

Experienced Impacts of Mining in Sodankylä
Follow-up Study
2025

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Contents

1 Introduction	1
2 Research data and methods.....	3
2.1 Profile of survey respondents.....	4
3 Sodankylä in general.....	7
4 Experienced impacts of mining activities.....	10
4.1 Social impacts	10
4.2 Environmental impacts	16
5 Social license to operate for mining activities in Sodankylä	22
5.1 Acceptance of mining activities	22
5.2 Regulatory control and participation in decision-making	26
5.3 Project-specific assessment.....	29
6 Conclusion.....	32
7 References.....	34

1 Introduction

A regular follow-up survey on the experienced impacts of mining activities in the municipality of Sodankylä was conducted for the fifth time in spring 2025. The aim of the survey was to examine the views of local residents on the experienced impacts of mining activities, for example on services, the atmosphere in the municipality, the attractiveness of the municipality, and the environment. In addition, the survey examined respondents' views on the regulatory control of mines, the activities of the authorities, the activities of mining companies, the current state of Sodankylä in general, and the future of the municipality. This report examines the results of the survey both independently and in comparison with the results of previous years' surveys. The survey has previously been conducted in 2016, 2018, 2021, and 2023. This time, there were a total of 226 respondents to the survey, which is fewer than in 2023. On the other hand, there were more respondents than in 2016 and 2018.

The first two surveys (Kuisma & Suopajärvi 2017; Saariniemi 2018) were conducted as part of the REGINA project, in which the municipality of Sodankylä and the University of Lapland participated. The project was led by the Nordic research institute Nordregio and funded by the Northern Periphery and Arctic Programme. The 2016 survey was conducted as a random sample postal survey, and the 2018 follow-up survey was conducted as an online survey. In 2021 and 2023, the surveys were also conducted as online surveys (Tulilehto & Suopajärvi 2021, 2023). The research reports based on the surveys served as the basis for the Sodankylä municipality's Mining Programme for 2018–2021, which also included the implementation of follow-up surveys at regular intervals as one of its measures (Sodankylä municipality 2018). A new Mining Programme is currently being prepared in the municipality (Sompio-lehti 4.5.2025).

Impact assessment can be divided into social impact assessment (SIA) and environmental impact assessment (EIA). Although this report deals with environmental impacts, it is not equivalent to the EIA prepared by the authorities. The statutory EIA is carried out on a non-recurring basis during the project planning phase. Furthermore, as in the previous reports, the focus is on people's experiences rather than absolute changes in the environment. The assessment in this report looks at whether there have been any experienced impacts, what they have been like, and what they are expected to be like in the future.

Based on research literature, recurring SIA is beneficial for mining companies, municipalities, and local people (Suopajärvi & Sairinen 2016). SIA makes it possible to examine the intended and unintended impacts of mining operations (Vanclay & Esteves 2024) and to obtain information about possible changes in the views of residents in the municipality. In order to adequately highlight the local impacts, the impacts have been assessed on a regional basis, following the division used in previous surveys into the municipal centre, villages in the vicinity of the planned or existing mining area, and other villages.

Although mines are part of global raw material flows, their operations are local. They do not only operate in specific locations, but in places that have numerous experiential meanings (Cresswell 2015). A common example of a place is home, to which meanings include strong emotional ties. On the other hand, uninhabited locations can also be places. For example, berry mires, mushroom forests and fishing spots are places whose value is linked not only to the resources they offer but also to the intrinsic value of nature. Nature itself can be an important place for many people. People may be dependent on it, attached to it, or it may be part of their identity (Jorgensen & Stedman 2006; Raymond et al. 2010).

Mines are also places. In the case of Sodankylä, the Kevitsa area is an example of a place that has been known for its mine since the early 2010s. The Kevitsa mine shows that places are not static, but constantly changing over time (Massey 2008; Cresswell 2015). This challenges the emotional ties associated with a place that have formed around the place as it has come to be known. It can be difficult to accept and adapt to change, especially when it conflicts with perceptions of continuity and permanence (Kortetmäki et al. 2025).

The report presents the survey results mainly as frequency distributions. Cause-and-effect relationships are not examined, as this would require a more thorough statistical and qualitative analysis. The report consists of four sections and a summary. The section following the introduction describes the data and research methods used and presents basic information about the respondent group. Section three describes the respondents' views on Sodankylä in general. Section four reviews the experienced impacts of mining activities on services, attractiveness, infrastructure, livelihoods, and the natural environment in separate subsections. Section five discusses the social license to operate for mining activities in Sodankylä, regulatory oversight, people's perceived opportunity to participate in decision-making concerning the mining sector, and companies' social license to operate. The section also describes the Kevitsa, Ikkari, and Sakatti mining projects on a project-by-project basis.

In the text, "agree" refers to the group of respondents who answered that they completely agree or somewhat agree with the statement presented. Similarly, those who disagree refer to the group of respondents who responded that they completely disagree or somewhat disagree with the statement. The percentages have been rounded to the nearest whole number in the text.

The municipality of Sodankylä has taken the initiative in this new study, as the information it produces will support the updating of the municipality's Mining Programme. The study has been funded by the mining companies AA Sakatti Mining Oy, Boliden Kevitsa Oy and Rupert Exploration Finland Oy.

2 Research data and methods

The survey was conducted as an open online survey on the Webropol platform between April 25, 2025, and June 8, 2025. A link to the survey was posted on the Sodankylä municipality website and promoted on the municipality's social media channels on Facebook and Instagram. A news release about the survey was also published in the local Sompio newspaper in online news (28.4.2025) and in the print edition on April 30, 2025.

The survey was designed to correspond to previous years' surveys to ensure comparability. However, a few changes were made to the survey in contrast to previous years. The question about environmental concerns was condensed into a single statement, since experienced and concrete environmental impacts are asked about in detailed statements, and environmental concerns are a broad definition in themselves – they can refer to concerns about the local environment as well as the state of the planet, for example due to the effects of climate change. Statements concerning mineral exploration and mining in Natura sites were given their own section due to the topicality of the subject. In connection with the statements, respondents were given the opportunity to explain their opinions in their own words. In addition to these changes, the order of the questions was made more logical.

A total of 227 responses to the survey were received. One respondent did not consent to the processing of their personal data, so the material covered in this report contains a total of 226 responses. Two respondents had only answered the question about mineral exploration in Natura sites and the questions concerning the respondent's background information.

Frequency distributions were created from the survey responses, which are presented in this report as bar charts. In addition, sum variables were created from the questions, which were used to examine questions related to the same topic as a whole. The results are presented both independently and in comparison with the results of previous years' surveys. The qualitative data consisting of free-form responses (open-ended responses) written by the respondents comprises a total of approximately 40 pages (10 490 words) of text. The quotations in the report have been translated into English, but have not been edited in any other way. Each quotation is accompanied by the relevant question and the respondent's number.

The results of the report cannot be generalised to the population statistically, as generalisation would require randomisation of the respondent group (Horner 2008, Lehdonvirta et al. 2021). The survey therefore represents those who wanted to respond or were able to respond to the online survey. As in previous years' surveys, it has not been possible to influence the selection of the respondent group when using the data collection method in question. However, the reliability of the method is supported by the fact that respondents were asked a wide range of questions about their background. In light of this information and taking it into account, the results of the report can be seen as providing an indication of how residents in Sodankylä, interested in the subject feel about the impact of mining activities in their home municipality.

