question, we created the following dummy variables: one which takes a value of 1 if the household lives in an area with worse housing, second one which takes values of 1 if the household lives in an area with worse sewage systems, third one which takes values of 1 if the household lives in an area with worse water supply and finally a dummy variable capturing the state of the health centres in the community which takes values of 1 if the household lives in an area with worse health centres and 0 otherwise.

3.2. METHODS – QUANTITATIVE ANALYSIS

Lack of access to quality healthcare is one of the most common factors associated with poor scores for self-rated health. (Allin et al, 2009; Wagstaff and van Doorslaer, 2000). In the context of Central and Eastern Europe more generally and the Western Balkans more specifically, the evidence suggests that Roma face serious barriers in accessing healthcare. Such barriers include lack of health insurance and other official documentation leading to exclusion of Roma from health services, geographic isolation from quality care, lack of information, language and

communication obstacles, direct discrimination, degrading treatment and human rights violations in the provision of care (European Roma Rights Centre, 2006; Council of Europe and EUMC, 2003). Roma children are particularly affected by a range of barriers in obtaining health services (Rechel et al., 2009). A specific study in the context of Serbia has found that lack of documentation, as well as accessibility and affordability of care disproportionately impacts access of Roma to health care services (Idzerda et al., 2011).

Logit modelling on determinants of self-rated health and unmet need

For the purpose of this study we used regression analyses, in order to identify the main determinants of self-rated health and unmet need.

If we assume a linear model, the probability of being in good or very good health can be analysed by regressing the dependent variable (y_i) on income, a vector of k medical need indicator variables (x_k), and a set of p non-need variables (z_p). The equation would be as follows:

$$y_i^* = \alpha + \beta \ln(\text{inc}_i) + \sum_k \gamma_k x_{k,i} + \sum_p \delta_p z_{p,i} + \varepsilon_i, \text{ with } i = 1, \dots, N \quad (1)$$

We model our binary measures of self-rated health and unmet need by a logit regression. Assuming that y_i^* in equation (1) is a latent variable, the logit model is written as:

$$y_i = \begin{cases} 1 & \text{if } y_i^* > 0 \\ 0 & \text{otherwise} \end{cases} \quad (2)$$

We estimate logit regression models for good/very good health as well as unmet need using STATA 14. To facilitate the interpretation of the results, the estimates of the logit model are presented in odds ratios.

In carrying out the logit modelling analysis we conducted it first on the whole sample and then repeated the analysis on a sub-sample of Roma respondents (in order to identify those variables which are the strongest predictors of self-rated health status and unmet need for the Roma population only). In addition, the logit models include country dummies to control for any unobserved fixed effects. In doing the logit modelling, we proceeded as follows: first, we introduced only the socio-economic and demographic variables (e.g. age, gender, being Roma, marital status, religion, education level, employment status as well as poverty status). For

poverty status, we used the standard international poverty line (i.e. those living on less than 1.9 USD per day, PPP) but, in addition and as a robustness check, we used the EU moderate and severe deprivation index (definitions provided in the section above). After this, we introduced health related variables (e.g. having a chronic illness) and finally, we included the environment variables (e.g. living in an area where sewage is worse compared to five years ago, living in an area with worse water supply compared to five years ago, living in an area with worse healthcare centre compared to five years ago etc.). In doing the logit model, for the self-rated health, we used the total sample (since the question was administered to all household members), while for the unmet need models we used a more restricted sample (as this question was administered to a randomly selected household member).

3.3. MICRONARRATIVES

The quantitative analysis was supplemented by the analysis of 996 micronarratives. A team consisting of Roma activists and UNDP Roma focal points from Albania, Bosnia-Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Kosovo was formed to design a micronarratives framework for the study, and members of the team were trained by Narrate Ltd to use the method.

The team then collected micronarratives from members of Roma households in the six Western Balkans countries/territory, prompting them to articulate their experience of environmental deprivation, i.e. the experience of living and working in hazardous and/or unhealthy environments, as well as exposure and low resilience to disasters.

3.4. MICRONARRATIVES METHODOLOGY

The micronarrative method requires the interviewer to engage in conversation with the storyteller/respondent by beginning with a prompting (open) question to elicit the storyteller’s experience. In this case, the interviewer showed the narrator 9 different

images related environmental deprivation/ risk, and asked the narrator ‘to choose an image that shows a situation that is familiar to you (or resonates with you). Tell us what happened when you were in a similar situation’. (see below)

**Choose an image that shows a situation that is familiar to you (or “resonates” with you).
Tell us what happened when you were in a similar situation**

© 2009 UNDP/UNEP Roma/GoS Env

Narrate/UNDP September 2017

The respondent then narrated his/her experience which related to one of the images. Some examples of the micronarratives are provided below, and in the following sections.

This image tells about our situation in winter. Every winter day, I pray to god not to rain, because my hut is very close to the river. You have no idea how many times we were flooded, and all the dirt of the river came into our houses and wet our clothes. We are afraid that the river could take our kids.

45-49 year old woman from Albania

Bad road

Image number 8 looks like our neighborhood. The houses here are located on the hill, and the neighborhood alleyways are unpaved and without sewage systems. When it rains, water flows just like in the picture. It becomes very muddy and all of it enters inside the house. It is very difficult for children to pass, or when there is an emergency, it is impossible for an ambulance or fire truck to pass.

25-29 year old woman from Albania

Landfill

The Roma live in like this, in difficult conditions... Everyone forgot about us. There are sick old people here. We don't have money for medicine. We live of the things we collect from waste containers. It's like a landfill here.

40-44 year old man from Kosovo

Miserable life

This resembles the house I have been living in for years, which is in such a bad condition that you can't even look at it. There is humidity everywhere, ruined walls, without windows or doors...I sleep in the ground with the kids, because we don't have furniture. My house is in a much worse condition than the one in the picture.

40-44 year old man from Albania

A destroyed house

I experienced a similar case like in the image no. 5, where the house I was living with my kids and my parents went up in flames, as my father was drunk and forgot to put out his cigarette. Luckily, we all survived. We built a hut in that place, just so to get a roof over our heads. We asked for financial aid in the municipality but they didn't help us. Some charity organizations gave me some food and clothes, and another one some money.

35-39 year old woman from Albania

The respondent was then asked to code (interpret) their narratives by responding to eight predefined closed questions (See Annex 1 for micronarratives framework). The questions were:

1. In your example, events happened because of (i) illegal activities, (ii) lack of information, or (iii) prejudice/ discrimination
2. Your example relates to (i) living conditions (e.g. housing), (ii) play/leisure/ social activities, neighbourhood, or (iii) work/ employment
3. In your example, what mattered was (i) working communal services (e.g. roads, public lighting, sewage system, water supply, electricity supply etc); (ii) lack of disaster prevention (e.g. flooding, fire, landslides etc); (iii) healthy environment (e.g. clean air, no rubbish, no flood water etc)
4. In your example, interactions involved (i) the local Roma community, (ii) the non-Roma community, (iii) government authorities
5. In your example, support (policies, interventions and funding) came from (i) government/ local authorities, (ii) international organizations, or (iii) local NGOs
6. In your example, the settlement was (i) illegal, (ii) established in neglected/ abandoned facilities, or was (iii) inconvenient/ risky for living
7. In your example, risks were (i) at home, (ii) at work, (iii) in the neighbourhood
8. In your example, investments of the municipality (if any) (e.g. in the environment and infrastructure) went (i) where it was needed, (ii) to particular geographic areas, or (iii) to particular people/ groups

For each of the questions, the respondent was asked to situate the meaning of the story within a triangle, with each of the three options being located in one of the three points of the triangle. The respondent could locate his/her experience close to one point of the triangle, or between two points (if two options were relevant), or in the middle of the triangle if all options were relevant. Specialized software was then used to produce summary triangles (or sense-making maps) where the responses are grouped into clusters, and the relative importance attached by respondents to

each of the three options can be visualized. Some of these sense-making maps are replicated below in section 3.

For further analysis, layers of clusters were created by adding variables, such as the demographic characteristics of the storytellers, the emotional intensity of stories, and the role of different actors in the story, among others. (For further details on the micronarrative methodology, see Papa and Keskin, 2017).

4. Results

4.1. RESULTS FROM THE QUANTITATIVE ANALYSIS (ANALYSIS OF THE HOUSEHOLD DATASET)

We start our presentation of the results of our analysis by providing an overview of the variables used for conducting the analysis. The summary statistics of the variables used in our analysis is provided in the appendix (Table A1). As can be seen from the table, roughly 71% of the respondents consider themselves to be in good or very good health (self-rated health status being our primary dependent variable). In

addition, for the second dependent variable used in the analysis (i.e. access to healthcare services), we use respondents' answers on unmet need for health care. As can be seen in Table A1, approximately 29% of the respondents did not go to the doctor (in the last year) when they needed to. We also present data relevant to the socio-economic determinants of health, which can be summarised as follows:

- 74% of the respondents are Roma, with the rest being non-Roma.
- Roughly 20% of the sample live on less than 1.9 USD.
- Consistent with demographic trends, 51% of the respondents in our sample are male. In addition, 23% of respondents are aged 6 to 17 years, 22% are aged 18 to 30 years, 12% are between the ages of 31 and 40, while 10% are between the ages of 41 and 50. Finally, 7% of the respondents are between the ages of 61 and 70, and 3 % are over 70 years of age.
- 43% of respondents are married, 3% divorced or separated; 3% cohabiting and 5% widowed. The rest of the sample are singles.
- 17% of the respondents in the sample have incomplete primary education, 22% have complete primary education, 2% have incomplete secondary education, 14% have complete secondary education while 1% and 2% have post-secondary and higher education, respectively.
- 15% of the respondents (of all age groups) in the sample are employed.
- 69% of respondents are living in a city or town, with the rest living in a rural environment.
- Health wise, 10% of the respondents in the sample have a chronic illness.
- Finally, in order to study more carefully the link between environmental variables and health, we constructed four dummy variables that capture the deterioration of the living environment in the past five years, more specifically: worsened housing, worsened water supply, worsened sewage and worsened health centres. Regarding these variables, 16% of the respondents in our sample live in an area with worsened housing, 15% live in an area with worsened water supply, 18% live in an area of worsened sewage while 11% live in an area with worsened health centres.

4.1.1. Descriptive statistics

Overall, the descriptive results suggest that a higher percentage of the non-Roma population is in good or very good health (compared to the Roma population) (Chart 1). A similar picture emerges when we disaggregate the results by gender (i.e. a higher percentage of male and female non-Roma claim that they are in good or very good health, compared to the Roma population) (Chart 2). Interestingly, when looking at the link between self-rated health and environmental variables, we observe, descriptively, at least, that those living in an area with worse environment (e.g. worsened

sewage system compared to five years ago, worse water supply compared to five years ago, worse healthcare centres compared to five years ago) tend to be in worse health (and this relationship is much more pronounced among the Roma compared to non-Roma) (Chart 3, Chart 4, Chart 5 and Chart 6). The results seem to be broadly comparable across different countries. Finally, across all countries (and in the total sample) Roma respondents have worse access to healthcare (i.e. higher unmet need) (Chart 7).

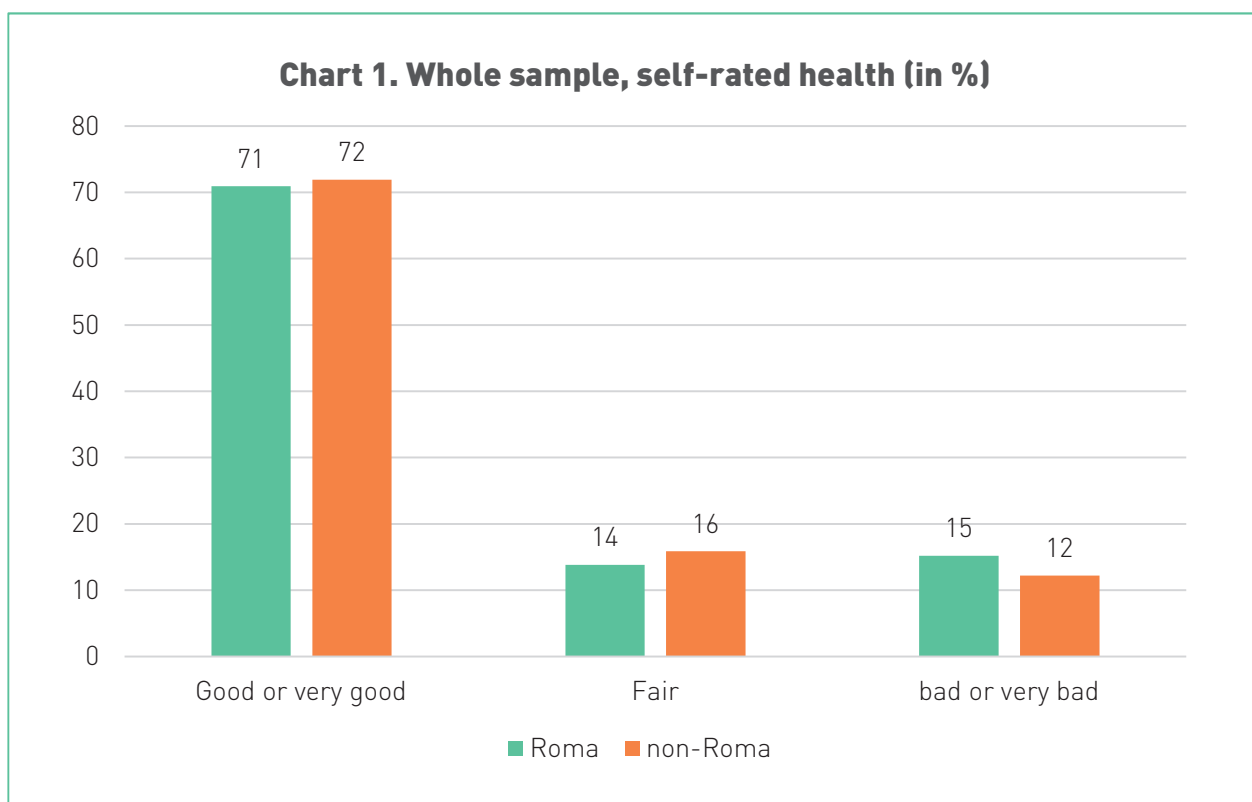


Chart 2. Whole sample, self-rated health, by gender (in %)

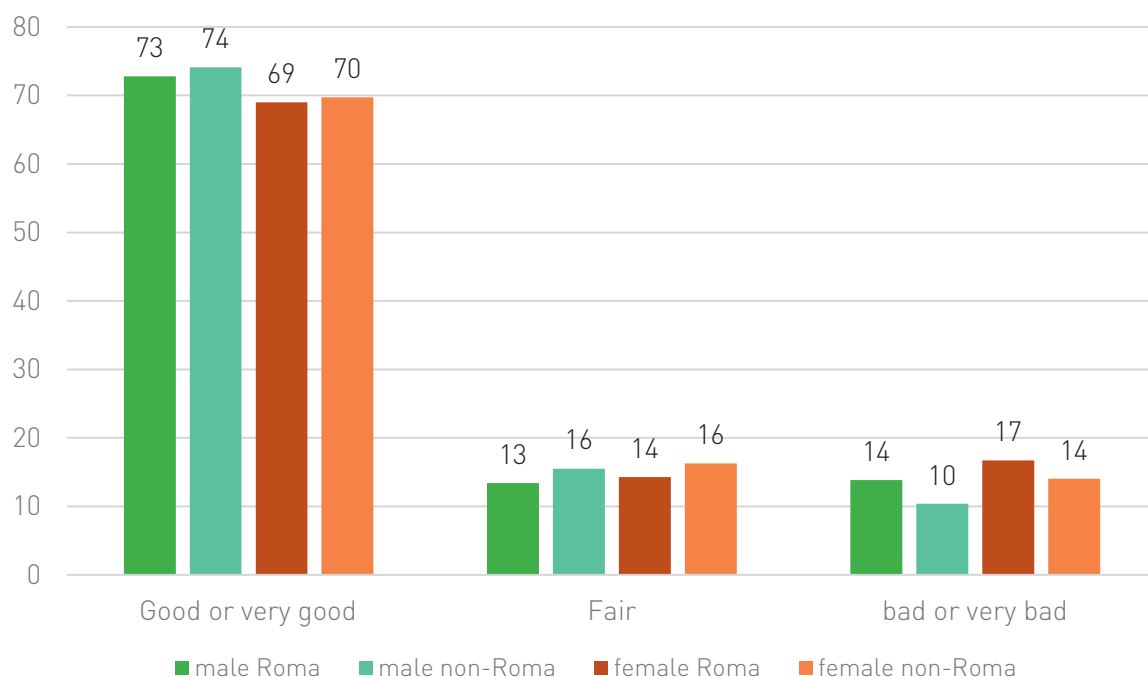


Chart 3. Whole sample, self-rated health, households living in areas with worse sewage compared to 5 years ago (in %)