2.1 Profile of survey respondents

Of the respondents, 222 reported their year of birth. As in previous surveys, respondents aged 30–59 were overrepresented. The percentage of respondents aged 16–29 and 60–69, on the other hand, is close to representativeness. There are significantly fewer respondents over the age of 70 than in the municipality of Sodankylä (Statistics Finland 2024). The proportions of the respondent group include 19 respondents who stated that they do not live permanently in Sodankylä.

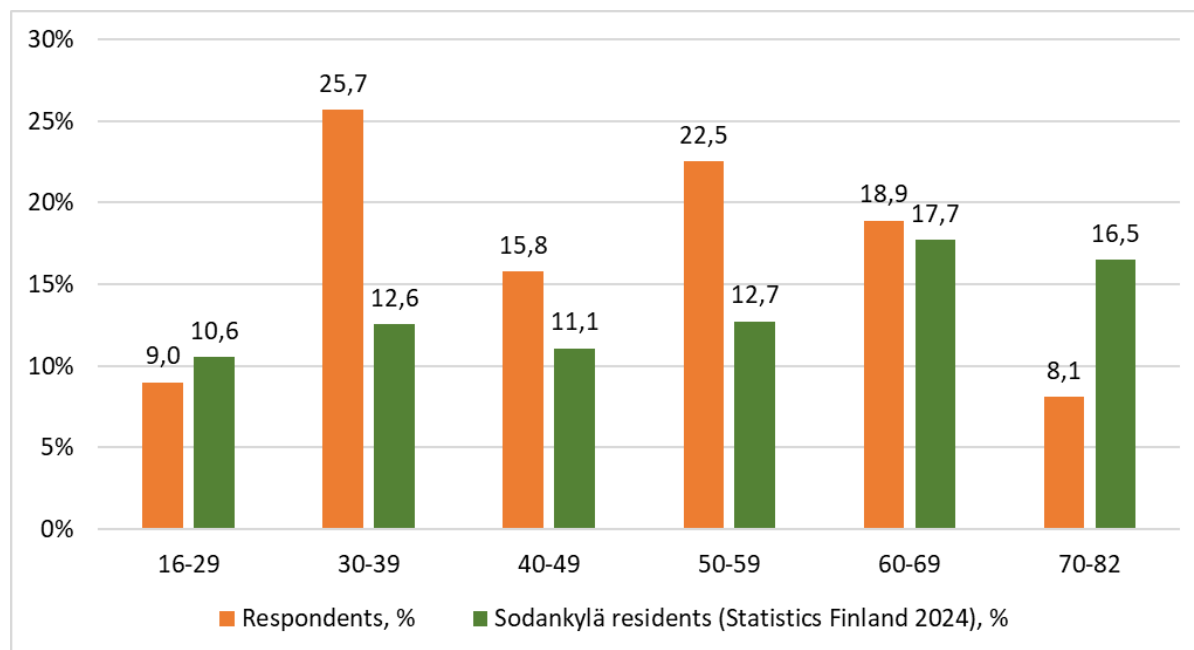


Figure 1. Age distribution of the respondents (n=222) and the residents of Sodankylä (n=6596).

Of the 213 respondents who indicated their gender, 49% were women, 50% were men and 1% were non-binary. A total of 225 respondents indicated their life situation. A clear majority (79%) were employed. Pensioners in particular were underrepresented, as in previous years' surveys. However, the relative proportion of pensioners was higher than in the 2021 and 2023 surveys (Statistics Finland 2023a).

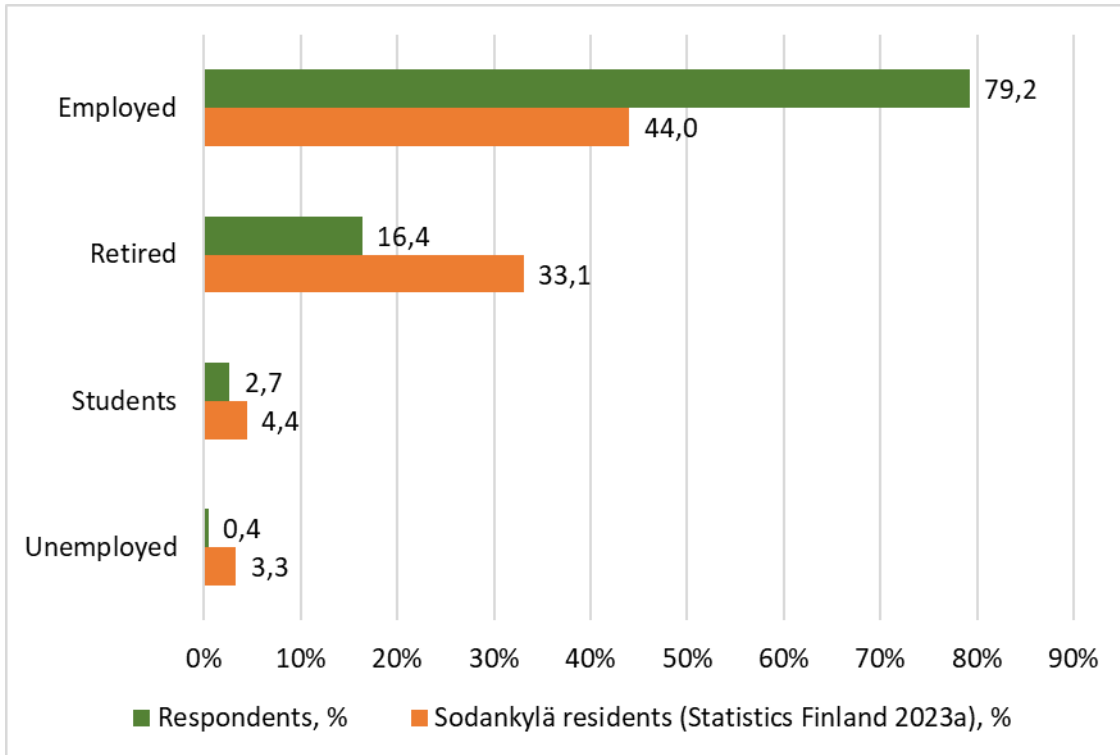


Figure 2. Respondents and Sodankylä residents by life situation.

The percentage of respondents living in the municipal centre increased the most compared to previous years. The percentage of respondents from villages near the mining projects (Jeesiö, Kelujärvi, Kersilö, Moskuvaara, Petkula, Puolakkavaara, Rajala, Sattanen, Siurunmaa) also increased slightly. The proportion of respondents living in other villages decreased significantly. In previous survey years, the proportion has been 13–21%, but in the current survey, it was only 10%. On the other hand, the proportion of respondents who do not live permanently in the municipality has grown steadily since 2021, reaching 9% in this survey.