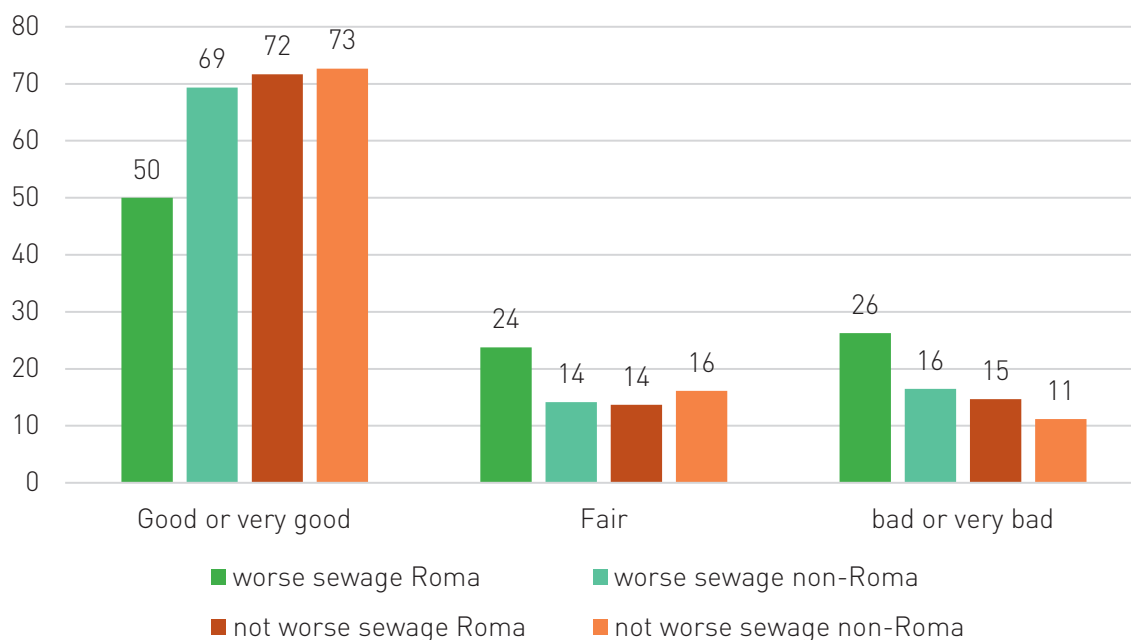


Chart 4. Whole sample, self-rated health, households living in areas with worse housing compared to 5 years ago (in %)

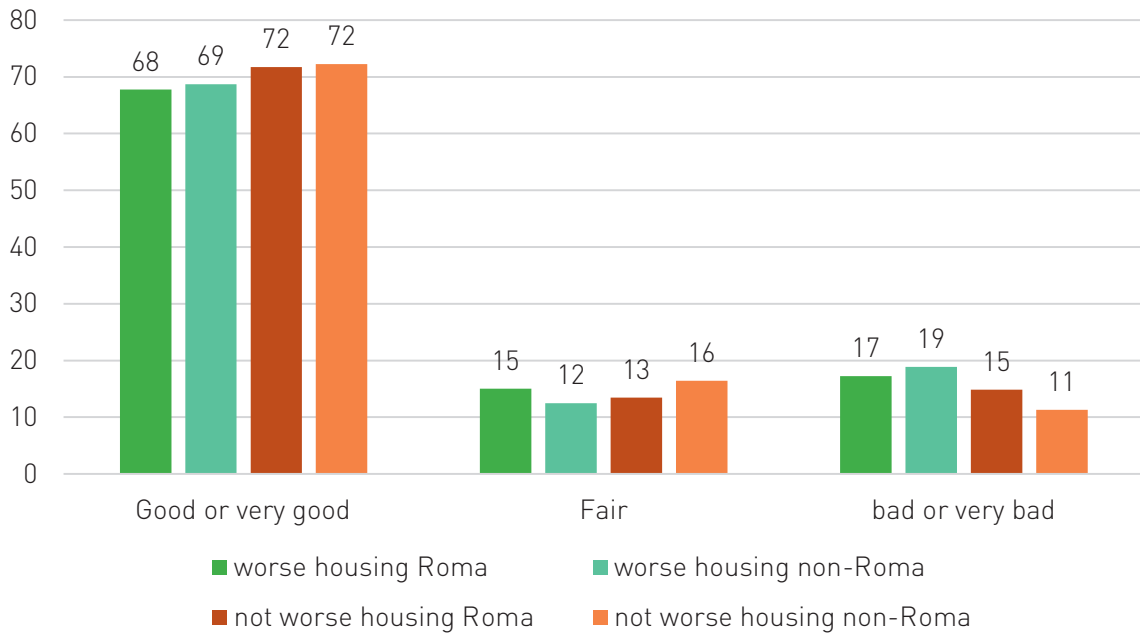
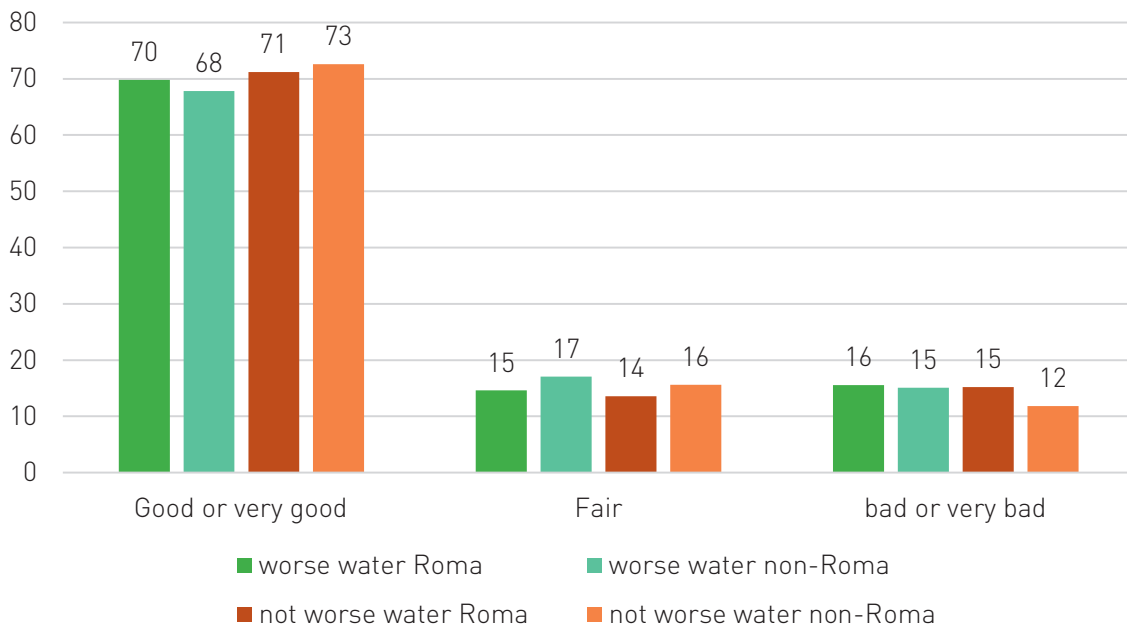
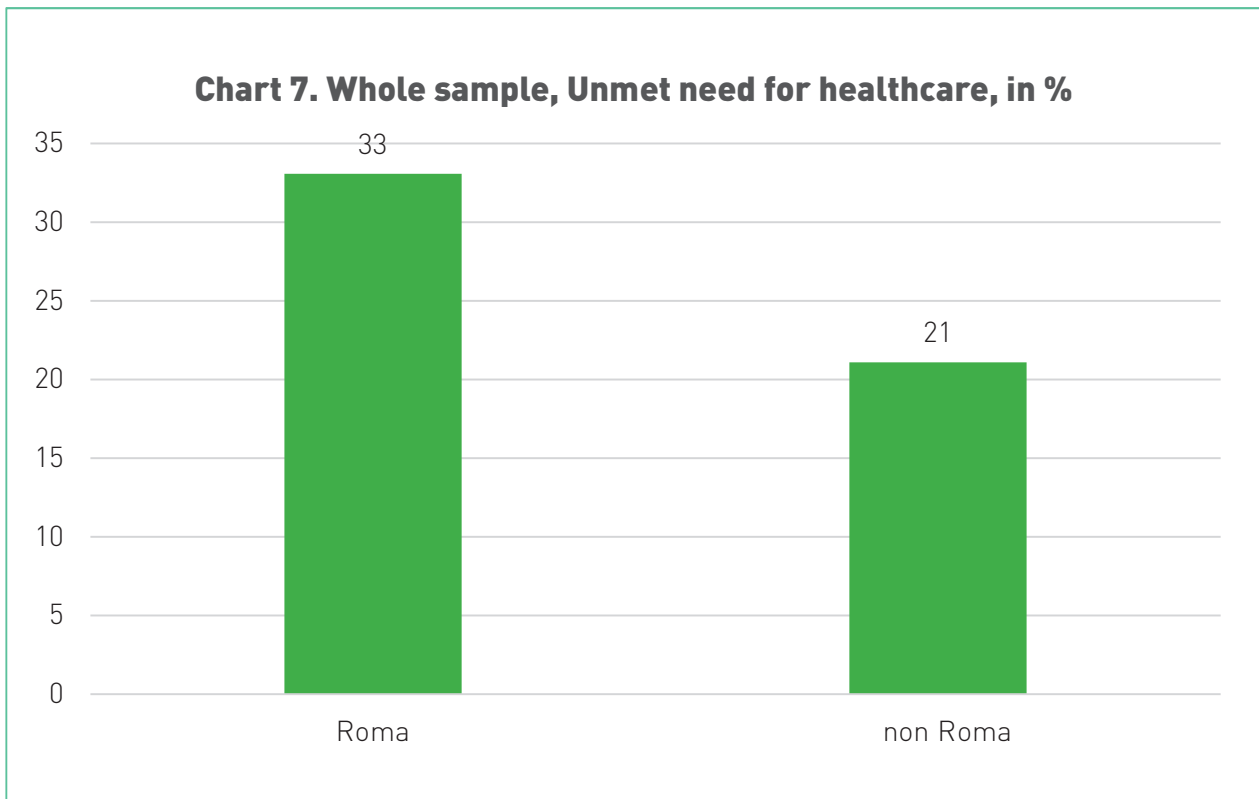


Chart 5. Whole sample, self-rated health, households living in areas with worse water compared to 5 years ago (in %)





4.1.2. Logit model for self-rated health

In carrying out the logit model analysis we proceed as follows: firstly, we only include the demographic and socio-economic determinants of self-rated health (while also using different variables for poverty/deprivation as robustness checks – Models 1 through 3). Second, we introduce health variables (in this case, existence of chronic illnesses) – Models 4 through 6. Finally, and in order to specifically model the link between environment and self-rated health, we introduce the environment specific determinants (living in an area with worsened housing, living in an area with worsened water supply, living in an area with worsened sewage and living in an area with worsened health centres) – models 7 through 9.

There are a few messages that stem from the results of this analysis (Table 1). First, being Roma is associated with lower self-rated health compared to non-Roma (OR roughly 0.6 and significant across all models). Second, living below the poverty line is also associated with worse self-rated health (the evidence for this relationship is strong regardless of the poverty proxy that we use in the modelling exercise). However, we do not find evidence for a link between gender and self-rated health. As expected,

there is a linear link between age and self-rated health, with older respondents having worse self-rated health. Consistent with the literature, we also find that divorced and widowed respondents tend to be in lower self-rated health compared to those that have never been married. Also consistent with the literature, self-rated health increases with education outcome. More specifically, those with the highest education attainment (higher education) are roughly 3 times more likely (relative to those without any education) to be in good or very good health. Not surprisingly, we also find that having a chronic illness is associated with lower self-rated health status, though the magnitude of the OR is fairly small.

Finally, from the environmental variables we do find that those living in areas with healthcare centres which have deteriorated in the past five years, have lower self-rated health status relative to the rest. Please note that when we exclude the country dummies, the worsened sewage variable is also significant (with OR lower than 1) but the significance of the variable disappears once the fixed effects are included in the regression analysis.

In addition and in order to look more closely at the impact of the above determinants on the health status of marginalised Roma, we repeat our analysis only on a sub-sample of the Roma population. The results of this analysis are reported in Table 2 and they very much confirm the results that we obtained when doing the analysis on the entire sample. More specifically, as in the entire sample, we find a close link between deprivation and self-rated health; in other words those that are living below the poverty line or suffering from multiple deprivation, tend to be associated with worse self-rated health. As in the case of the entire sample, we find a non-linear link between age and self-rated health. Those among the Roma population who are widowed tend to report worse self-rated health compared to those who are single (most likely pointing to the mental health effects of widowhood). As in the case of the entire sample, we find overwhelming evidence that self-rated health increases with education attainment. For example, those with higher education tend to

have 2.5 times higher likelihood of being in good or very good health, relative to those without education. Finally, we find evidence that those who are employed tend to have higher self-rated health, relative to those who are unemployed or are not in the labour market.

Healthcare variables are also significant determinants of self-rated health. As in the case of the entire sample, here as well we find robust evidence that having chronic illness is associated with lower self-rated health (although the odds ratios for this particular variable are very low).

The results vis-à-vis the environmental variables correspond to our results for the entire sample, i.e. we find evidence that those living in areas with worse healthcare centres are associated with lower self-rated health, potentially pointing to issues of access and utilization of healthcare services.

4.1.3. Logit model for unmet need

We conducted a second logit model to look at the determinants of access to healthcare. For this we proceeded as follows: firstly, we only include the demographic and socio-economic determinants of self-rated health (while also using different variables for poverty/deprivation as robustness checks – Models 1 through 3). Second, we introduce health variables (in this case, existence of chronic illnesses) – Models 4 through 6. Finally, and in order to specifically model the link between environment and self-rated health, we introduce the environment specific determinants (living in an area with worsened housing, living in an area with worsened water supply, living in an area with worsened sewage and living in an area with worsened health centres) – models 7 through 9. The findings are summarized in Table 3.

Firstly, Roma respondents have much higher unmet need compared to non-Roma. In addition, and closely overlapping with this finding, those living in poverty

have also higher unmet needs compared to those above the poverty line. We also find that the extent of unmet need increases with age and, in addition, we find scant evidence for a link between marital status and unmet need. The impact of religion (as in the case of self-rated health) is insignificant. More importantly, however, while education is a determinant of access, we only find limited evidence of its impact (e.g. those with higher education, as expected, have better access compared to those with no education). More importantly, living in city or town is associated with better access to healthcare (pointing to deficiencies regarding the availability of health centres and health personnel in the rural areas in the region). Finally, we do not find evidence for a link between access and environment variable (this is to a large extent to be expected as the link between these two variables may be tenuous).

As with the logit model of self-rated health, we repeat our analysis of unmet need only on the subsample of the Roma population. The results of this analysis are reported in Table 4. Firstly, we find some evidence that those living under the poverty line tend to have worse access to healthcare, compared to those living above the poverty line. Gender plays a significant role when accessing healthcare services - with males having better access than females (this may be partly explained by the fact that women tend to be heavier users of healthcare services compared to men). The probability of unmet need increases with age, which is similar to our findings when conducting the analysis on the entire dataset. We also find some evidence that those who are widowed and divorced or separated tend to have higher unmet need relative to the single ones. In addition, the probability of having unmet need decreases with education attainment. Similarly, those that are employed having lower likelihood to suffer from access to healthcare issues. Importantly, those that live in the cities or towns also have lower likelihood of suffering from access issues, which is potentially due to the greater availability of healthcare infrastructure in cities and towns relative to villages. Finally, we find evidence for a nexus between chronic illnesses and access to healthcare issues, with results suggesting that those with one or more chronic illness have a higher likelihood of unmet need.

The reasons for not seeking care when needed suggest a combination of both, demand driven factors (e.g. not having the money to pay for the visit) as well as supply driven factors (e.g. the waiting list for the scheduled visit is too long). Chart 8 captures the detailed reasons for not seeking care when

needed. Strikingly, the overwhelming majority of respondents do not seek care when needed because of lack of money (or lack of coverage) – roughly 56.2%. About 10% of the respondents state that the waiting list is too long, while 7.86% and 7.81% claim that they cannot go to healthcare services because of family matters or because the problem was relatively minor. Finally, about 5.7% of those that did not seek care reported problems with distance, which ties with the poor availability of healthcare facilities particularly in rural areas.

Overall, the results suggest that Roma population have more difficulties in accessing healthcare relative to the non-Roma population. These results are confirmed when we look at the utilization of healthcare services. Chart 9 captures the percentage of Roma and non-Roma respondents that have used specific services in the last 12 months. For example, while 27.1% of the Roma respondents have had a dental check-up, roughly 42% of non-Roma have done so. Similarly, 26% of Roma have had an X ray (33.2% of non-Roma), 24.8% have had a cholesterol test (35% of non-Roma have done so), 28.2% of Roma have had a heart check-up (36.1% of non-Roma), 29.6% of Roma women have had a gynaecological check-up (34.6% of non-Roma have done so) and finally, 10.9% of Roma women have had breast cancer screening, compared to 15.6% of non-Roma respondents. Roma respondents have also used the standard biomarker metrics for checking their health to a much lesser extent (compared to the non-Roma respondents) (Chart 10).

Married	1.037 [0.0625]	1.028 [0.0625]	1.030 [0.0627]	0.877** [0.0585]	0.869** [0.0585]	0.901 [0.0649]	0.893 [0.0648]	0.896 [0.0650]
Divorced/separated	0.758*** [0.0780]	0.794** [0.0823]	0.800** [0.0829]	0.699*** [0.0793]	0.735*** [0.0835]	0.691*** [0.0857]	0.719*** [0.0897]	0.722*** [0.0899]
Widowed	0.641*** [0.0627]	0.646*** [0.0637]	0.649*** [0.0639]	0.597*** [0.0654]	0.597*** [0.0659]	0.620*** [0.0734]	0.623*** [0.0744]	0.625*** [0.0744]
Cohabiting	0.996 [0.0976]	1.029 [0.102]	1.031 [0.101]	0.839* [0.0892]	0.861 [0.0915]	0.952 [0.116]	0.965 [0.118]	0.966 [0.117]
(relative to no religious)								
Orthodox	0.786* [0.0973]	0.743** [0.0920]	0.735** [0.0915]	0.755** [0.105]	0.721** [0.1000]	0.747** [0.110]	0.720** [0.106]	0.715** [0.106]
Catholic	1.163 [0.199]	1.134 [0.196]	1.129 [0.195]	1.127 [0.217]	1.117 [0.217]	1.235 [0.257]	1.252 [0.262]	1.236 [0.259]
Protestant	1.090 [0.293]	1.074 [0.290]	1.087 [0.294]	1.069 [0.326]	1.075 [0.330]	1.023 [0.319]	1.034 [0.323]	1.032 [0.322]
Muslim	0.993 [0.117]	0.991 [0.117]	0.979 [0.116]	0.934 [0.123]	0.941 [0.124]	0.945 [0.131]	0.949 [0.132]	0.937 [0.130]
(relative to no education)								
Incomplete primary education	1.162*** [0.0586]	1.161*** [0.0585]	1.159*** [0.0584]	1.184*** [0.0642]	1.198*** [0.0650]	1.153** [0.0689]	1.163** [0.0695]	1.161** [0.0694]
Complete primary education	1.420*** [0.0719]	1.389*** [0.0707]	1.370*** [0.0697]	1.304*** [0.0703]	1.301*** [0.0705]	1.273*** [0.0753]	1.266*** [0.0751]	1.258*** [0.0745]
Incomplete secondary education	1.368*** [0.155]	1.323** [0.150]	1.317** [0.150]	1.250* [0.152]	1.237* [0.151]	1.144 [0.153]	1.110 [0.148]	1.109 [0.148]
Complete secondary education	2.043*** [0.133]	1.871*** [0.124]	1.862*** [0.123]	1.875*** [0.133]	1.779*** [0.128]	1.849*** [0.143]	1.748*** [0.137]	1.767*** [0.138]
Post-secondary education	1.560** [0.289]	1.400* [0.254]	1.373* [0.253]	1.428* [0.273]	1.320 [0.250]	1.551** [0.328]	1.420* [0.294]	1.419* [0.297]
Higher education	2.943*** [0.403]	2.467*** [0.345]	2.564*** [0.360]	2.572*** [0.364]	2.305*** [0.334]	2.567*** [0.387]	2.261*** [0.346]	2.359*** [0.361]
(relative to not employed and those not in the labour market)								
Employed	1.756*** [0.0870]	1.678*** [0.0839]	1.672*** [0.0837]	1.529*** [0.0811]	1.486*** [0.0793]	1.485*** [0.0847]	1.443*** [0.0827]	1.443*** [0.0828]
(relative to those living in villages)								
Living in city or town	1.056 [0.0390]	1.037 [0.0386]	1.045 [0.0388]	0.982 [0.0396]	0.969 [0.0392]	0.975 [0.0439]	0.963 [0.0435]	0.966 [0.0436]
(relative to those living above the deprivation line)								
EU moderate deprivation line		0.535***			0.603***		0.636***	

Table 2. Determinants of self-rated health, Roma population only

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Socio-economic variables									
(relative to those living above the poverty line)									
Living on less than 1.9 USD per day, PPP	1.002 [0.0481]			0.855*** [0.0431]			0.904* [0.0499]		
(relative to female)									
Male	0.986 [0.0396]	0.996 [0.0402]	0.999 [0.0403]	1.049 [0.0455]	1.051 [0.0457]	1.056 [0.0460]	1.069 [0.0506]	1.072 [0.0510]	1.076 [0.0512]
(relative to aged 0 to 5)									
Age 6 to 17	0.688*** [0.0613]	0.689*** [0.0615]	0.689*** [0.0615]	0.760*** [0.0711]	0.758*** [0.0711]	0.759*** [0.0711]	0.798** [0.0799]	0.798** [0.0800]	0.798** [0.0799]
Age 18 to 30	0.290*** [0.0293]	0.293*** [0.0296]	0.294*** [0.0297]	0.349*** [0.0378]	0.346*** [0.0376]	0.348*** [0.0378]	0.360*** [0.0419]	0.360*** [0.0420]	0.361*** [0.0421]
Age 31 to 40	0.0974*** [0.0108]	0.0976*** [0.0109]	0.0979*** [0.0109]	0.138*** [0.0165]	0.136*** [0.0165]	0.137*** [0.0166]	0.142*** [0.0184]	0.142*** [0.0184]	0.141*** [0.0184]
Age 41 to 50	0.0472*** [0.00544]	0.0472*** [0.00545]	0.0472*** [0.00546]	0.0706*** [0.00884]	0.0697*** [0.00874]	0.0697*** [0.00876]	0.0757*** [0.0102]	0.0751*** [0.0102]	0.0750*** [0.0102]
Age 51 to 60	0.0238*** [0.00285]	0.0236*** [0.00284]	0.0236*** [0.00283]	0.0387*** [0.00501]	0.0382*** [0.00496]	0.0381*** [0.00495]	0.0403*** [0.00563]	0.0399*** [0.00559]	0.0398*** [0.00558]
Age 61 to 70	0.0169*** [0.00225]	0.0168*** [0.00225]	0.0168*** [0.00226]	0.0314*** [0.00458]	0.0312*** [0.00457]	0.0314*** [0.00459]	0.0311*** [0.00491]	0.0309*** [0.00489]	0.0310*** [0.00490]
Age 70 and above	0.0130*** [0.00234]	0.0125*** [0.00226]	0.0127*** [0.00229]	0.0307*** [0.00626]	0.0294*** [0.00603]	0.0296*** [0.00609]	0.0304*** [0.00663]	0.0294*** [0.00644]	0.0296*** [0.00649]
(relative to never married)									
Married	1.082 [0.0757]	1.088 [0.0766]	1.091 [0.0768]	0.922 [0.0728]	0.926 [0.0735]	0.927 [0.0737]	0.943 [0.0809]	0.947 [0.0817]	0.949 [0.0819]
Divorced/separated	0.838 [0.100]	0.864 [0.104]	0.870 [0.105]	0.740** [0.0965]	0.768** [0.101]	0.773** [0.101]	0.738** [0.106]	0.760* [0.110]	0.763* [0.110]
Widowed	0.599*** [0.0750]	0.617*** [0.0774]	0.619*** [0.0776]	0.566*** [0.0792]	0.579*** [0.0813]	0.583*** [0.0817]	0.617*** [0.0942]	0.629*** [0.0964]	0.633*** [0.0969]
Cohabiting	1.042 [0.109]	1.073 [0.113]	1.079 [0.114]	0.875 [0.100]	0.896 [0.103]	0.899 [0.103]	1.020 [0.135]	1.031 [0.137]	1.036 [0.137]
(relative to no religious)									
Orthodox	0.872 [0.116]	0.838 [0.111]	0.825 [0.110]	0.867 [0.131]	0.839 [0.127]	0.825 [0.126]	0.835 [0.137]	0.812 [0.134]	0.801 [0.133]
Catholic	0.967 [0.207]	0.982 [0.212]	0.965 [0.208]	1.048 [0.259]	1.074 [0.265]	1.060 [0.263]	1.076 [0.286]	1.101 [0.293]	1.082 [0.289]

Protestant	1.114 (0.315)	1.106 (0.313)	1.114 (0.317)	1.094 (0.354)	1.105 (0.359)	1.112 (0.361)	1.035 (0.341)	1.044 (0.346)	1.045 (0.346)
Muslim	1.059 (0.131)	1.062 (0.131)	1.049 (0.130)	0.969 (0.135)	0.987 (0.137)	0.978 (0.136)	0.956 (0.141)	0.970 (0.143)	0.958 (0.141)
(relative to no education)									
Incomplete primary education	1.196*** (0.0636)	1.192*** (0.0633)	1.190*** (0.0632)	1.209*** (0.0692)	1.224*** (0.0701)	1.221*** (0.0699)	1.159** (0.0732)	1.169** (0.0739)	1.167** (0.0737)
Complete primary education	1.417*** (0.0786)	1.380*** (0.0768)	1.363*** (0.0760)	1.298*** (0.0774)	1.294*** (0.0775)	1.278*** (0.0766)	1.248*** (0.0818)	1.240*** (0.0816)	1.230*** (0.0810)
Incomplete secondary education	1.151 (0.159)	1.125 (0.155)	1.123 (0.155)	1.047 (0.156)	1.054 (0.157)	1.047 (0.157)	0.923 (0.153)	0.922 (0.153)	0.917 (0.152)
Complete secondary education	1.904*** (0.169)	1.772*** (0.159)	1.735*** (0.156)	1.794*** (0.176)	1.741*** (0.173)	1.697*** (0.168)	1.706*** (0.181)	1.654*** (0.178)	1.628*** (0.175)
Post-secondary education	1.720 (0.621)	1.555 (0.546)	1.497 (0.540)	1.573 (0.647)	1.469 (0.603)	1.417 (0.583)	1.927 (0.894)	1.800 (0.836)	1.746 (0.810)
Higher education	2.823*** (0.818)	2.388*** (0.704)	2.401*** (0.707)	2.314*** (0.717)	2.091** (0.655)	2.063** (0.650)	2.369*** (0.792)	2.210** (0.744)	2.216** (0.751)
(relative to not employed and those not in the labour market)									
Employed	1.611*** (0.0958)	1.558*** (0.0930)	1.548*** (0.0925)	1.406*** (0.0899)	1.383*** (0.0886)	1.368*** (0.0879)	1.405*** (0.0974)	1.381*** (0.0959)	1.371*** (0.0954)
(relative to those living in villages)									
Living in city or town	1.121*** (0.0483)	1.108** (0.0478)	1.110** (0.0479)	1.061 (0.0500)	1.053 (0.0497)	1.053 (0.0496)	1.075 (0.0566)	1.068 (0.0563)	1.066 (0.0562)
(relative to those living above the deprivation line)									
EU moderate deprivation line		0.591*** (0.0528)			0.658*** (0.0634)			0.702*** (0.0722)	
(relative to those living above the deprivation line)									
EU severe deprivation line			0.658*** (0.0424)			0.679*** (0.0488)			0.736*** (0.0570)
Health variables									
(relative to those without a chronic illness)									
Chronic illness				0.0157*** (0.00215)	0.0162*** (0.00223)	0.0161*** (0.00220)	0.0163*** (0.00238)	0.0168*** (0.00246)	0.0166*** (0.00243)
Environmental variables									
(relative to those with improved or stable housing)									
Living in an area with worsened housing							0.908	0.917	0.924

(relative to those with improved or stable water supply)										[0.0656]	[0.0665]	[0.0669]
Living in an area with worsened water supply										1.073	1.064	1.058
										[0.0796]	[0.0791]	[0.0788]
(relative to those with improved or stable sewage)												
Living in an area with worsened sewage										0.918	0.928	0.922
										[0.0685]	[0.0692]	[0.0689]
(relative to those with improved or stable health centres)												
Living in an area with worsened health centres										0.749***	0.752***	0.753***
										[0.0580]	[0.0582]	[0.0581]
country dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	19463	19463	19463	19435	19435	19435	19435	19435	19435	16591	16445	16445
pseudo R-sq	0.259	0.260	0.260	0.361	0.361	0.362	0.362	0.362	0.362	0.363	0.364	0.364
Exponentiated coefficients; Standard errors in parentheses												
="** p<-0.1	** p<-0.05											

Table 3. Determinants of unmet need

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Socio-economic variables									
(relative to non-Roma)									
Roma	1.844*** [0.153]	1.819*** [0.153]	1.784*** [0.150]	1.750*** [0.146]	1.740*** [0.147]	1.706*** [0.145]	1.683*** [0.152]	1.676*** [0.154]	1.643*** [0.151]
(relative to those living above the poverty line)									
Living on less than 1.9 USD per day, PPP	0.845** [0.0650]			0.887 [0.0683]			0.918 [0.0784]		
(relative to female)									
Male	0.845*** [0.0515]	0.834*** [0.0511]	0.832*** [0.0510]	0.824*** [0.0508]	0.816*** [0.0504]	0.814*** [0.0503]	0.843** [0.0571]	0.839*** [0.0570]	0.836*** [0.0569]
(relative to aged 14 to 17)									
Age 18 to 30	1.288 [0.216]	1.288 [0.216]	1.294 [0.218]	1.242 [0.209]	1.242 [0.209]	1.247 [0.210]	1.205 [0.219]	1.206 [0.219]	1.210 [0.220]
Age 31 to 40	1.653*** [0.298]	1.649*** [0.297]	1.654*** [0.298]	1.510** [0.272]	1.506** [0.272]	1.510** [0.273]	1.496** [0.292]	1.487** [0.291]	1.491** [0.291]
Age 41 to 50	2.249*** [0.416]	2.279*** [0.423]	2.291*** [0.424]	1.919*** [0.357]	1.943*** [0.362]	1.951*** [0.363]	1.936*** [0.392]	1.943*** [0.394]	1.948*** [0.395]
Age 51 to 60	2.607*** [0.482]	2.604*** [0.482]	2.614*** [0.484]	2.142*** [0.401]	2.132*** [0.400]	2.140*** [0.402]	2.082*** [0.423]	2.067*** [0.421]	2.074*** [0.422]
Age 61 to 70	2.349*** [0.448]	2.347*** [0.449]	2.368*** [0.453]	1.816*** [0.352]	1.807*** [0.351]	1.823*** [0.354]	1.837*** [0.384]	1.805*** [0.379]	1.818*** [0.381]
Age 70 and above	1.892*** [0.397]	1.906*** [0.400]	1.918*** [0.403]	1.289 [0.280]	1.290 [0.282]	1.300 [0.284]	1.305 [0.306]	1.278 [0.301]	1.286 [0.303]
(relative to never married)									
Married	1.168 [0.111]	1.160 [0.111]	1.164 [0.111]	1.232** [0.118]	1.224** [0.118]	1.228** [0.118]	1.215* [0.126]	1.211* [0.126]	1.216* [0.127]
Divorced/separated	1.554*** [0.222]	1.535*** [0.221]	1.517*** [0.219]	1.555*** [0.227]	1.538*** [0.226]	1.520*** [0.223]	1.391** [0.224]	1.391** [0.226]	1.373* [0.222]
Widowed	1.354** [0.186]	1.349** [0.186]	1.339** [0.184]	1.301* [0.181]	1.301* [0.182]	1.291* [0.181]	1.144 [0.174]	1.156 [0.177]	1.148 [0.175]
Cohabiting	1.324* [0.197]	1.322* [0.197]	1.319* [0.197]	1.428** [0.214]	1.428** [0.215]	1.424** [0.214]	1.317 [0.228]	1.307 [0.226]	1.304 [0.226]
(relative to no religious)									
Orthodox	1.087 [0.256]	1.105 [0.260]	1.119 [0.264]	1.080 [0.262]	1.094 [0.266]	1.109 [0.270]	0.932 [0.240]	0.947 [0.245]	0.963 [0.249]
Catholic	1.094 [0.318]	1.127 [0.328]	1.141 [0.332]	1.107 [0.328]	1.133 [0.337]	1.147 [0.342]	1.010 [0.320]	1.032 [0.328]	1.046 [0.333]

Protestant	0.906 [0.375]	0.909 [0.376]	0.907 [0.374]	0.877 [0.384]	0.878 [0.383]	0.879 [0.382]	0.720 [0.328]	0.722 [0.328]	0.725 [0.328]
Muslim	0.890 [0.200]	0.901 [0.203]	0.908 [0.204]	0.897 [0.208]	0.905 [0.210]	0.912 [0.212]	0.775 [0.189]	0.783 [0.191]	0.793 [0.194]
(relative to no education)									
Incomplete primary education	1.152* [0.0928]	1.173** [0.0944]	1.177** [0.0948]	1.166* [0.0945]	1.180** [0.0956]	1.183** [0.0958]	1.217** [0.110]	1.223** [0.110]	1.227** [0.110]
Complete primary education	0.910 [0.0753]	0.935 [0.0773]	0.951 [0.0789]	0.948 [0.0791]	0.965 [0.0805]	0.980 [0.0820]	0.953 [0.0884]	0.962 [0.0890]	0.977 [0.0906]
Incomplete secondary education	1.025 [0.194]	1.067 [0.203]	1.080 [0.206]	1.027 [0.196]	1.056 [0.202]	1.069 [0.205]	0.957 [0.205]	0.978 [0.210]	0.995 [0.214]
Complete secondary education	0.859 [0.0905]	0.920 [0.0979]	0.949 [0.102]	0.899 [0.0952]	0.947 [0.101]	0.977 [0.105]	0.909 [0.105]	0.950 [0.111]	0.980 [0.115]
Post-secondary education	1.252 [0.333]	1.361 [0.361]	1.409 [0.375]	1.297 [0.339]	1.386 [0.362]	1.435 [0.376]	1.393 [0.382]	1.455 [0.399]	1.506 [0.414]
Higher education	0.485*** [0.114]	0.528*** [0.127]	0.541** [0.130]	0.510*** [0.120]	0.541** [0.130]	0.557** [0.134]	0.521*** [0.129]	0.565** [0.141]	0.583** [0.146]
(relative to not employed and those not in the labour market)									
Employed	0.778*** [0.0625]	0.798*** [0.0644]	0.808*** [0.0652]	0.828** [0.0672]	0.845** [0.0689]	0.856* [0.0698]	0.867 [0.0761]	0.883 [0.0778]	0.893 [0.0788]
(relative to those living in villages)									
Living in city or town	0.857** [0.0541]	0.866** [0.0550]	0.866** [0.0550]	0.870** [0.0555]	0.878** [0.0563]	0.879** [0.0564]	0.849** [0.0611]	0.856** [0.0619]	0.859** [0.0621]
(relative to those living above the deprivation line)									
EU moderate deprivation line		1.233** [0.122]			1.171 [0.117]			1.166 [0.124]	
(relative to those living above the deprivation line)									
EU severe deprivation line			1.299*** [0.106]			1.257*** [0.103]			1.263*** [0.111]
Health variables									
(relative to those without a chronic illness)									
Chronic illness				2.167*** [0.178]	2.162*** [0.178]	2.156*** [0.178]	2.404*** [0.215]	2.394*** [0.215]	2.389*** [0.214]
Environmental variables									
(relative to those with improved or stable housing)							0.978 [0.0983]	0.973 [0.0982]	0.967 [0.0974]
Living in an area with worsened housing									
(relative to those with improved or stable water supply)							1.102	1.093	1.096
Living in an area with worsened water supply							[0.113]	[0.113]	[0.113]