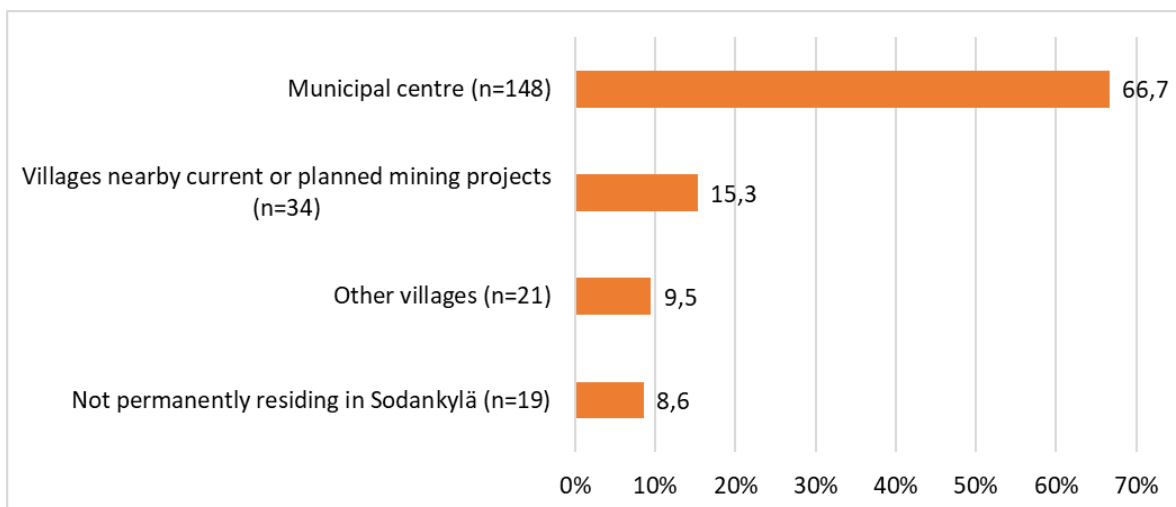


Figure 3. Respondents by residence location.

Respondents have lived in the municipality for an average of 29 years, and 39% said they plan to live there for more than 20 years. About a quarter (26%) of respondents have lived in the municipality for less than ten years, and about half of them (49%) plan to live there for no more than the next ten years.

Nearly one-third (30%) of respondents worked in the mineral exploration and mining sector. According to Statistics Finland, 14% of Sodankylä residents work in the mining and quarrying sector (Statistics Finland 2023b). Employees in agriculture, forestry, and reindeer herding, education, as well as research and development were also overrepresented. The respondents have been examined as a whole group consisting of municipal residents. In a few sections, consideration has been given to the fact that those working in the mineral exploration and mining sector are relatively overrepresented in the respondent group.

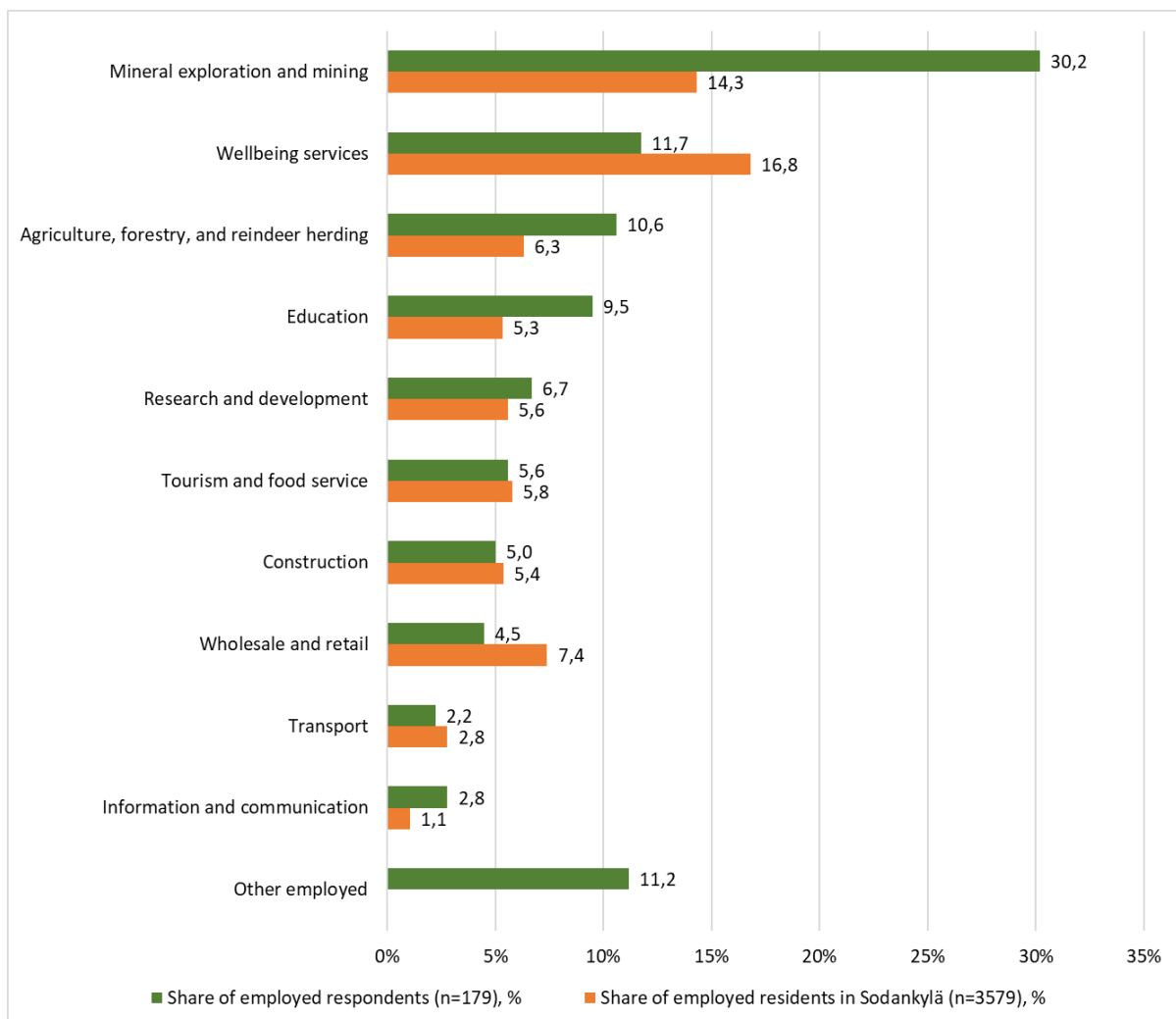


Figure 4. Employed respondents and employed population in Sodankylä.

The respondent group for this survey differs from previous surveys in that the relative proportion of people aged 30–39, 60–69, employed, and living in the municipal centre is higher than in previous surveys. In addition, the relative proportion of pensioners is the largest since the 2018 survey.