Table 4. Determinants of unmet need, Roma population on ly

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Socio-economic variables									
(relative to those living above the poverty line)									
Living on less than 1.9 USD per day, PPP	0.829** [0.0717]			0.886 [0.0771]			0.948 [0.0911]		
(relative to female)									
Male	0.816*** [0.0584]	0.799*** [0.0573]	0.793*** [0.0570]	0.789*** [0.0573]	0.775*** [0.0564]	0.769*** [0.0561]	0.823** [0.0661]	0.814** [0.0655]	0.807*** [0.0651]
(relative to aged 14 to 17)									
Age 18 to 30	1.370* [0.260]	1.367* [0.259]	1.385* [0.263]	1.304 [0.248]	1.299 [0.248]	1.316 [0.251]	1.284 [0.265]	1.275 [0.263]	1.294 [0.267]
Age 31 to 40	1.824*** [0.372]	1.817*** [0.371]	1.846*** [0.377]	1.626** [0.333]	1.613** [0.331]	1.640** [0.336]	1.612** [0.358]	1.597** [0.355]	1.627** [0.362]
Age 41 to 50	2.308*** [0.485]	2.345*** [0.494]	2.374*** [0.501]	1.899*** [0.403]	1.918*** [0.409]	1.944*** [0.414]	1.880*** [0.436]	1.880*** [0.437]	1.905*** [0.443]
Age 51 to 60	2.839*** [0.600]	2.838*** [0.600]	2.906*** [0.615]	2.263*** [0.486]	2.239*** [0.482]	2.296*** [0.494]	2.231*** [0.520]	2.206*** [0.515]	2.266*** [0.529]
Age 61 to 70	2.638*** [0.581]	2.645*** [0.581]	2.709*** [0.596]	1.932*** [0.433]	1.914*** [0.429]	1.966*** [0.441]	2.040*** [0.493]	1.991*** [0.482]	2.045*** [0.495]
Age 70 and above	2.111*** [0.535]	2.166*** [0.549]	2.229*** [0.567]	1.344 [0.354]	1.360 [0.359]	1.405 [0.372]	1.322 [0.378]	1.314 [0.377]	1.352 [0.389]
(relative to never married)									
Married	1.169 [0.134]	1.177 [0.135]	1.177 [0.135]	1.250* [0.145]	1.260** [0.146]	1.260** [0.146]	1.186 [0.149]	1.198 [0.151]	1.198 [0.151]
Divorced/separated	1.430** [0.243]	1.443** [0.247]	1.419** [0.244]	1.467** [0.255]	1.476** [0.259]	1.452** [0.255]	1.286 [0.247]	1.306 [0.253]	1.282 [0.249]
Widowed	1.449** [0.245]	1.468** [0.249]	1.439** [0.244]	1.373* [0.236]	1.392* [0.240]	1.365* [0.236]	1.172 [0.220]	1.198 [0.226]	1.176 [0.222]
Cohabiting	1.289 [0.213]	1.317* [0.218]	1.306 [0.217]	1.418** [0.236]	1.451** [0.242]	1.438** [0.240]	1.326 [0.254]	1.344 [0.258]	1.333 [0.257]
(relative to no religious)									
Orthodox	1.714** [0.454]	1.724** [0.457]	1.772** [0.470]	1.682* [0.465]	1.692* [0.468]	1.741** [0.483]	1.487 [0.438]	1.511 [0.447]	1.560 [0.463]
Catholic	2.083** [0.755]	2.088** [0.761]	2.125** [0.772]	2.189** [0.815]	2.190** [0.819]	2.225** [0.834]	2.050* [0.813]	2.050* [0.815]	2.095* [0.834]
Protestant	1.205	1.208	1.210	1.181	1.180	1.185	1.005	1.006	1.014

Living in an area with worsened sewage									1.056 (0.122)	1.054 (0.122)	1.059 (0.123)
(relative to those with improved or stable health centres s)											
Living in an area with worsened health centres									1.091 (0.136)	1.086 (0.136)	1.078 (0.135)
country dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	4435	4394	4424	4383	4383	4383	4383	4383	3728	3696	3696
pseudo R-sq	0.048	0.047	0.063	0.062	0.064	0.064	0.064	0.064	0.064	0.064	0.066
Exponentiated coefficients; Standard errors in parentheses											
=** p<0.1	**p<0.05	***p<0.01									

Chart 8. Reasons for not seeking care when needed, in %

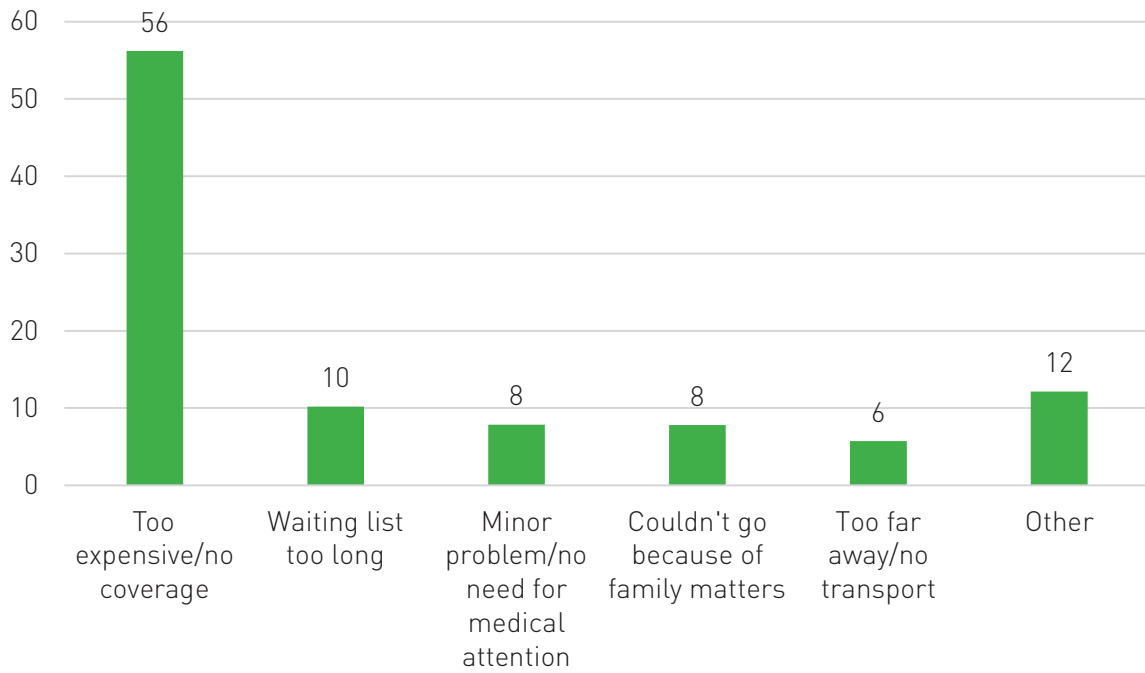


Chart 9. Roma and non-Roma: utilization of specific healthcare services, in %

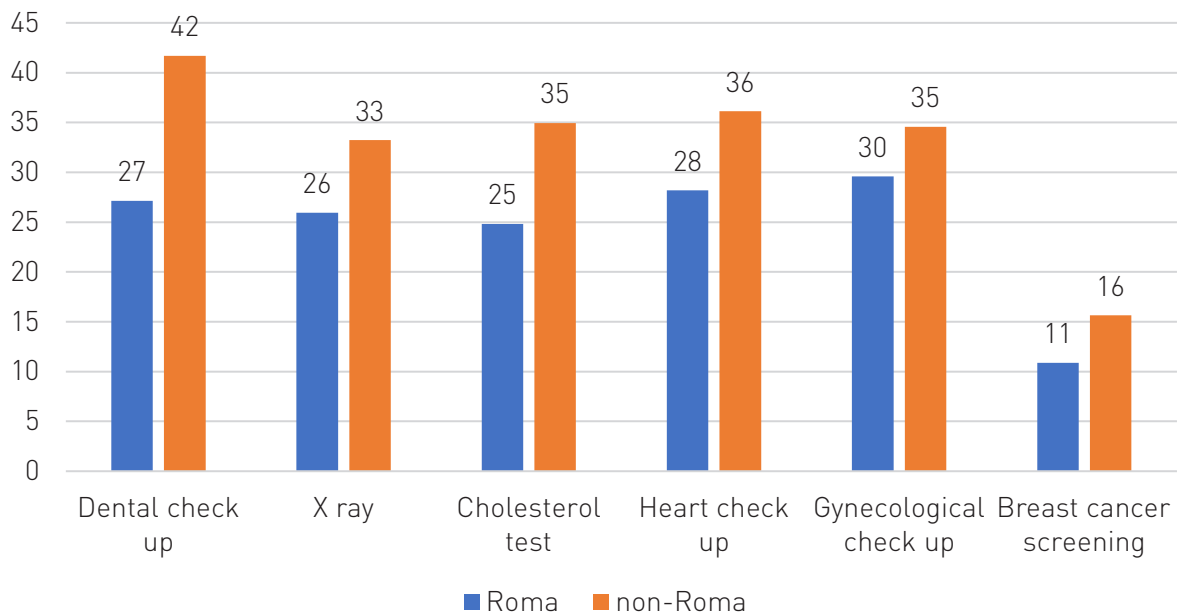
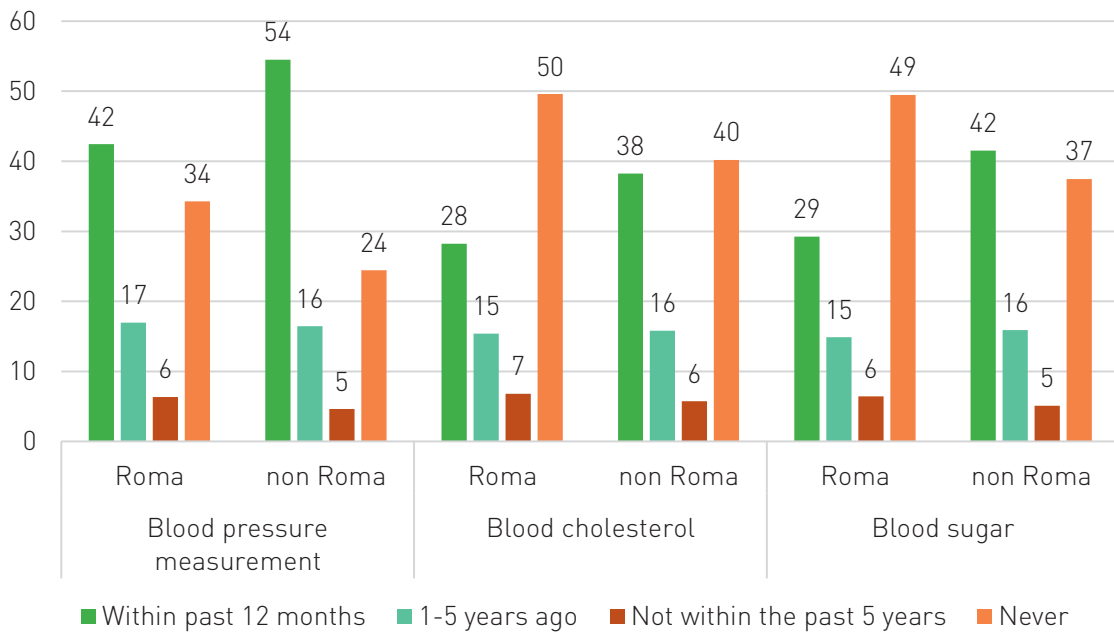


Chart 10. Key biomarkers controls, Roma and non-Roma population, in %



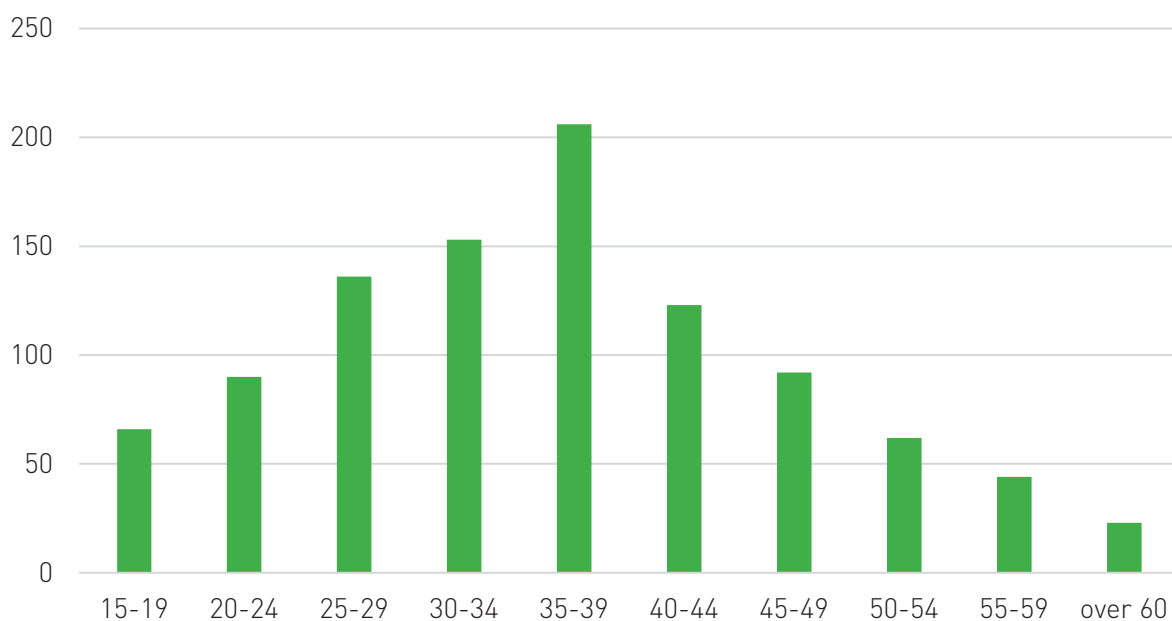
4.2. RESULTS FROM MICRO-NARRATIVES

4.2.1. Who are the narrators?

A total of 996 narratives were collected from the six countries/ territory in the region: Albania, Bosnia-Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo, Montenegro and Serbia. The distribution of stories by age of the respondent is provided in Chart 11. The majority of the storytellers

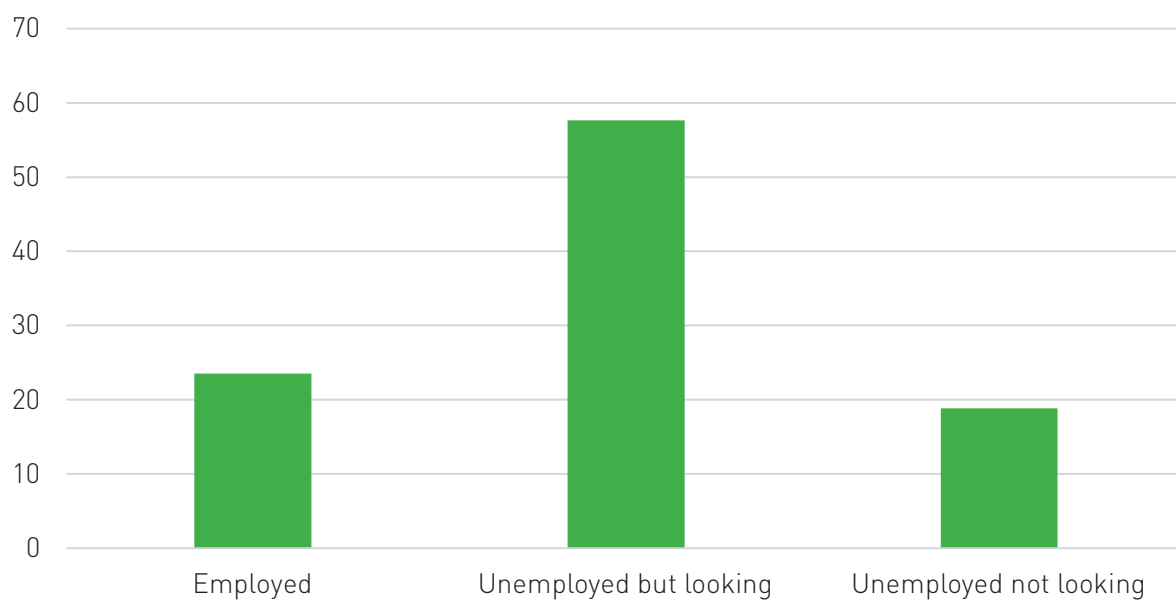
are between the age of 25 and 44. More specifically, 66 respondents are aged 15 to 19 years, 90 are aged 20 to 24, 136 storytellers are aged between 25 and 29s, 153 are between the ages of 30 and 34, 206 are between the ages of 35 and 39, 123 are aged 40 to 44, while the rest are above 45.

Chart 11. Number of storytellers, by age

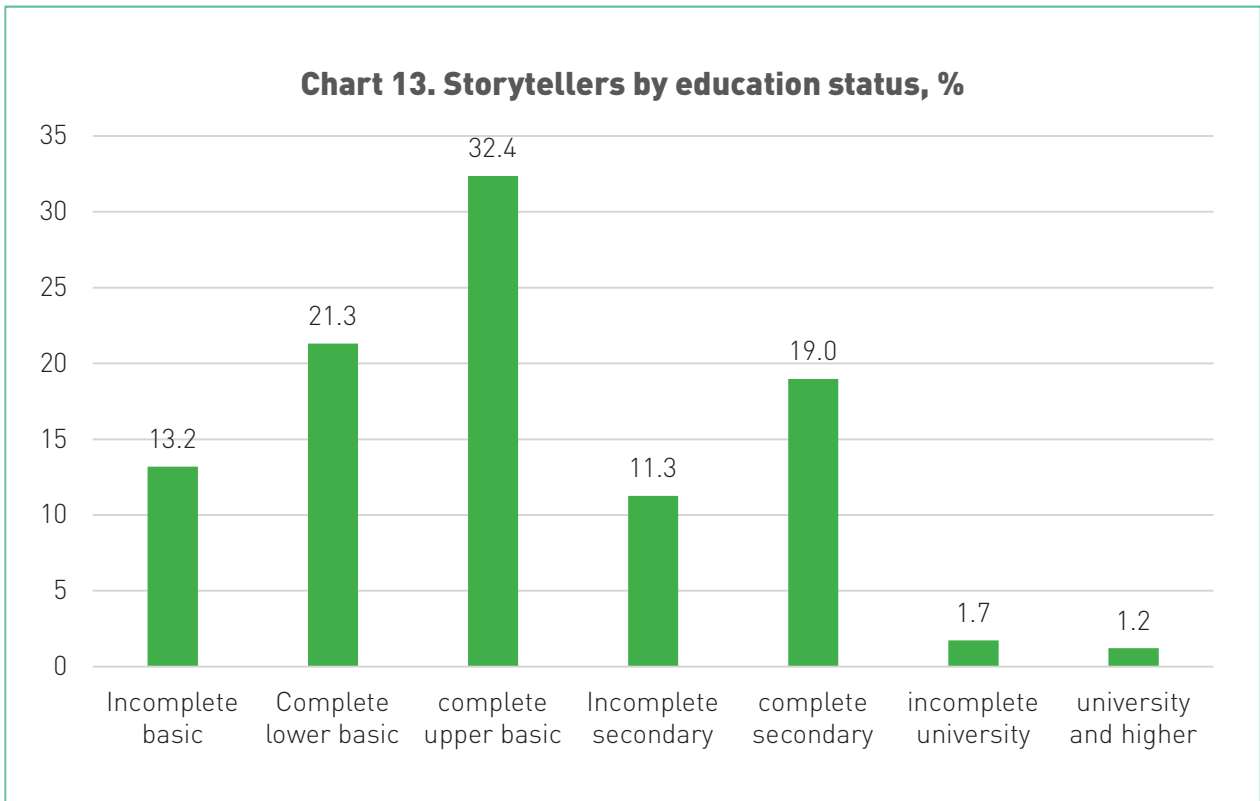


Roughly 23% of the storytellers are employed (Chart 12). The largest share (approximately 58%) are unemployed, but looking for a job. The rest of the storytellers are unemployed and not looking for a job.

Chart 12. Storytellers by employment status, in %



The next chart (Chart 13) provides information on the storytellers by education status. Roughly 13% of storytellers have incomplete primary education, 53.5% have complete basic education (lower or upper basic education), 11.2% have incomplete secondary education, 19% have complete secondary education, 1.7% have incomplete university and 1.2% have complete university education.



4.2.2. Environment and health amongst the Roma population

In the micronarratives the topic of health comes up frequently. While almost all the micronarratives implicitly refer to the health impact of prolonged exposure from particularly poor household or community living conditions, and also due to one-off disasters such as floods or fires; several narratives (approximately one fifth (102)) refer explicitly to health issues. For the analysis, reference to health issues in a micronarrative was determined by the use by the narrator of health-related terms such as specific disease labels (i.e asthma, oncological diseases, bronchitis, gastrointestinal disease, tuberculosis etc), and the mentioning of words such as sickness, contagion, disease, hygiene and infection.

Life in poor conditions

I have seen bad conditions as in the image no. 8. People live in ruined barracks without water, without lights, and they don't have money to buy bread. They survive by begging in the streets. There are no paved roads, nor sewers, nor drinking water, which is the most important. This neighborhood is totally ignored. It is only a few NGOs that sometimes help with some food and clothes for the kids.

40-44 year old man from Albania

Question 7

The sense-making map below summarizes whether the examples provided in the micronarratives relate to conditions at home, the neighbourhood, and/or the work place. Most of the narrators claim that their health-related issues relate largely to the household but also to the neighbourhood. In order to check the

robustness of this result, we also looked only at the narratives with health specific stories, i.e. stories that specifically mention health/health issues. Again, narrators cited both locations as being associated with health risks.

T7. In your example, risks were... N=905



Results using only those micronarratives that specifically mentioned health or health related issues (for selected countries)

T7. In your example, risks were....



Ill health in the household was linked to damp, lack of clean water, inadequate garbage disposal, housing infrastructure, overcrowding and proximity to factories.

I live in a house near Lima for 20 years with a sick man, 3 years old. The house is in poor condition. We pay electricity and we do not have any receipts. In that house there is moisture and the patient is asthma.
Over 60 years old man from Montenegro

The river and the water in the household is contaminated and comes with a virus and gets us all sick
25-29 years old man from the former Yugoslav Republic of Macedonia

I have a little boy and big problems, I live in a house where I'm afraid of infection, there are lots of rats, snakes, frogs, I do not have bathroom nor a proper sanitation, we need it very much because I have a baby who is suffering from tuberculosis, they were 2 times in the hospital after 2 months, they take their medications, they constantly have breathing problems, it's all from this house lacking basic living conditions, I turned to social work and told my situation about children, they only offered me one-time assistance of 100 marks and some kind of food package that's food for my little child, because they can not eat anything.
35-39 years old man from Bosnia and Herzegovina

It happens every day because of the coal mine. Because it my entire family has gotten sick, the air is polluted, you cannot open the window and you cannot drink coffee in the backyard, you cannot hang the clothes to dry, you cannot breath the air but what can I do, I have to live here; we are all sick, I us asthma pump while my kids have lung inflammation but what can I do, my husband works in the mine; if I can I would move to flats for Roma but I am not on that list because none of us is a member of Roma organizations; it's a shame no one helps us.
50-54 years old female from Bosnia and Herzegovina

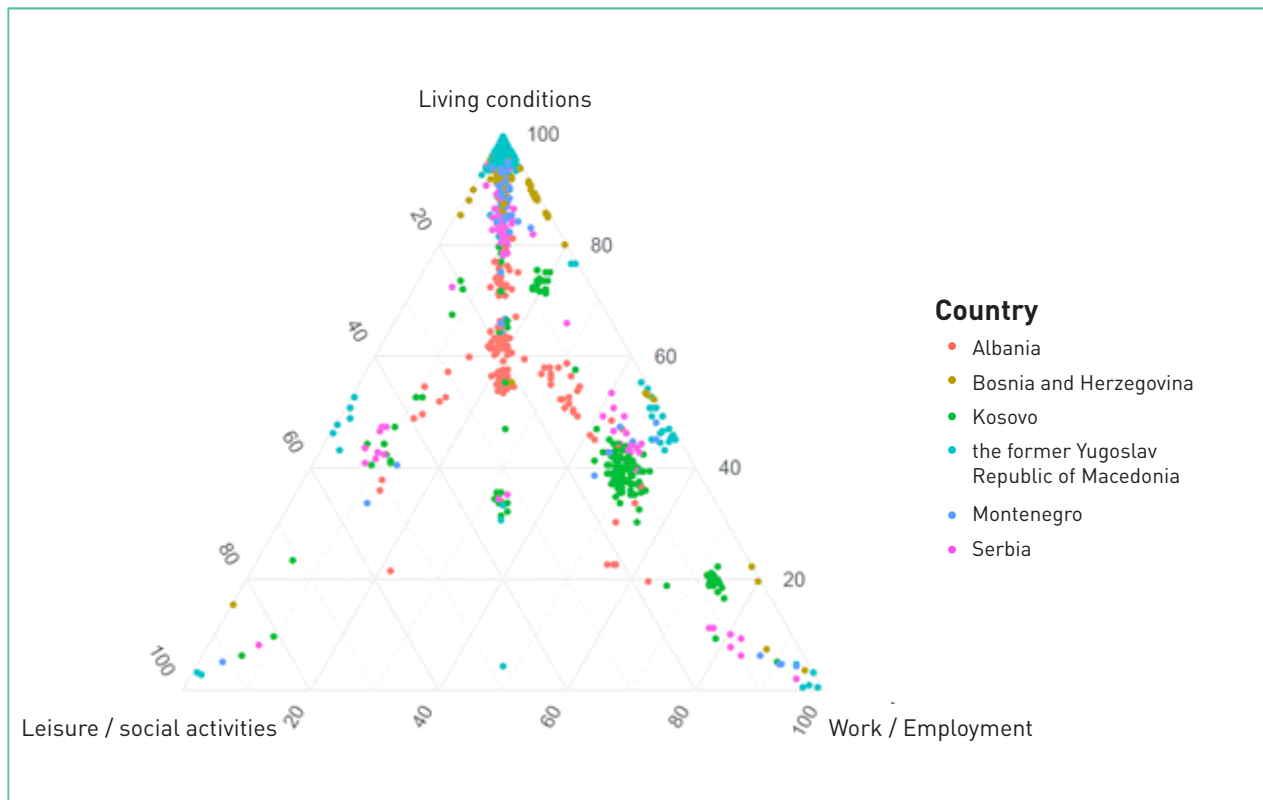
Question 2

The triangle below summarizes whether narrators relate their health issues or risks to living/ housing conditions, work employment, or leisure, and there is a large cluster positioned around living conditions. These include the narratives where health is specifically mentioned, with these narrators referring specifically to the problems of living in crowded conditions, with contaminated drinking water, damp/moisture in the household, presence of garbage, and contaminated air within the home as factors contributing to ill health.

This picture resembles us Roma. This is how we live...altogether, 10 people in one room. At least we have a roof over our heads, but it is difficult to live like this. You can't do anything. The inside of the room is always messy. But, haven't I seen the houses of others?! Some even have their own room, but there's nothing to do. This is the life of a Roma, living altogether in one room.

40-49 year old woman from Albania

T2. Your example relates to... N=938



Results for those micronarratives which specifically mention health issues (for selected countries)

T2. Your example relates to.....



The risks for health due to environmental factors outside the home were identified by narrators as poor sewage, proximity to factories and landfills, and unclean spaces for children playing. Many people associated stench from either neighbourhood or household garbage, as well as smells or dust from neighbouring factories with health risks. The health issues most frequently and explicitly mentioned as being linked to proximity to factories and garbage were respiratory and oncological diseases.

We are most concerned about Železara, when it was built here there weren't any home. They're not going to let you have the right home right there. Now that iron-fired iron waste is accumulating and people say that it has some radiation that causes a disease. The soil in the village is red of that iron-plated dust, let alone our lungs. We end up breathing in all of that.

45-49 year old woman from Serbia

We do not know if it's worse when the iron factory works or does not work. The red «dust» adheres to the windows. And it does not occur to anyone to wonder what the level of contamination is in the city that took over the primacy of oncological diseases. It does not occur to anyone to protest, to search for information on the degree of pollution, to inform the public, to awaken ecological awareness.

25-29 year old man from Serbia

The impact of garbage and sewage on children's health is also mentioned and several narrators expressed great concern about the impact on the current and future health of the children.

It is hard to live here I have little kids here in front of the house there is drainage which spills out can lead to large infections children are all day next to the garbage. I was looking for help from the sanitary and communal inspections to solve it but it is still going on.

40-44 year old woman from Bosnia and Herzegovina

I live on a street that is not asphalted, the sewage system has a low drainage profile and the streets are tight because the settlement is not urbanized and it is built where it got. Not even firefighting trucks can be found. Garbage is not regulated and there is a contagious phenomenon, diseases.”

45-49 year old woman from the former Yugoslav Republic of Macedonia

General uncleanliness and poor hygiene found in the settlement were also pinpointed as health risks.

Our settlements are illegal. The houses are made from plywood. In our environment, they are allergic to lice, the dangers of many diseases, chronic, fever, jaundice, TB, all other diseases. There are no baths in some houses, so some children do not bathe for a day or two, but some for two or three days.

50-54 year old man from Montenegro

People often mentioned illness and disease as things which are continually reoccurring. The repetitive and ongoing nature of illness is captured in this person's exclamatory remark "I am sick again!"

Questions 6 and 3

The sense-maker map for question T6 illustrates the narrators' perceptions of the high health risks related to conditions in the settlement living conditions. Some of the risk linked to settlement living conditions maybe therefore by explained by health risks associated with the risk of contagion and hygiene issues. Some of these issues are also reflected in answers to question T3, where most of the respondents linked their story directly to the environment (e.g. clean air) or indirectly, via the poor access to communal services (e.g. to clean water supply, proper sewage etc).

An inappropriate environment

Image number 8 is like the case I saw a few years ago, a huge poverty... The rain was pouring over the kids' heads. The house was nearly destroyed and about to fall on their heads. We were eating just plain bread, that we barely had afforded to buy; had torn clothes and were barefoot... They had forgotten about this neighbourhood, as if it wasn't existing. There was no electricity and no water to shower.

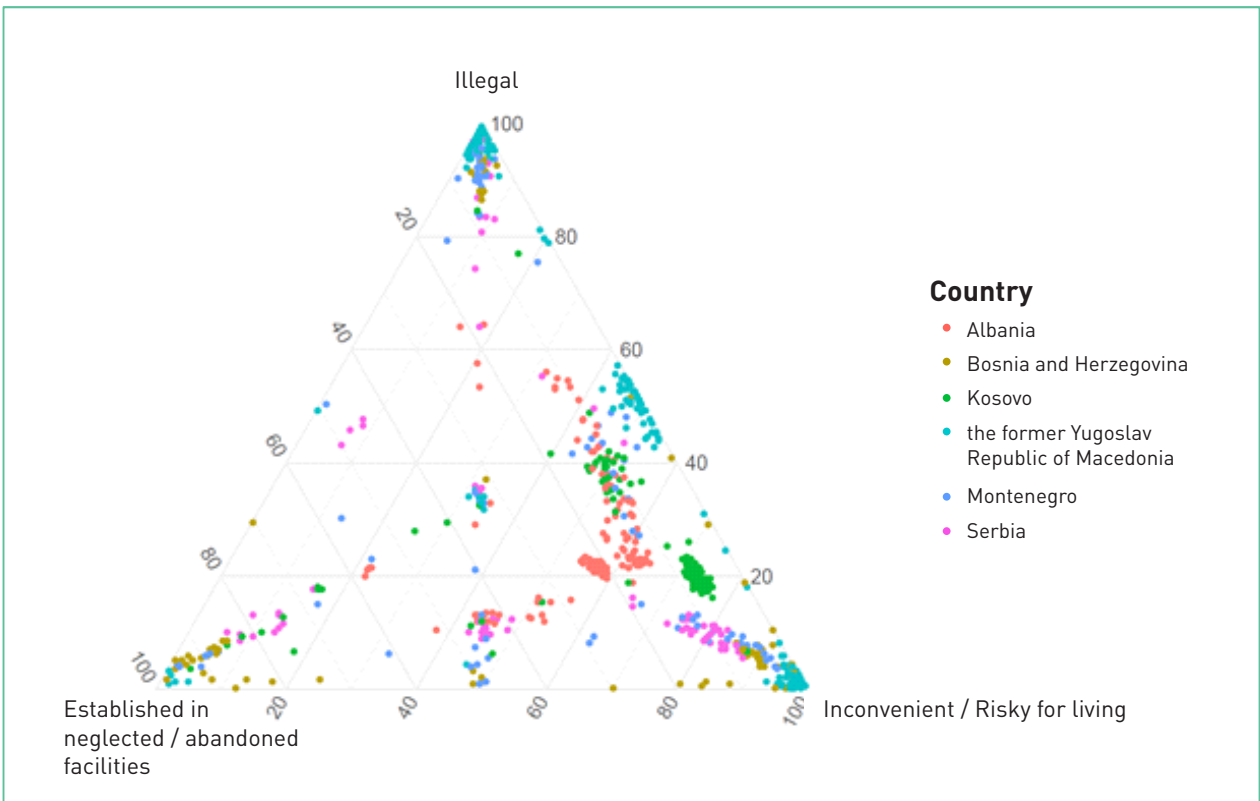
50-54 year old man from Albania

Not a normal life

Just like the residents living in bad conditions as in image no.8, but there's one difference... There are old ruined houses in the picture, but we live in tents. We all live like that, and suffer a lot in the cold. We warm ourselves with fire. This is the life we live. Sometimes we only receive some aid by any NGO, because the government never thinks about us.