3 Sodankylä in general

Compared to the 2021 and 2023 surveys, the respondents were significantly more positive about the municipality's atmosphere, attractiveness, image, and opportunities for participation and influence. The municipality was rated as attractive in terms of living conditions by 82% of the respondents. This rating increased by almost 20 percentage points from the survey conducted two years ago. Similarly, nearly 75% of the respondents rated the municipality's atmosphere as active. In the 2021 and 2023 surveys, less than 50% agreed with this statement. In the open-ended responses, diverse economic structure explains the experience of attractiveness and active atmosphere:

"The village centre could use a bit of an update, but the diverse economic structure has kept the village vibrant." (How do you see Sodankylä, R5)

The image of the municipality was also rated significantly more positively than in the two previous survey years. The image was rated as positive by 67% of the respondents, whereas in 2021 and 2023, less than half of the respondents rated the image as positive. Sodankylä was once again rated as a safe place to live, and only a very small proportion disagreed with this statement. Almost 80% of the respondents considered the environment to be clean and tidy. This proportion is slightly higher than in the 2021 and 2023 surveys, but there is no significant difference from the results of previous years.

As for the social networks, a negative trend can be observed. Although a clear majority of the respondents (72%) considered their social network to be good, as in the two previous survey years, in 2018, the proportion was 81%. Conversely, the proportion of those who disagreed with the statement has grown from one survey to the next. In 2021, the proportion of those who disagreed was 13%, and in 2023, the proportion was 18%. Now, nearly 20% disagreed with the statement.

Although the opportunity to participate in municipal affairs was again rated as rather poor, participation was perceived as easier than in 2021 and 2023. Slightly more than half felt that their opportunities for participation and influence were good, whereas in 2023 only one-third of the respondents felt this way. The proportion of those who strongly agreed also increased by a total of ten percentage points compared to the 2023 survey. About a quarter (24%) of the respondents felt that their opportunities to participate and influence were poor.

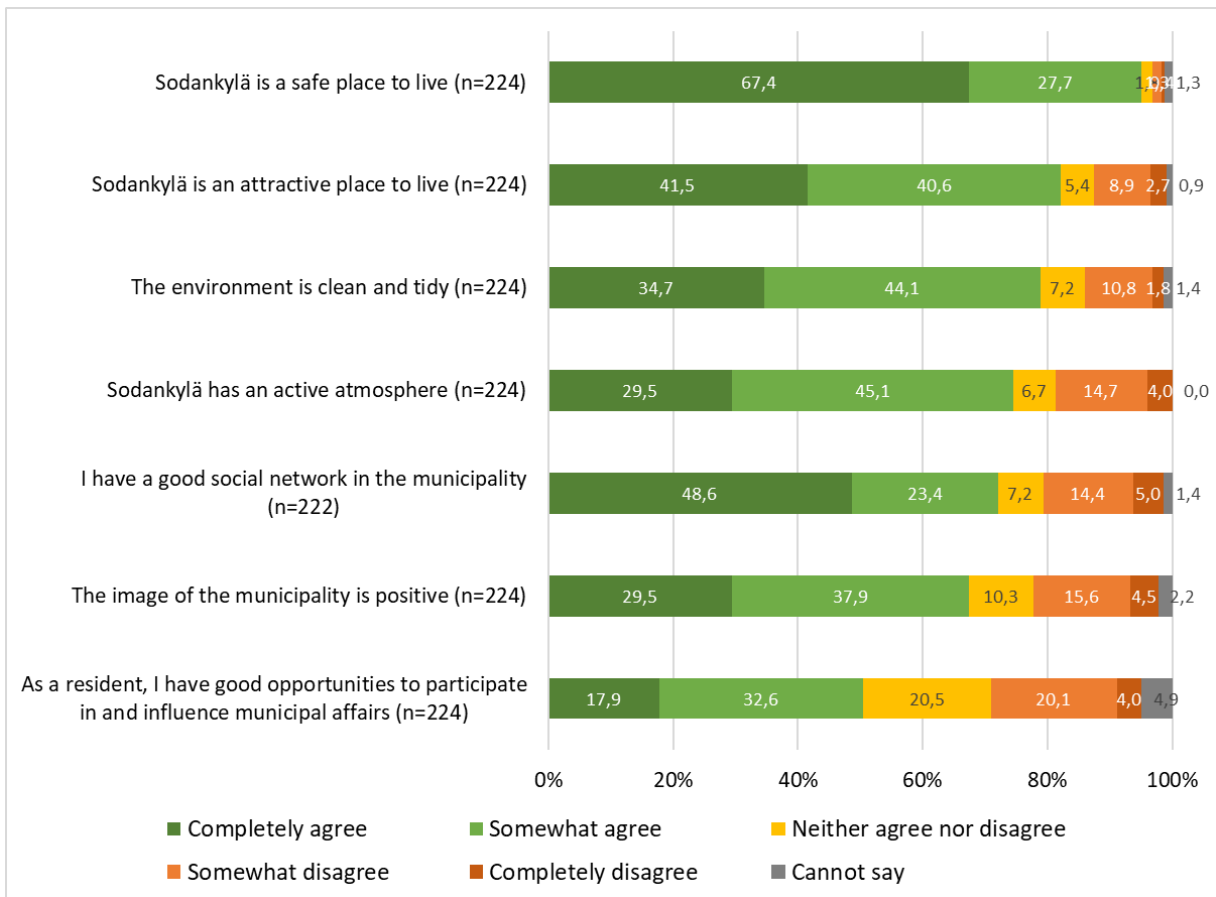


Figure 5. General attractiveness.

Sixty percent of the respondents were satisfied with the public services provided by the municipality, and nearly half (47%) of the respondents were satisfied with the private services available. There has been no significant change in satisfaction levels since the 2023 survey, but the proportion of dissatisfied respondents is significantly lower than in previous surveys. Nine percent of the respondents were dissatisfied with public services and 15% were dissatisfied with private services. In 2023, the corresponding figures were 36% for public services and 39% for private services. Attitudes toward municipal services may be influenced by the so-called health and social services reform, in which responsibility for organising health care, rescue, and social services was transferred to welfare regions on January 1, 2023 (Ministry of Social Affairs and Health 2024). After the reform, attitudes toward the services provided by one's own municipality may become more positive.

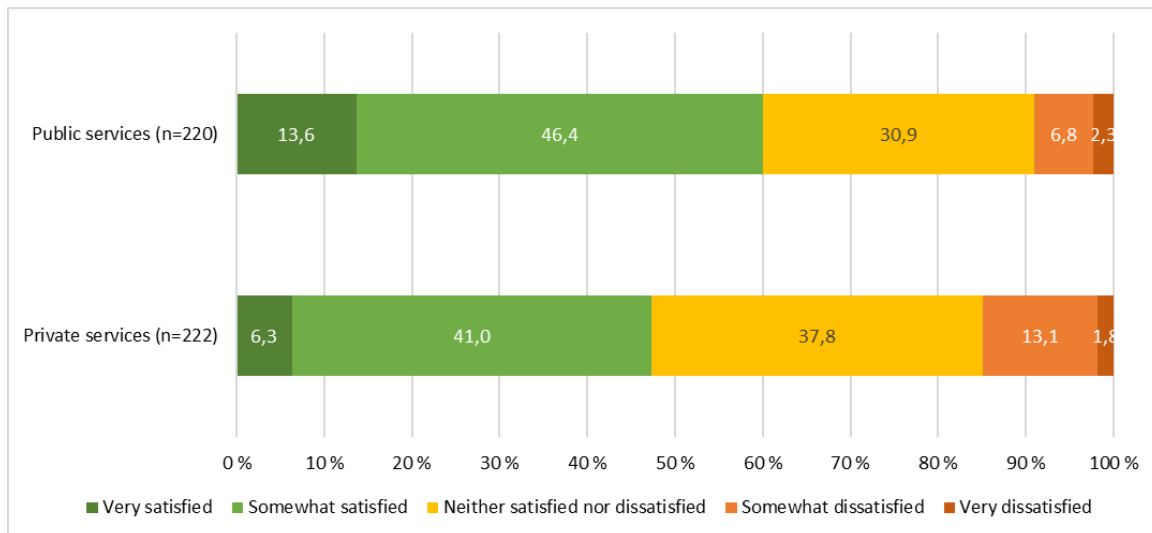


Figure 6. Satisfaction in the supply of services.