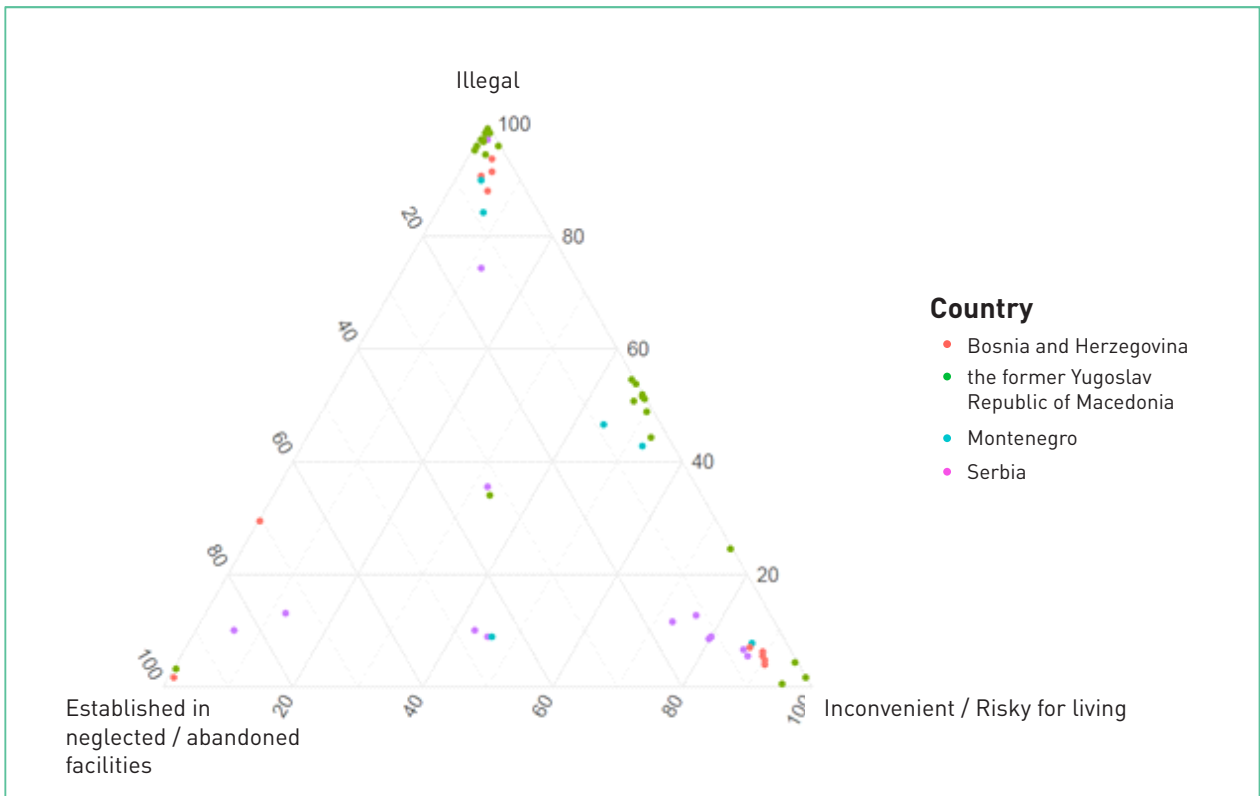
30-34 year old woman from Albania

T6. In your example, the settlement was... N=815



Results for those micronarratives which specifically mention health issues (for selected countries)

T6. In your example, the settlement was....



Life in the middle of waste containers

Each day is tough. We live of things we collect from waste containers. We live 10 people in the house and none of us works. We are sick. We are in the middle of waste containers from 6am until 6pm...nobody sees us.

35-39 year old unemployed man from Kosovo

Air pollution is the worst

I have 10 children and I live in a very small house of 3 rooms. We are suffocating from the air, and except for the dust, the thermal power station is also very near here.

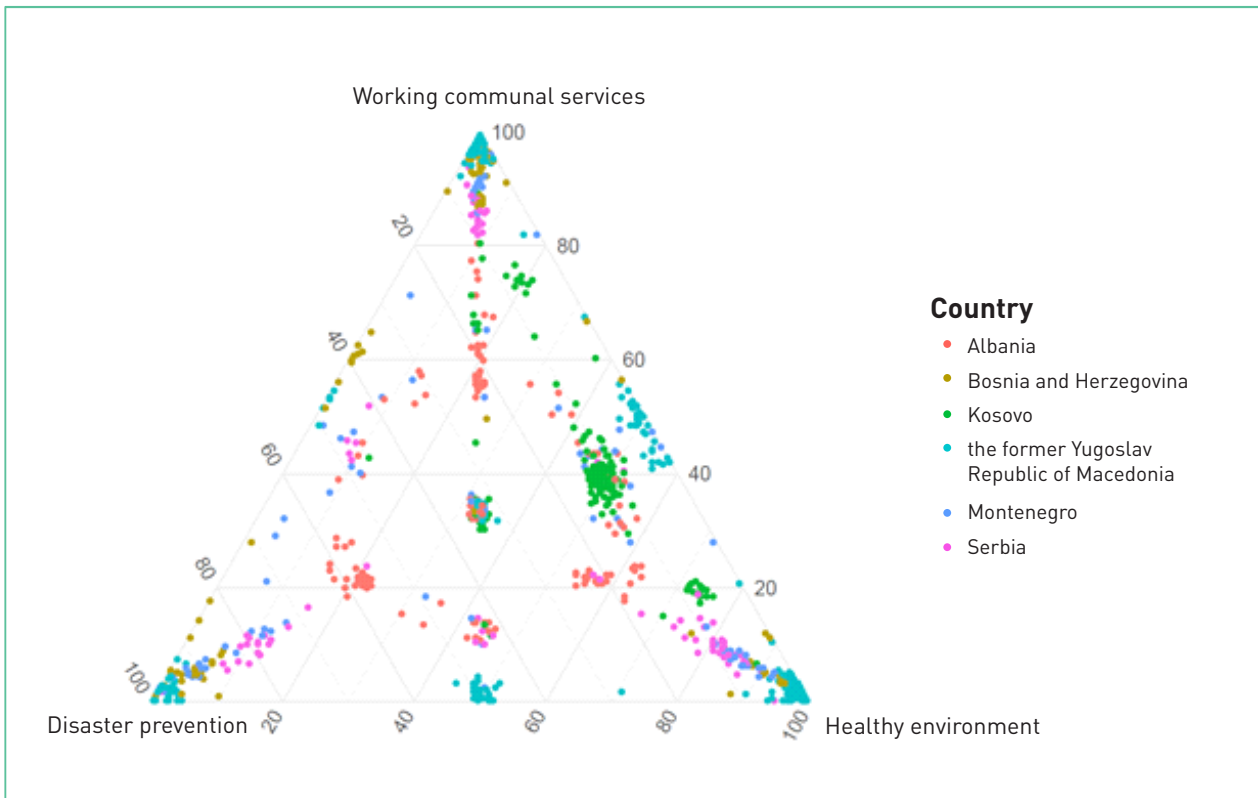
40-44 year old unemployed man from Kosovo

Water scarcity

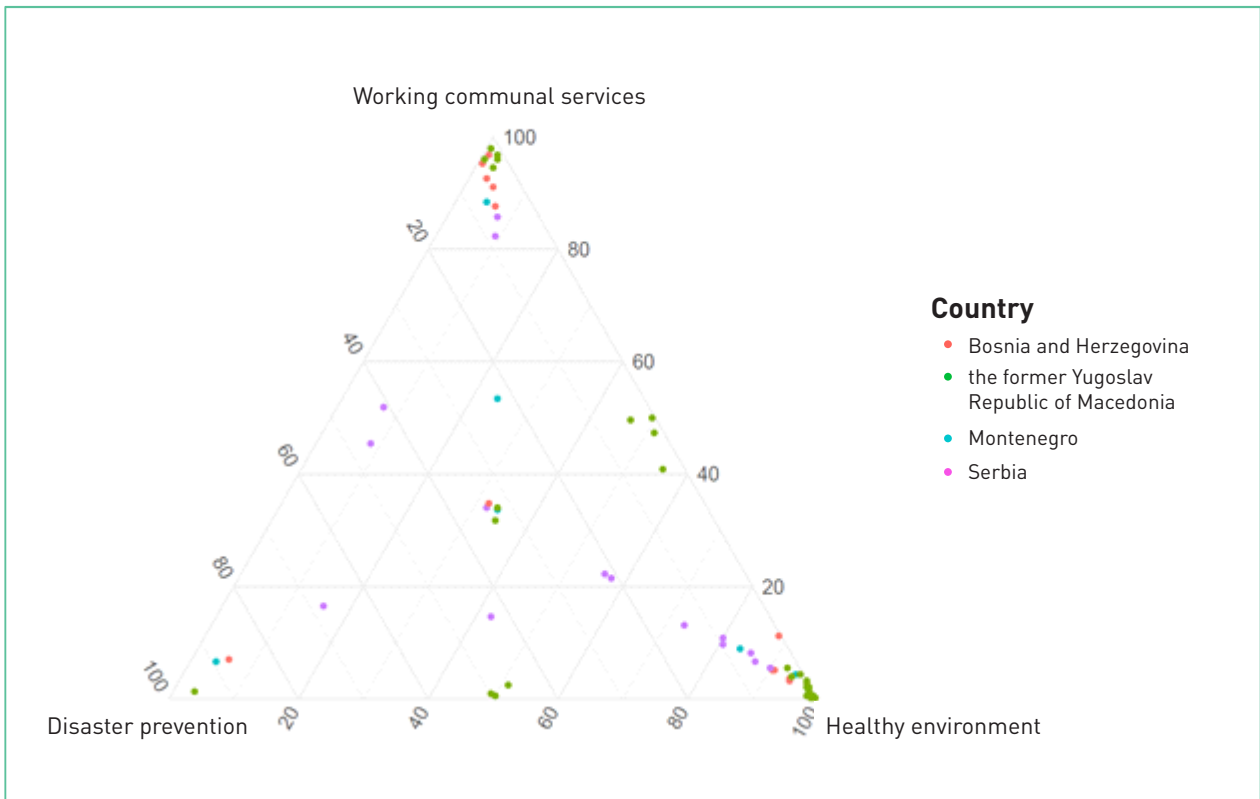
It is very difficult to live in the conditions that we live. Somehow, the situation becomes only worse because of the hard work that I do in waste containers. I'm not in good health, and the environment also endangers my health. Because of the work I do, I'm unclean and I eat like that because sometimes there is water and sometimes not.

30-34 year old unemployed man from Kosovo

T3. In your example, what mattered was... N=882



T3. In your example, what mattered was...



Waste is a disease
I pick image no. 6. Me and my family live in a place like that, full of garbage. There are no waste containers here to throw the waste, but we throw it in any corner in the neighbourhood. Trucks come and throw their waste here. Every morning, we wake up with a bad smell. I'm sure that if we went to see a doctor, they would find endless diseases.
 30-34 year old man from Albania

"It happened to me several times when I went and brought the child to the doctor. I waited for hours in the hall when they finished all the patients in the end they invited me in to inspect my child. In the settlement there are unhealthy conditions and cleanliness is not regulated and children are often ill"
 30-34 years old man from Serbia

We burn the waste here, because they don't come to take it. We don't have any waste containers. We throw the waste in a place in the neighbourhood, and when it becomes a lot, we burn the waste. A huge smoke forms when we burn them, but they also smell very bad.
 40-44 year old woman from Albania

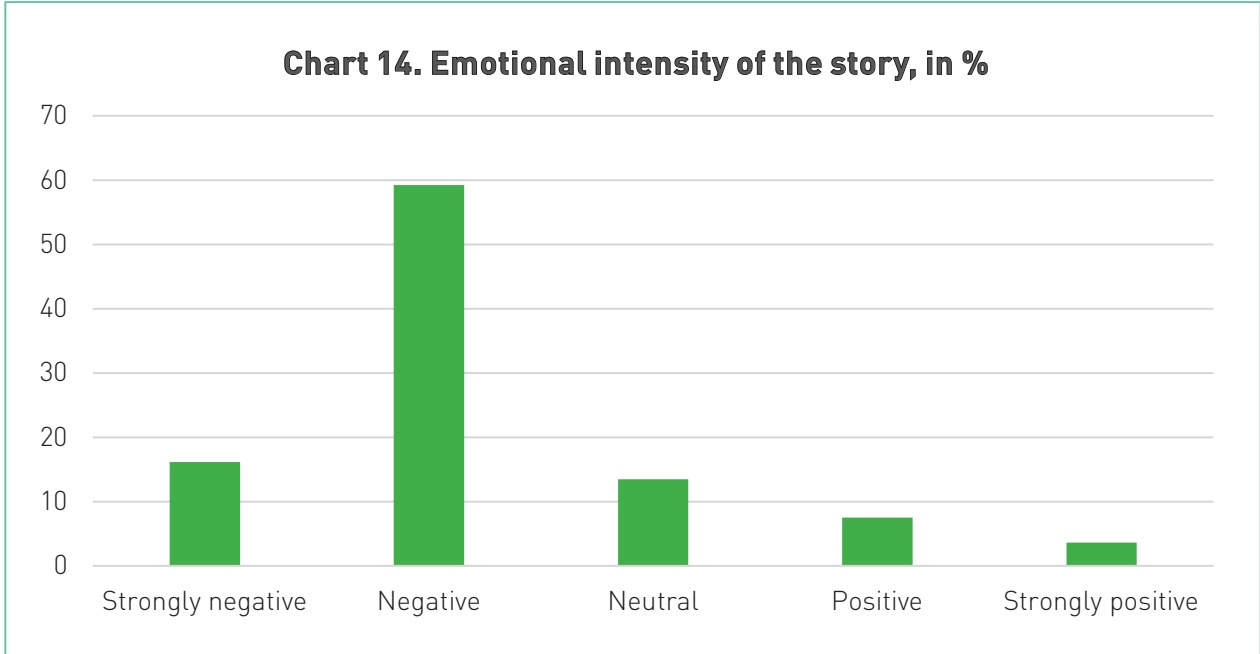
Aside from references to their current state of health, many narrators refer to risks for their future health, expressing fear of getting a disease or infection in the future because of their current environment and living conditions.

"38 years of living and breathing polluted air from a thermal power plant. My mother suffered from cancer since the release of toxic gases from this same thermal power plant.... No one could say anything to comfort me... we will continue to breathe polluted air and get sick."

A few narrators brought up their interaction with the healthcare system. They recount how access and utilization were difficult due to the cost of visits and medicines and/or long wait times.

When we examine the emotional intensity of the stories, for the vast majority emotional intensity is characterized as negative (see Chart 14). Roughly 75% of the storytellers have stated that the emotional impact of their story has been either very negative

or negative. 13.45% stated that the impact of the story has been neutral, while the rest stated that the emotional impact of the story has been positive or very positive.



As a robustness check to the findings presented above, we looked at other answers of narrators regarding their story. Question 2 for example asks respondents to select some of the main topics in their story. Consistent with our findings, 13.2% selected air pollution, 12.1% selected land pollution while 8.1% selected issues with water. Similarly for Question 5, the majority of the respondents stated

that the risks in their stories are connected with air pollution and land pollution. Finally, Question 3 asks the narrators what could be done in order to improve the outcome of their story. Consistent with our results above, 16.85% of respondents stated that housing is top priority, followed by solid waste management (15.45%), natural disaster protection (12.88%) and sanitation (9.41%).

5. Conclusions

Building on the latest wave of a representative household survey of Roma and non-Roma population in six countries of the Western Balkans (Albania, Bosnia-Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo, Montenegro and Serbia) as well as on a selected sample of so-called micro-narratives (or roughly 1,000 respondents from the Western Balkans region), the objective of this analysis was to assess the main determinants of self-rated health of the Roma population, while paying particular attention to environmental determinants. In addition, and consistent with the literature, we have also examined the main determinants of access to health (i.e. unmet need) as it has been shown to have a direct impact on self-rated health. The results of this analysis indicate that, relative to the general population, Roma tend to have significantly worse self-rated health (OR=0.6) and they also have problems with barriers to access to healthcare. The logit modelling analysis employed in this report has suggested that the usual socio-economic and demographic determinants of self-rated health (age, socio-economic standing, employment status, education, locality) appear as significant determinants, especially when the analysis is conducted on the sub-sample of Roma population. More importantly, we do find some scant evidence that some of the environmental variables (e.g. access to sanitation) appear as significant determinants of self-assessed health (however, the explanatory power disappears once country dummies are included in the modelling exercise).

Moreover, respondents living an environment where there has been worsening of the conditions in the healthcare centres tend to consistently report worse health, relative to the rest of the people in the sample. This is particularly important finding, as it ties with the findings of the access to healthcare analysis, but it is also highly relevant from policy point of view as improving the conditions of the healthcare facility in Roma communities could both, facilitate access, which in turn could lead to improved health of this part of the population.

In addition, the results of the quantitative exercise are confirmed by the analysis of the 996 micronarratives. Living conditions in the most immediate environment (e.g. housing) as well as in the community (e.g. pollution) were identified by respondents as the most common environmental issues in the health related micronarratives.

The findings suggest that integrated approaches at the national and local levels aimed at improving the most immediate living conditions (i.e. addressing housing issues, issues of poverty etc.) but also the community related problems (i.e. improving access to sanitation, improving access to clean and safe drinking water as well as improving the overall conditions of the healthcare centres) could go long way towards bettering the health outcomes of the Roma population in the selected countries of the Western Balkans.

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Appendix

Appendix: Table A1.

Table A1. Summary of descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Good/very good health	27,198	0.71	0.45	0	1
Unmet need	6,703	0.29	0.45	0	1
Roma	27,205	0.74	0.44	0	1
Living on less than 1.9 USD per day, PPP	27,205	0.20	0.40	0	1
Living below EU moderate deprivation line	26,908	0.87	0.34	0	1
Living below EU severe deprivation line	26,908	0.79	0.41	0	1
Male	27,205	0.51	0.50	0	1
Age 6 to 17	27,205	0.23	0.42	0	1
Age 18 to 30	27,205	0.22	0.42	0	1
Age 31 to 40	27,205	0.12	0.33	0	1
Age 41 to 50	27,205	0.11	0.32	0	1
Age 51 to 60	27,205	0.10	0.30	0	1
Age 61 to 70	27,205	0.07	0.25	0	1
Age 70 and above	27,205	0.03	0.18	0	1
Married	27,201	0.43	0.50	0	1
Divorced/separated	27,201	0.03	0.16	0	1
Widowed	27,201	0.05	0.22	0	1
Cohabiting	27,201	0.03	0.18	0	1
Orthodox	26,707	0.17	0.38	0	1
Catholic	26,707	0.02	0.12	0	1
Protestant	26,707	0.00	0.07	0	1
Muslim	26,707	0.79	0.41	0	1
Incomplete primary education	27,193	0.17	0.38	0	1
Complete primary education	27,205	0.22	0.41	0	1
Incomplete secondary education	27,193	0.02	0.14	0	1
Complete secondary education	27,193	0.14	0.35	0	1
Post secondary education	27,193	0.01	0.10	0	1
Higher education	27,193	0.02	0.15	0	1
Employed	27,205	0.15	0.36	0	1
Living in city or town	27,205	0.69	0.46	0	1
Chronic illness	27,171	0.10	0.30	0	1
Living in an area with worsened housing	26,591	0.16	0.37	0	1
Living in an area with worsened water supply	26,686	0.15	0.36	0	1
Living in an area with worsened sewage	25,370	0.18	0.38	0	1
Living in an area with worsened health centres	25,273	0.11	0.32	0	1

Annex

Describe what happened...

Please give your experience a title

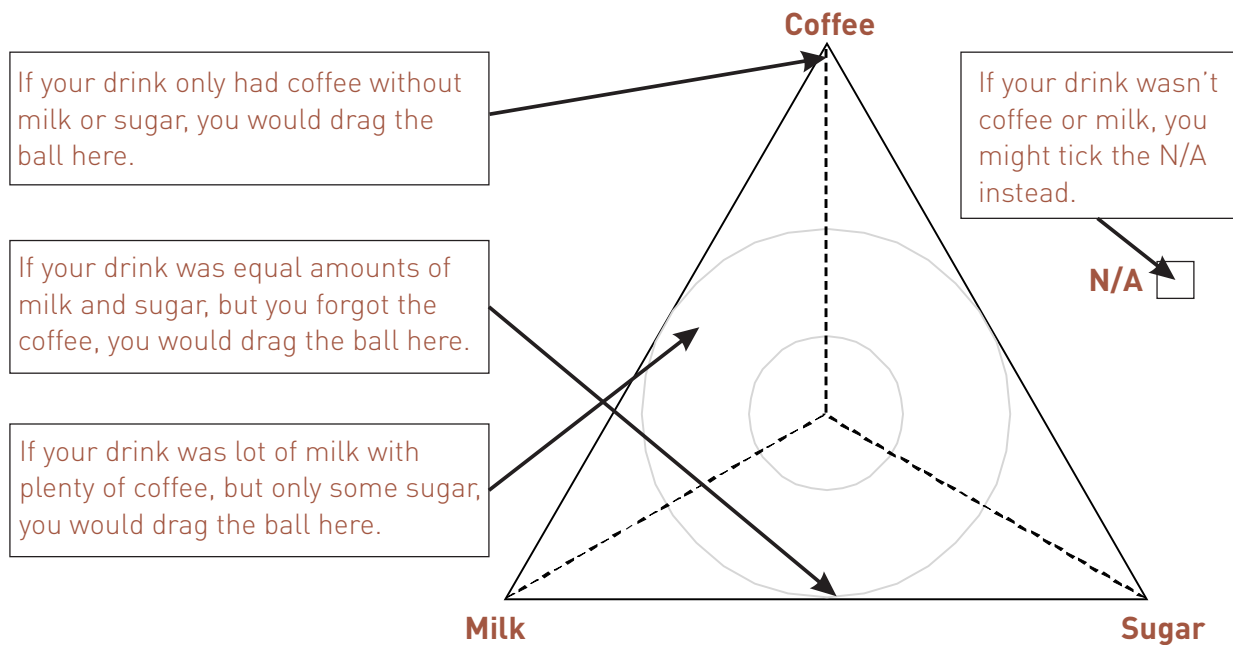
**This is the first set of questions about your experience.
Your perspective is what matters.**

- For the following questions, put a mark in each triangle by moving the ball to a position that best describes the experience you shared.
- The closer the ball is to any one corner, the stronger that element is in the experience you shared.
- If you do not move the ball in a given triangle, then no response will be registered for that question.

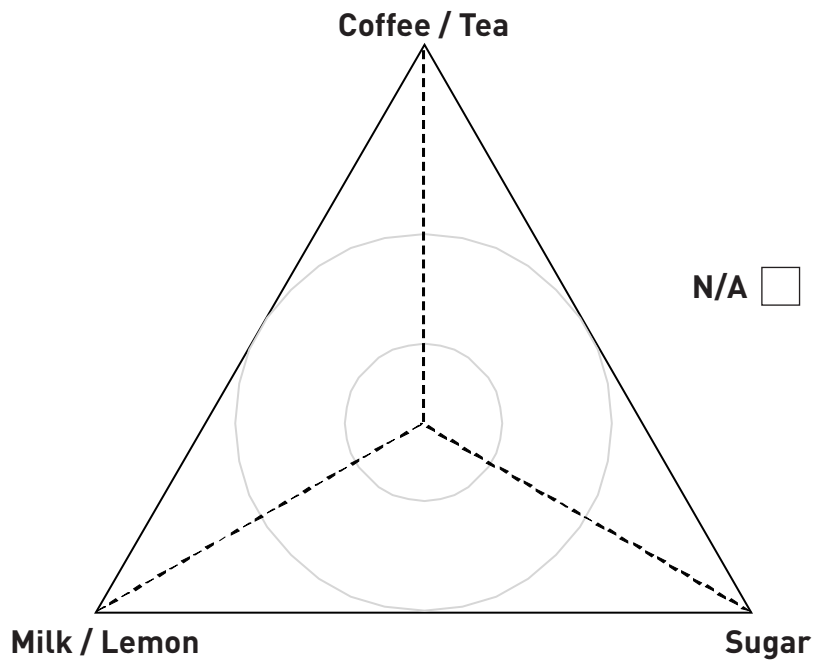
If a triangle does not relate to your experience, check the N/A box.

The example below may help - thinking about how you take your coffee

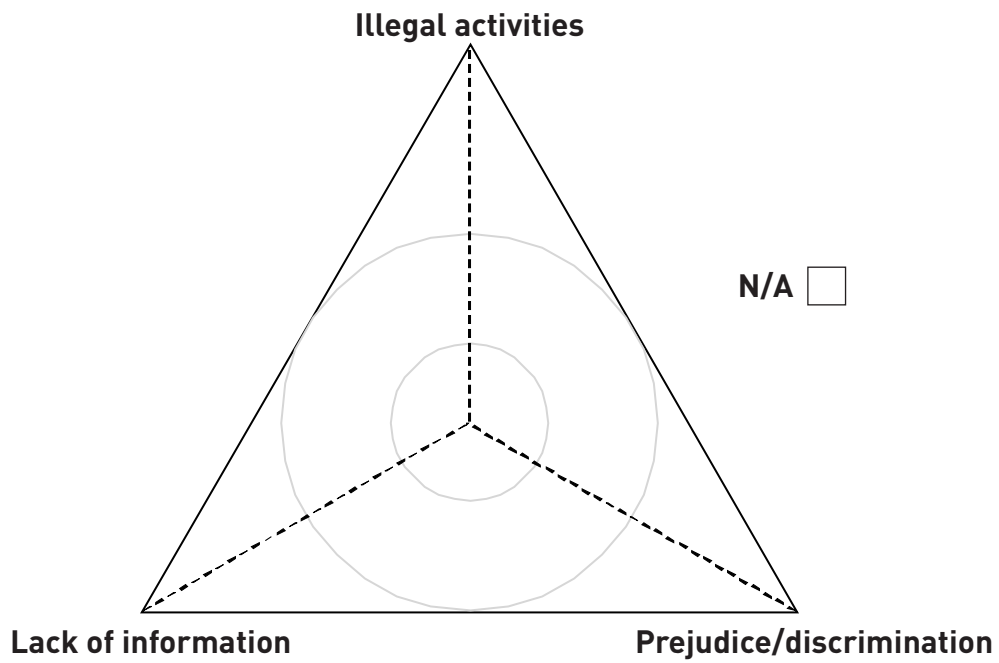
How did you take your last coffee?



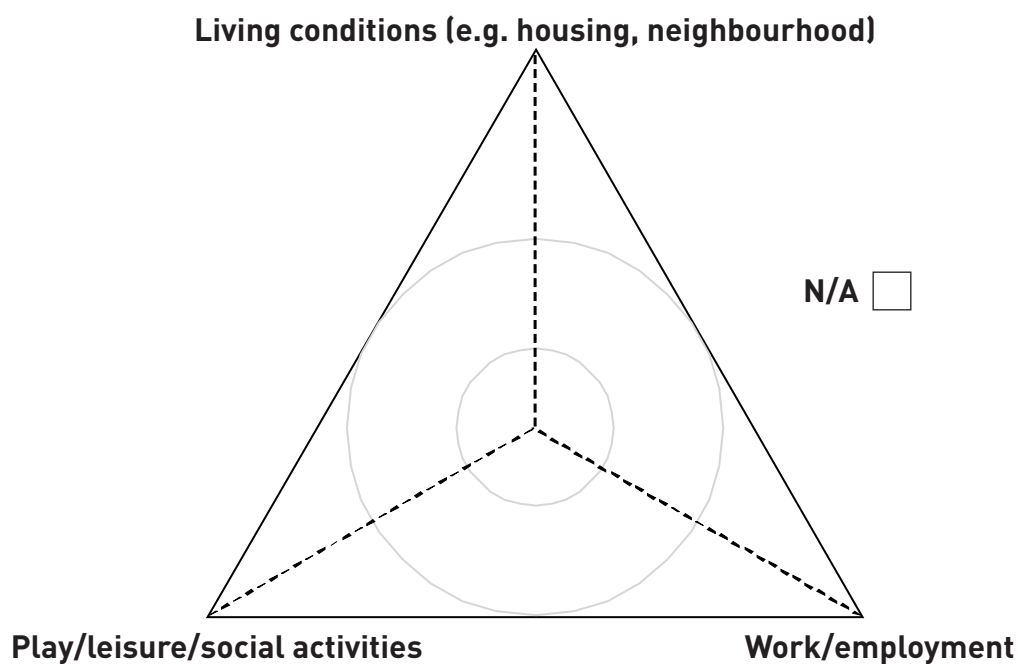
T0. So how was your last cup of coffee /tea?



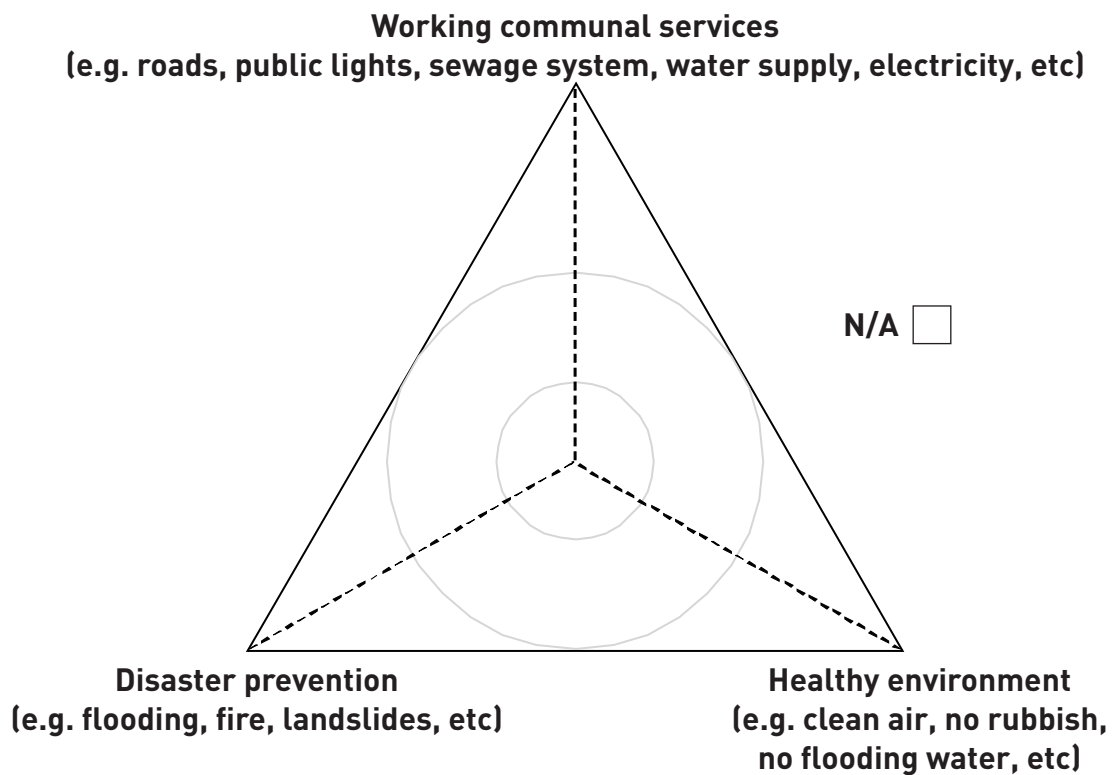
T1. In your example, events happened because of ...



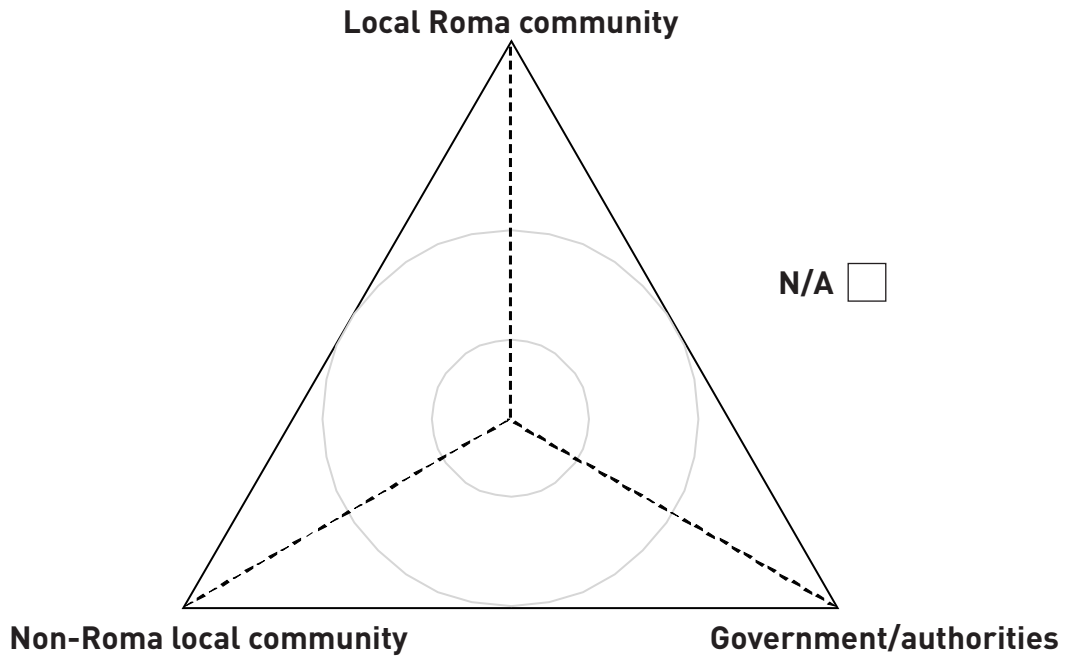
T2. In your example relates to ...