When asked how they generally see Sodankylä, the respondents had mixed opinions. Many respondents described the municipality as close to nature, pleasant, developing, safe, peaceful, vibrant, and beautiful.

"A lively, vibrant, efficient village in the middle of Lapland. Everything is close by and you can find everything you need here. Things get done." (How do you see Sodankylä, R34)

On the other hand, the municipality was also described as stagnant, quiet, and aging. One respondent described Sodankylä as "a battlefield of many conflicts." The open-ended responses also raised concerns about the future of the municipality and the availability of housing.

"Peaceful and safe, but also a bit limited and kind of stuck in its ways." (How do you see Sodankylä, R45)

The respondents were also asked to share their views on what Sodankylä will look like in 2050 and what is the best or worst thing that could happen to the municipality. The respondents felt that, at its best, Sodankylä would be a vibrant, nature-oriented, economically diverse, and safe municipality in 2050. Housing was mentioned in many responses, with respondents hoping that there would be sufficient high-quality, affordable housing in the future.

"Sodankylä would continue to be a vibrant place with a good community spirit. The economic structure would be diverse and the unemployment rate low. Young people would want to stay and move to the area." (What is the best thing that could happen to Sodankylä, R176)

The housing situation was highlighted when the respondents described what the municipality would look like at its worst in 2050. In addition to the poor housing situation, many respondents considered environmental pollution, particularly water pollution, to be the worst threat. On the other hand, the end of mining was also considered a threat that would lead to the decline of the municipality.

"Excessive mining and insufficient housing production at the same time. Housing prices would spiral out of control and no one would want to move here permanently. Municipal funds would be used recklessly, and services would have to be cut. Damage to the municipality's reputation due to unethical mining." (What is the worst thing that could happen to Sodankylä, R7).

The provision and development of services were also prominent when the respondents were asked what would be the best and worst things that could happen to Sodankylä by 2050. A reduction in services or their transfer to other municipalities is seen as a threat, and it was hoped that services would remain within the municipality. Services were also desired outside the municipal centre.

4 Experienced impacts of mining activities

Instead of the direct impacts of mining, this report discusses the experienced impacts of mining activities, as experiences of the impacts caused by mining activities can vary greatly. It may depend, for example, on how strongly the local community has been involved in the mining activities or the extent to which the activities have social acceptance. The first subsection examines the social impacts on services, attractiveness, infrastructure, and livelihoods, among other things. The latter subsection examines the impacts not only from the perspective of the natural environment, but also in terms of recreational use of nature.

4.1 Social impacts

The impact of mining activities on the municipality's economic situation was assessed positively by 88% of the respondents. The impact has been measured since 2021, and the number of positive assessments has increased from one survey to the next. The proportion of positive assessments is 16 percentage points higher than in the 2023 survey and 35 percentage points higher than in the 2021 survey. The high proportion of positive assessments may be influenced by the Act on a Mined Minerals Tax (314/2023), which came into force on January 1, 2024, and obliges operators extracting mining minerals to pay tax to the municipality where the mine is located. The municipality of Sodankylä received 4.4 million euros in tax revenue for 2024 (Kuntalehti 27.3.2025).

The impact of mining activities on work and career opportunities and educational opportunities was assessed more positively than in the 2023 survey, but similarly to the 2021 survey. Of the respondents, 82% felt that mining activities have a positive impact on work and career opportunities. In 2023, 11 percentage points fewer respondents felt that the impact was positive.

The impact on educational opportunities was positively evaluated by 59% of the respondents, although nearly one-third (27%) believe that mining activities have no impact on this. The proportion of positive assessments is significantly higher than in 2023, when 43% believed

that mining activities have a positive impact on educational opportunities. At that time, around one third (32%) of the respondents also believed that there is no impact.

Of the respondents, 71% believe that mining activities have a positive impact on public services. Correspondingly, a very small proportion believe that the impact is negative. An equal proportion (71%) also consider the impact on private service provision to be positive. There has been a clear change in the number of positive assessments compared to previous survey years; the last time the impact was assessed as positively was in the 2016 survey. The open-ended responses also indicated that mining activities strengthen the provision of local services, although the impact was found to be uneven between the municipal centre and the villages.

Of the respondents, 59% felt that mining activities have a positive impact on the municipality's image. Compared to the 2023 survey, there were slightly more positive assessments and slightly fewer negative ones. However, the differences compared to the previous survey are quite small. The impact of mining activities on the attractiveness of the municipality, the atmosphere, and building social networks was also assessed quite positively. Between 50 and 60 percent of the respondents considered the impact to be positive in each case. Nearly one-third (28%) thought that mining activities have a negative impact on the atmosphere in the municipality, which may be related to differing opinions on mining. Similarly, nearly one-third of the respondents (29%) felt that mining activities have no impact on the creation of social networks.

Despite the heavy traffic caused by mining activities, 40% of the respondents rated the impact of mining activities on the condition of streets and roads as positive. The proportion of positive assessments is the highest since the 2016 survey, when 45% of the respondents assessed the impact as positive. Approximately 27% of the respondents felt that mining activities had no impact on the condition of streets and roads. Similarly, 27% considered the impact to be negative, which is close to the proportion in previous years' surveys. In the open-ended responses, the traffic from the Kevitsa mine was pointed out to deteriorate the road network, and the condition of the road leading to the Ikkari area was also highlighted.

"The traffic on the highway number 4 north of the village is absolutely appalling and life-threatening for people and animals, especially reindeer" (Have mining activities had an impact on your industry or livelihood, R126).

The most negative assessments were again given to the impact of mining activities on the availability, quality, and cost of apartments and property. In terms of quality, the impacts were assessed slightly more positively than in the 2023 survey, with 35 percent of the respondents giving a negative assessment and 23 percent giving a positive assessment. However, one respondent stated that it was difficult to answer the question about the quality of apartments:

"New homes have been built, so there has been a positive impact, but the demand for housing is high, so access has deteriorated." (Have mining activities had an impact on your industry or livelihood, R159)

The impact of mining activities on the availability of apartments and property was assessed in the same way as in 2023, with negative assessments accounting for 61%. On the other hand, the impact on cost of housing was assessed more negatively than before. This was the only question concerning social impacts where the proportion of positive assessments was lower than in 2023. Whereas in the 2023 survey the impact of mining activities on cost of housing was assessed more positively than in previous years' surveys, the number of positive assessments has now fallen, and negative assessments have risen. Of the respondents, 11% assessed the impact as positive and 74% as negative. In 2023, positive assessments accounted for 18% and negative assessments for 68%. In their open feedback to mining companies, many respondents hoped that mining companies would participate in housing production, as rental apartments are expensive. The housing shortage was also pointed out in the open responses.