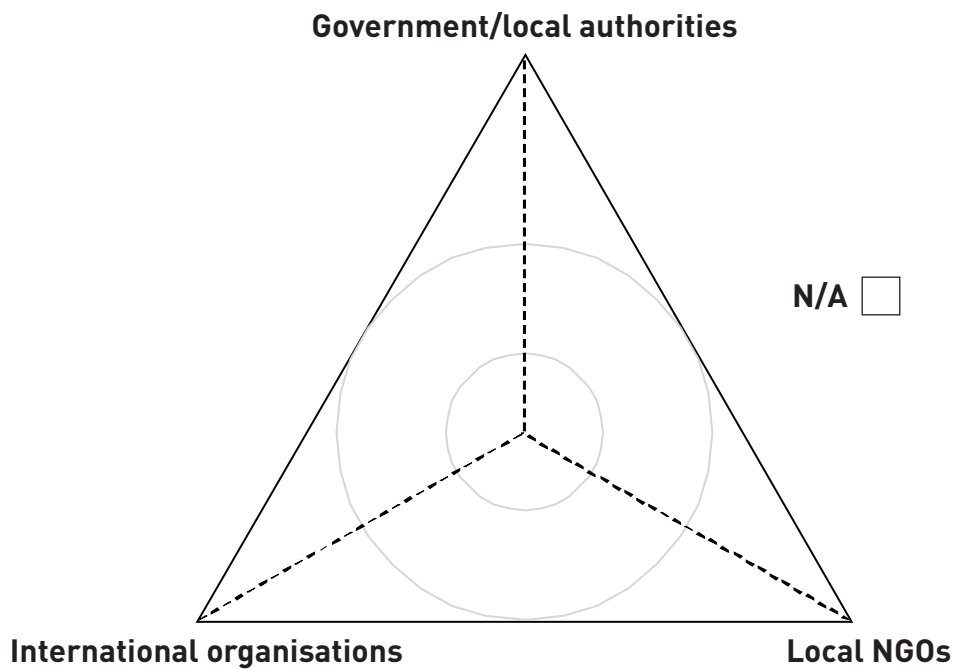
T3. In your example, what mattered was ...



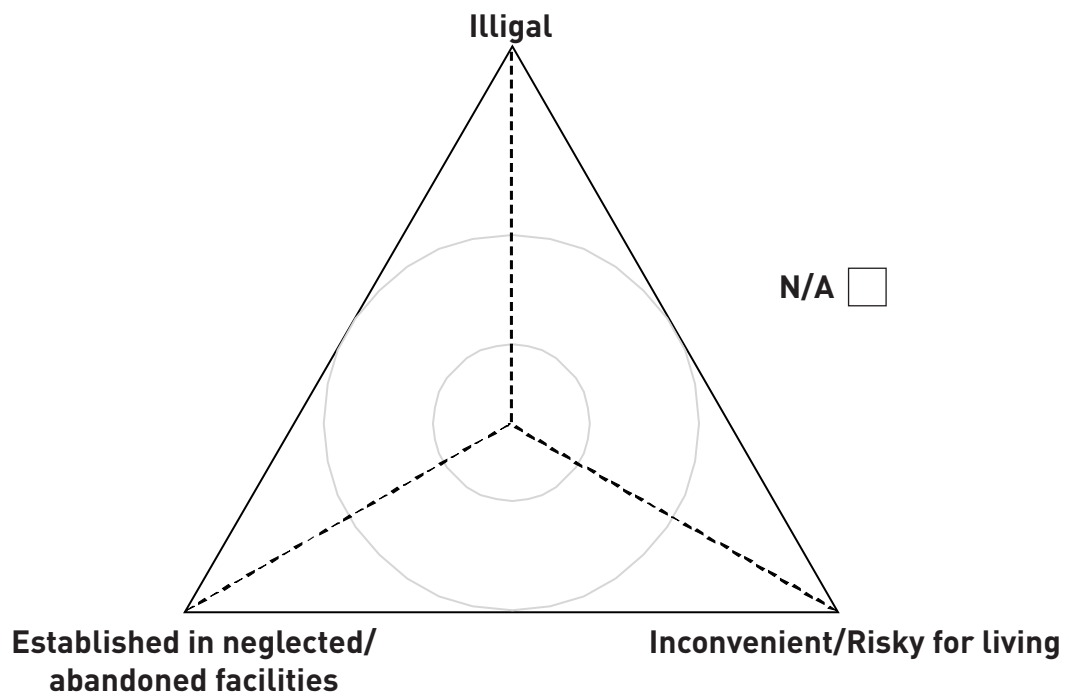
T4. In your example, interactions involved ...



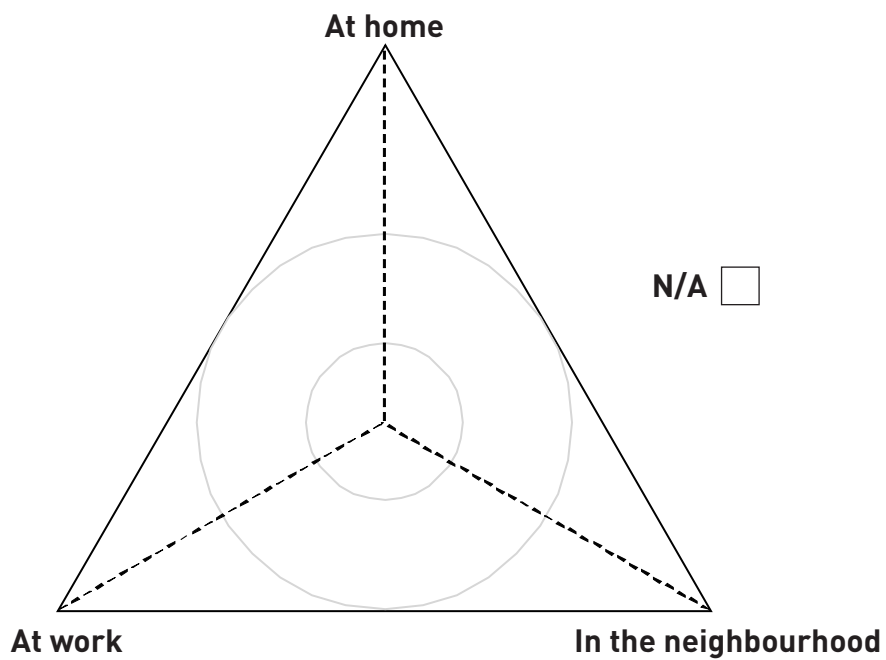
T5. In your example, support (policies, interventions and funding) came from ...



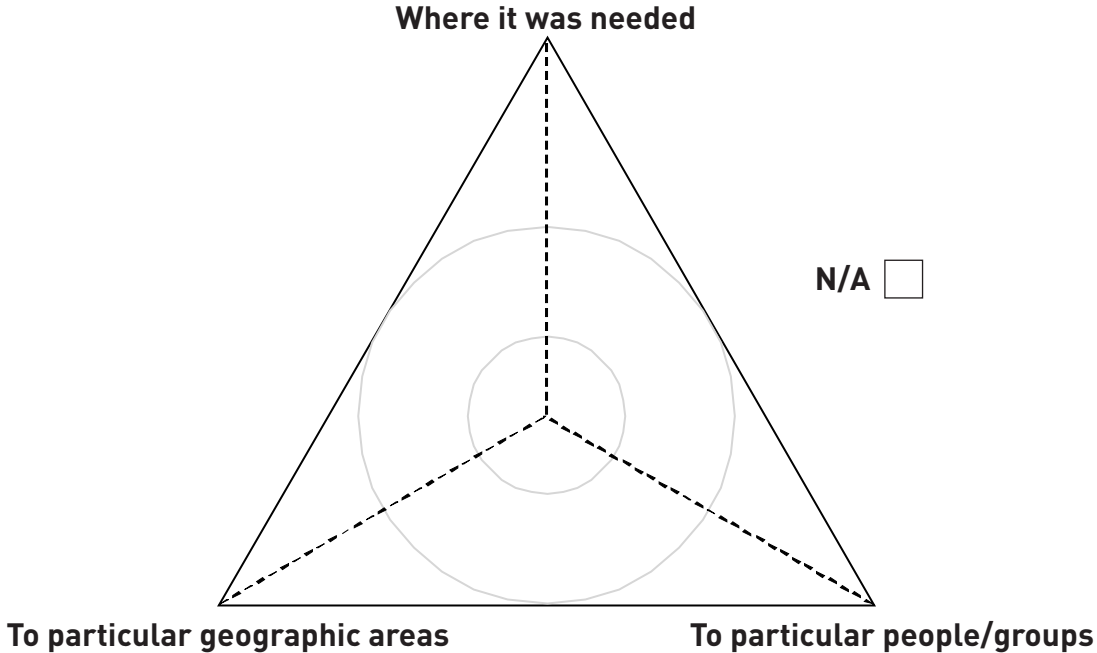
T6. In your example, the settlement was ...



T7. In your example, risks were ...



T8. In your example, investments of the municipality (if any) (e.g. environment and infrastructure) went ...



S1. From the story you have told, what different kinds of impact do you think will occur arising from the events you described? Please move the kinds of impact you think are relevant from the left and place them on the canvas on the right.

1. Economic impact – money, wealth, jobs
2. Health impact – illness, fitness, wellbeing
3. Social/community impact – how people relate to and work with each other
4. Environmental impact – the state and sustainability of the spaces in which we live and work, the natural resources available to us
5. Resilience – better able to adapt to future problems



- x For the following questions, put a mark on each scale at a position that best describes the experience you shared.
- x The closer the mark is to an end, the stronger that element is in the experience you shared.
- x If a scale does not relate to your experience, check the N/A box.

D1, D2. In your example, people wanted ...

To have a good income



N/A

To live in a clean environment

To live in Roma neighbourhood despite poorer living conditions



N/A

Better living conditions but non-Roma neighbourhood

We want to know more about your example...

Q1. How common is this sort of story?

Never before/since

Very rare

Happens sometimes

Quite common

All the time

Q2. The emotional intensity of this story is

Strongly negative

Negative

Neutral

Positive

Strongly positive

Q3. To improve the outcome of the example, people need(select up to 2)...

Potable water

Natural disaster protections

Housing

Sanitation

Education about natural resources

Intercultural dialogue

Drainage

Materials for construction

Integration with local community

Solid waste management

Free legal aid

Other (please tell us)_____

Q4. Your story involves (pick up to 3)...

- | | |
|--|--|
| <input type="checkbox"/> Water | <input type="checkbox"/> Land pollution |
| <input type="checkbox"/> Sanitation | <input type="checkbox"/> Food pollution |
| <input type="checkbox"/> Air pollution | <input type="checkbox"/> Reclamation |
| <input type="checkbox"/> Waste management | <input type="checkbox"/> Natural disaster |
| <input type="checkbox"/> Recycling | <input type="checkbox"/> Preventable mistakes |
| <input type="checkbox"/> Exposure to chemicals | <input type="checkbox"/> Fire |
| <input type="checkbox"/> Access to resources | <input type="checkbox"/> Other (please tell us)_____ |

Q5. The risks in this story (if any) are ...

- | |
|--|
| <input type="checkbox"/> Flood |
| <input type="checkbox"/> Landslide |
| <input type="checkbox"/> Fire |
| <input type="checkbox"/> Industry-based pollution |
| <input type="checkbox"/> Air pollution |
| <input type="checkbox"/> Water pollution |
| <input type="checkbox"/> Land pollution |
| <input type="checkbox"/> Other (please tell us)_____ |

Q6. To improve the outcome of the example, people need (select up to 3)..

- | | | |
|--|--|---|
| <input type="checkbox"/> Health awareness | <input type="checkbox"/> Better waste management | <input type="checkbox"/> Clean water supplies |
| <input type="checkbox"/> Better infrastructure | <input type="checkbox"/> Public transportation | <input type="checkbox"/> Sanitation |
| <input type="checkbox"/> Awareness of civic duty | <input type="checkbox"/> Improved ownership rights | <input type="checkbox"/> Training in animal treatment |
| <input type="checkbox"/> Environmental education | <input type="checkbox"/> Risk prevention | <input type="checkbox"/> Other (please tell us)_____ |

Finally, we want to know some things about you...

DQ1. How old are you?

<input type="checkbox"/> 15-19	<input type="checkbox"/> 20-24
<input type="checkbox"/> 25-29	<input type="checkbox"/> 30-34
<input type="checkbox"/> 35-39	<input type="checkbox"/> 40-44
<input type="checkbox"/> 45-49	<input type="checkbox"/> 50-54
<input type="checkbox"/> 55-59	<input type="checkbox"/> 60 and over
<input type="checkbox"/> Prefer not to answer	

DQ3. Are you ...

<input type="checkbox"/> Employed
<input type="checkbox"/> Unemployed, looking for work
<input type="checkbox"/> Unemployed, not looking for work
<input type="checkbox"/> Prefer not to answer

DQ5. What is the income of your household?

<input type="checkbox"/> Higher than others living in my settlement
<input type="checkbox"/> More or less the same as others living in my settlement
<input type="checkbox"/> Lower than others living in my settlement
<input type="checkbox"/> Prefer not to answer

DQ2. Gender

Male	<input type="checkbox"/>	Female	<input type="checkbox"/>
<input type="checkbox"/> Prefer not to answer			

DQ7. Are you currently? Select one

Living together, not married	<input type="checkbox"/>	Married	<input type="checkbox"/>
Separated	<input type="checkbox"/>	Divorced	<input type="checkbox"/>
Single	<input type="checkbox"/>	Widowed	<input type="checkbox"/>
<input type="checkbox"/> Prefer not to answer			

DQ6. What is the highest education level you have attained?

<input type="checkbox"/> None/Incomplete lower basic	<input type="checkbox"/> Secondary vocational/technical
<input type="checkbox"/> Lower basic (1-4)	<input type="checkbox"/> Associate (2 yr) College
<input type="checkbox"/> Upper basic (5-8)	<input type="checkbox"/> Incomplete university
<input type="checkbox"/> Incomplete secondary general	<input type="checkbox"/> Bachelor
<input type="checkbox"/> Secondary general	<input type="checkbox"/> Masters
<input type="checkbox"/> Incomplete secondary vocational/technical	<input type="checkbox"/> PhD/Specialist
<input type="checkbox"/> Incomplete special school disabled	
<input type="checkbox"/> Prefer not to answer	

DQ8. Your story is anonymous and it is impossible for anyone to identify you from this survey. However, if you would like your story kept confidential so that no-one else can read it, please tick here:

To be filled by the collector

C0. Collector ID:		C5. This settlement was in a ...		C6. This settlement includes ...	
C1. Collection date (dd.mm.yy)		<input type="checkbox"/> Segregated area - regulated <input type="checkbox"/> Segregated area - unregulated <input type="checkbox"/> Mixed neighbourhood		<input type="checkbox"/> Canal <input type="checkbox"/> River/stream <input type="checkbox"/> Woodland <input type="checkbox"/> Agricultural land <input type="checkbox"/> Mine (abandoned) <input type="checkbox"/> Mine (active) <input type="checkbox"/> Industry	
C3 Collection country		C7. This settlement was in a ...			
<input type="checkbox"/> Albania	<input type="checkbox"/> Macedonia	<input type="checkbox"/> Center of town/city <input type="checkbox"/> Outskirts of town/city <input type="checkbox"/> Rural area			
<input type="checkbox"/> Bosnia and Herzegovina	<input type="checkbox"/> Montenegro				
<input type="checkbox"/> Kosovo	<input type="checkbox"/> Serbia				
C4 Collection district		C8. This settlement has access to ...			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Sewage services <input type="checkbox"/> Water <input type="checkbox"/> Electricity <input type="checkbox"/> Organised, regular waste collections <input type="checkbox"/> Fire hydrants <input type="checkbox"/> Gas <input type="checkbox"/> Public transport		<input type="checkbox"/> Health centre/workers <input type="checkbox"/> School <input type="checkbox"/> Municipal authorities <input type="checkbox"/> Employment centre <input type="checkbox"/> Sports facilities <input type="checkbox"/> Other (please tell us) _____	
C9. How was the story?					
<input type="checkbox"/> Must read - positive <input type="checkbox"/> Must read - negative <input type="checkbox"/> Might be good to read <input type="checkbox"/> Some interest, but not crucial <input type="checkbox"/> Ignore it					
C10. Collector's notes (was someone else present, were answers influenced by others, other considerations, etc)					
<input type="text"/> <input type="text"/> <input type="text"/>					

To be filled by the additional translation required:


English	Collection language
Next	
Previous	
Please answer:	
Please select no more than ... items	
To save your entry click "SAVE" below	
SAVE	
Please wait for a confirmation that your entry has been saved. Please acknowledge the confirmation by clicking "OK" when prompted. Thank you!	
Please wait while we save your story. This may take some time.	
About your example	
Finally, we want to know some things about you...	
To be filled by collector	
Short tem impact	
Long term impact	
Short term impact	
Very positive impact	
Very negative impact	



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