"At the moment, the housing situation in the municipality is such that there is no supply and rents are sky-high" (Free comment, R96).

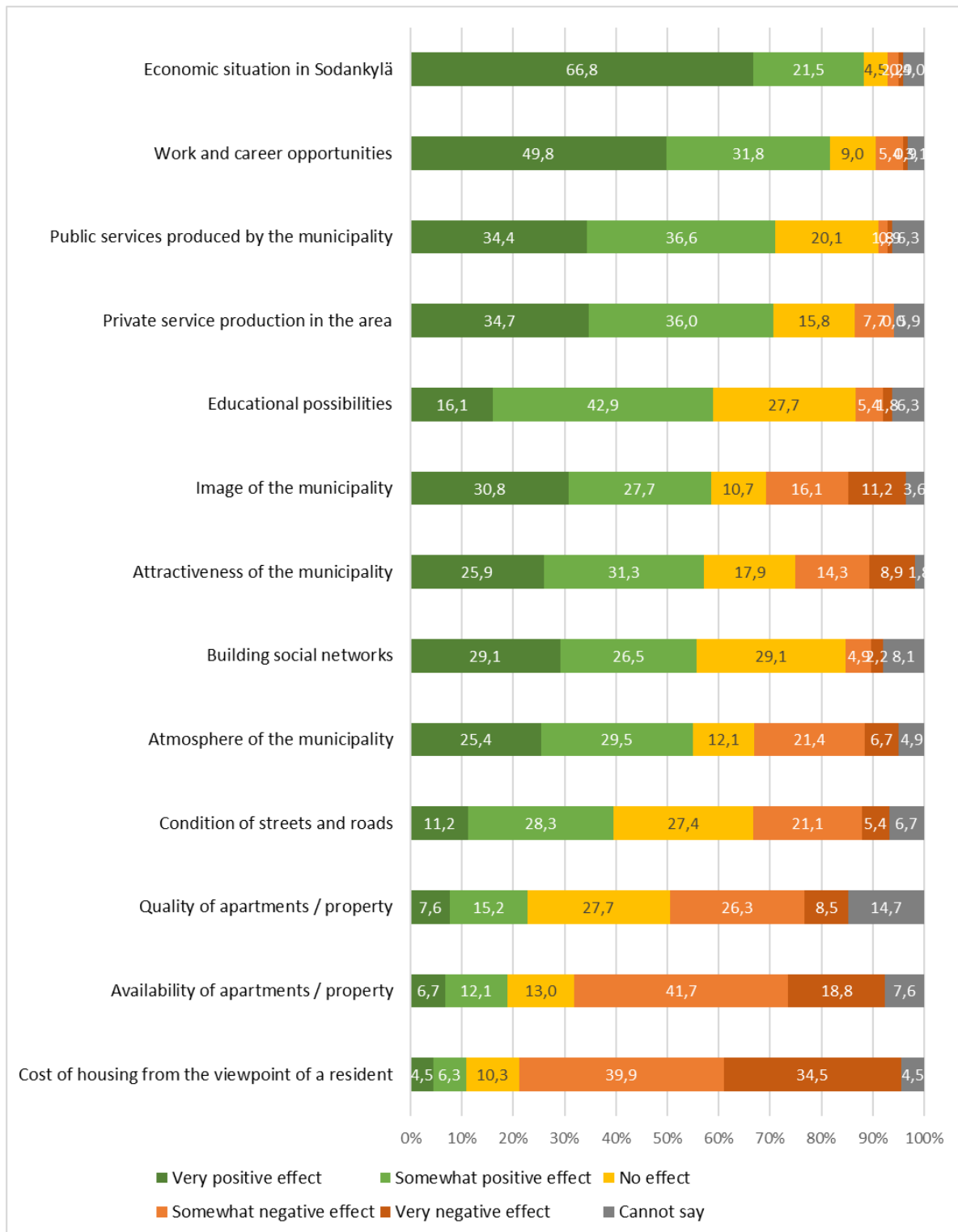


Figure 7. Impacts of mining activities on services, attractiveness, and infrastructure.

There have been no significant changes in attitudes towards financing the construction of housing, community spirit, and the living conditions of future generations compared to previous surveys. A clear majority of the respondents (74%) believe that mining companies should finance the construction of housing in the municipality, while only about 14% disagree.

When it comes to community spirit, half of the respondents believe that mining activities do not weaken community spirit in the area. Slightly more than a third (35%) believe that it does. Similarly, 60% believe that mining activities improve the conditions for future generations to live in the area, while nearly one-third (30%) believe that they do not improve them.

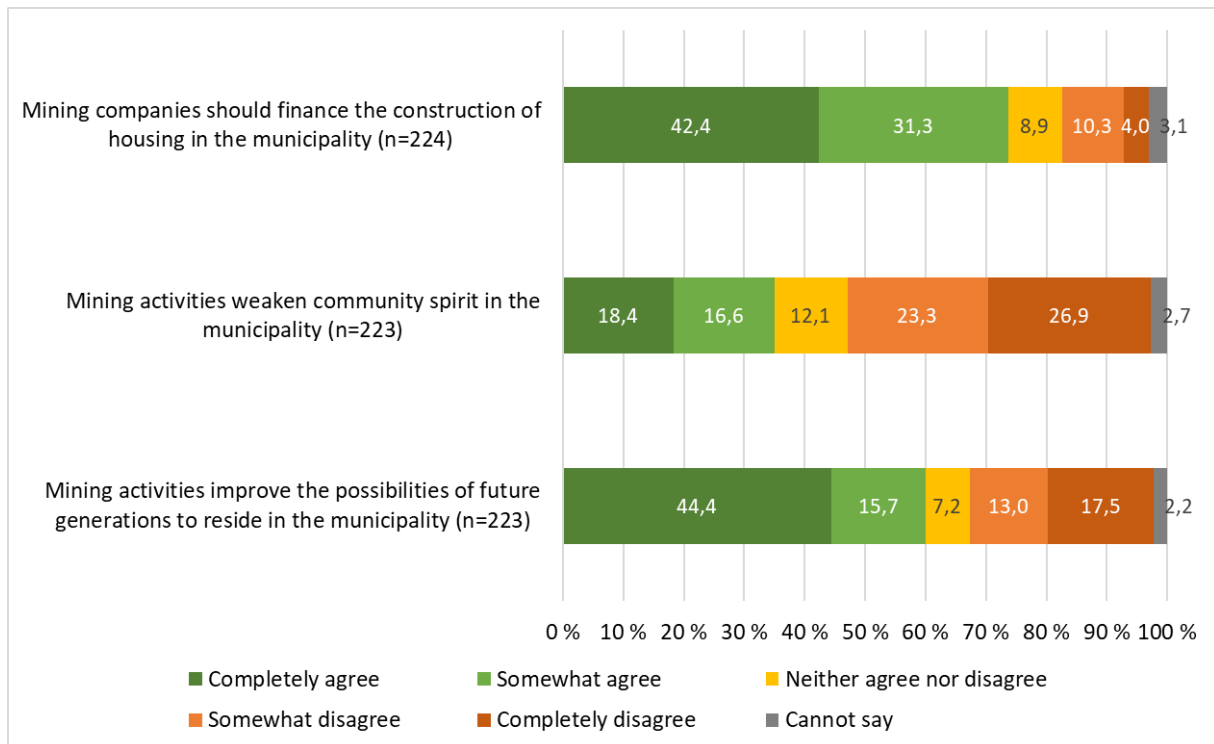


Figure 13. Construction of housing, community spirit and future generations.

Sum variables formed from the experienced social impacts of mining activities show that the majority of the respondents (58%) consider the impact of mining activities on the attractiveness and activity of the municipality to be positive. Men are more likely than women to view the impacts as positive (71% of men, 48% of women), while women are more likely than men to view mining activities as having no impact on the attractiveness and vitality of the locality (40% of women, 18% of men).

When examined by industry or life situation, those working in mineral exploration and mining (72%), construction (89%) and forestry (71%) as well as pensioners (71%) consider the experienced impacts of mining activities on the attractiveness and activity of the area to be positive. Reindeer herders experience the most negative impacts (38%), although an equal number of them also experience positive impacts. However, when interpreting the figures, it should be noted that the number of respondents working as reindeer herders is small.

When examined by age, the oldest age group in particular, 70–82-year-olds, perceive the impacts of mining activities as positive for the attractiveness and activity of Sodankylä (72%). The 50–59 age group has the highest proportion of people who view the impact as negative (19%). Compared to other age groups, young people aged 16–29 emphasise the view that mining activities have little impact on the overall attractiveness and activity of the municipality (42%).

In contrast, the impact of mining activities on the housing situation in the municipality was also perceived as negative significantly more often (62% of all respondents) based on the sum variables. Approximately one-quarter (26%) of the respondents felt that mining activities have little impact on the housing situation, and only 13% of the respondents felt that it had a positive impact. Men's perception of the impact of mining activities on housing is slightly more positive than women's (women 9%, men 17%). Of the women, 71% felt that the impact was negative, compared to 52% of the men. About one-third of the men (32%) considered the impact to be neutral, while about one-fifth of the women (19%) felt the same way.

When examined by industry and life situation, at least half of all respondents except those working in construction, agriculture, and forestry, as well as pensioners, viewed the impact of mining activities on the housing and property in Sodankylä as negative. When examined by age, the younger age groups in particular viewed the impact of mining on the housing situation as negative (82% of 16–29-year-olds and 71% of 30–39-year-olds). In contrast, less than a quarter (24%) of the oldest respondents aged 70–82 felt this way.

In order to identify regional differences, the impact of mining on attractiveness and services was also examined by region, as in the previous survey. As in 2023, respondents living in municipal centre and other villages assessed the impacts of mining most positively, while those living in nearby villages assessed them most negatively.

Respondents living in the municipal centre and other villages assessed the impact of mining activities on the attractiveness of their municipality more positively than in the 2023 survey. In villages close to mining projects, however, the impact on attractiveness was assessed much more negatively. A negative assessment was given by 44% of the respondents living in villages near mining projects, compared to 35% in 2023.

The impact on the atmosphere of the municipality was assessed more positively in the municipal centre and other villages than in 2023. Conversely, the assessments were slightly more negative in nearby villages compared to the previous survey. Impact on building social networks was assessed slightly more positively in each area compared to the previous survey.

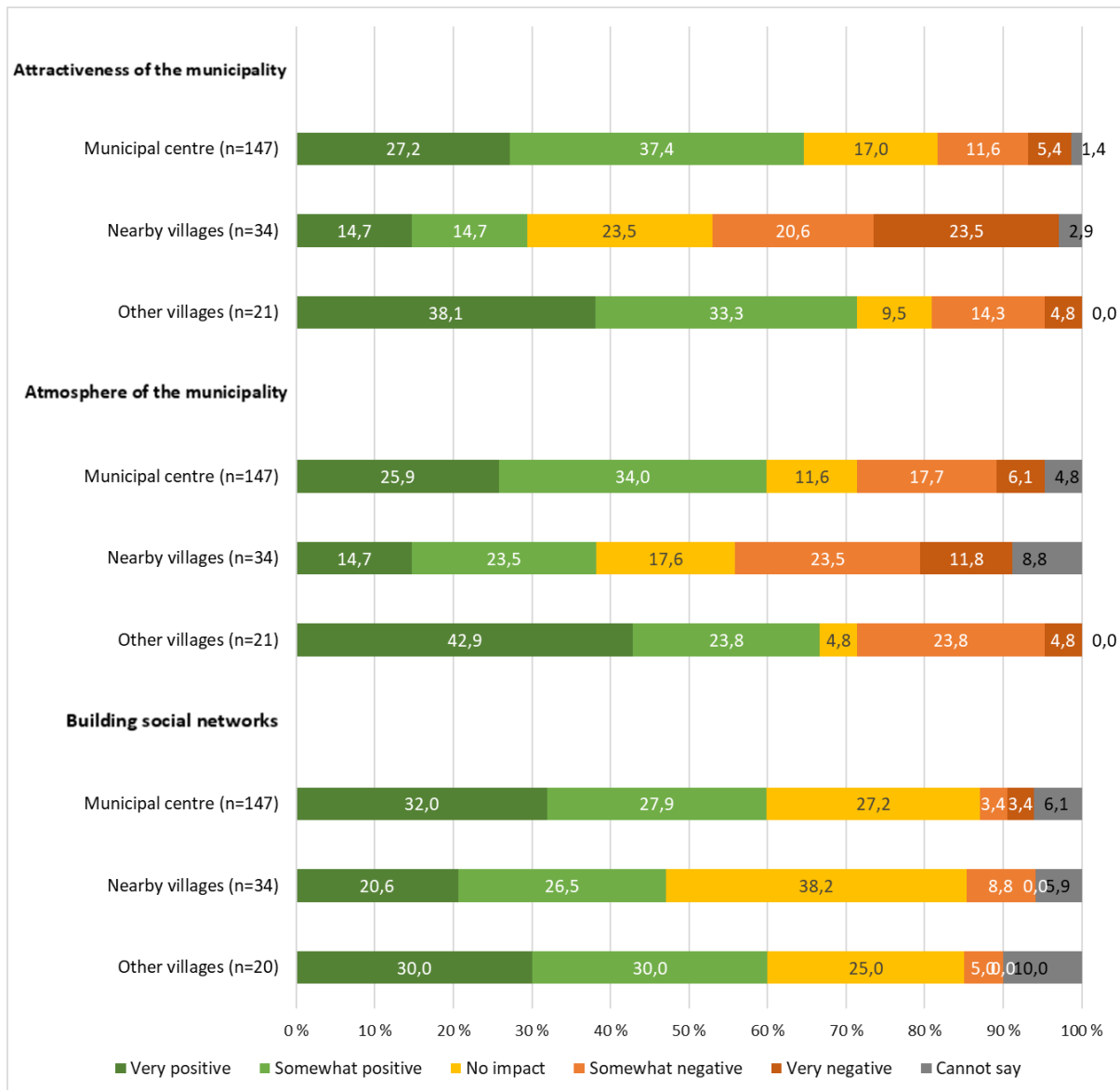


Figure 9. Impacts on attractiveness, atmosphere, and building social networks.

4.2 Environmental impacts

Mines, like human activity in general, have cumulative impacts on the environment over time (e.g. Franks et al. 2010). Such impacts have been observed in particular in the villages near the operating Kevitsa mine, and the planned Ikkari and Sakatti projects (Jeesiö, Kelujärvi, Kersilö, Moskuvaara, Petkula, Puolakkavaara, Rajala, Sattanen, Siurunmaa), where the proportion of people who have observed adverse impacts is higher than in previous years'

surveys for many factors. When examining the results, it should be noted that very few responses were received from these villages (n=34).

The proportion of respondents in nearby villages who have observed adverse impacts on water, animals, fish, plants, and the landscape is significantly higher than in any previous survey. In nearby villages, 71 percent have observed impacts to water, of which 38 percent have observed significant impacts. The proportion of those who have observed impacts is 18 percentage points higher than in the 2023 survey, when 53 percent of respondents had observed impacts. In the municipal centre and other villages, the proportion of respondents who observed impacts was lower than in the 2023 survey.

In nearby villages, 76% have observed adverse impacts on animals, fish, and/or plants, of which 33% have observed significant impacts. Landscape damage was observed by 85% of respondents, of whom 44% observed significant impacts.

The figures are significantly lower for those living in the municipal centre and other villages. In other villages, the number of people who have observed damage to water, animals, fish, and plants has decreased compared to previous surveys.

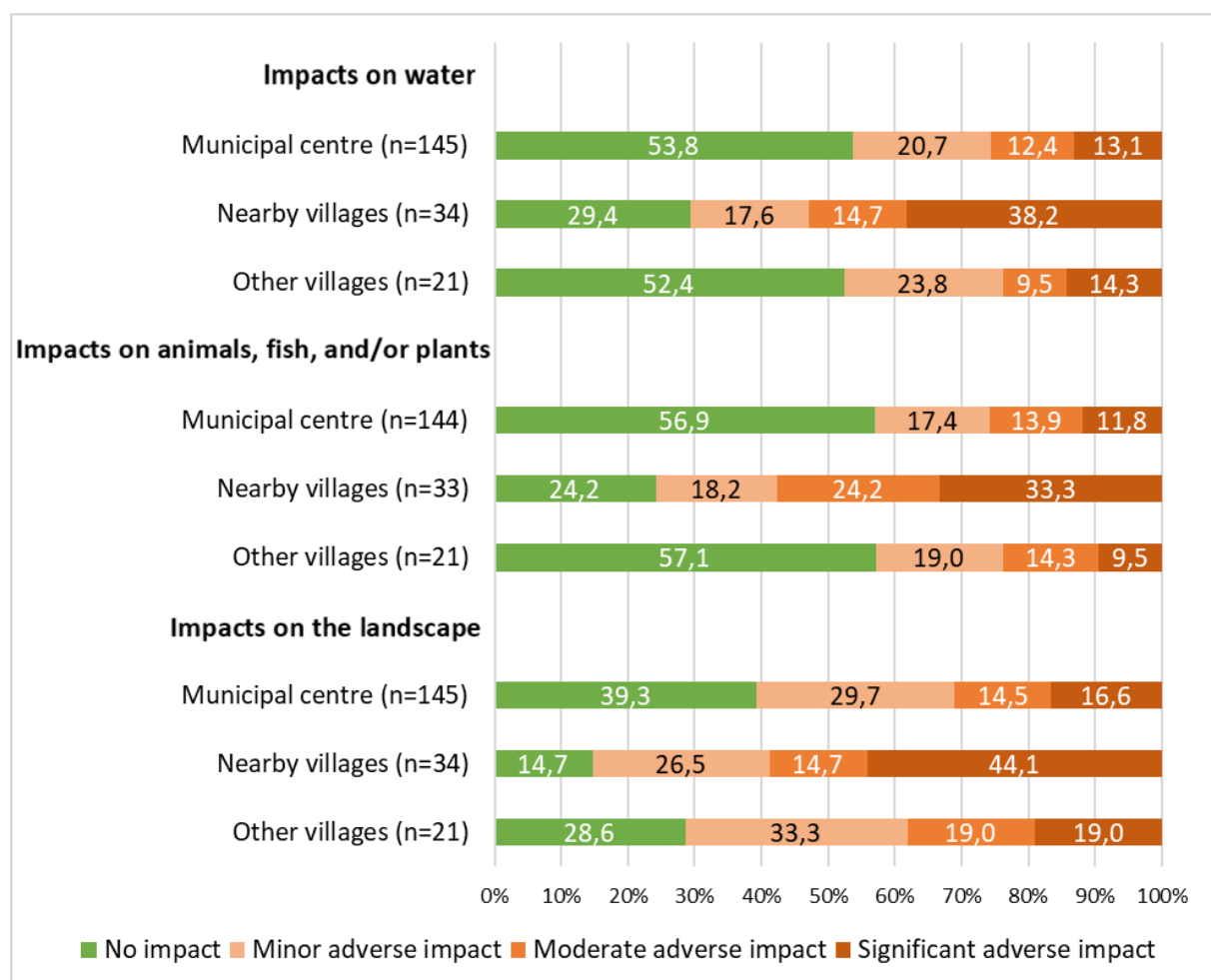


Figure 10. Impacts on the natural environment.

Considering dust, noise, tremor, and smell nuisance, there is no significant difference in the proportions of respondents who have observed these in nearby villages compared to previous survey years. The majority of respondents have observed adverse impacts in terms of dust (62%) and noise (56%). A significant proportion of the respondents in nearby villages have also noticed tremor (41%) and smell (38%) nuisance. On the other hand, the number of respondents in nearby villages who have noticed lighting nuisances has increased from one survey to the next. In the 2018 survey, 25% of respondents in nearby villages had noticed light pollution, while now 53% of the respondents in nearby villages consider lighting to be harmful.

"Light pollution, for example at the discharge pipe pumping station, complicates movement around the campfire place near the pumping station's shore, as the sideways light obscures the contours of the terrain. This also interferes with the observation of the northern lights or the sky in a wider area" (Have mining activities had an impact on your industry or livelihood, R52).

Similarly, the number of people who have experienced harm from hazardous chemicals has also increased in nearby villages. In 2018, 33% of respondents in nearby villages reported experiencing harm from hazardous chemicals; now the figure is 56 %.

In other villages and the municipal centre, the proportions of those who observed nuisance are close to previous years and, in some cases, slightly lower. The proportions of those who observed dust nuisance are lower in other villages and the municipal centre than in 2023. On the other hand, the proportions of those who noticed noise, tremor, and smell nuisance are largely similar to previous years. In the municipal centre, the proportion of respondents who reported smell nuisance is close to the 2021 result, whereas in 2018 and 2023 the proportion was significantly higher. In other villages, the proportion of respondents who have experienced nuisance from hazardous chemicals has fallen to its lowest level in the history of the surveys, with around a quarter (24%) now reporting nuisance from hazardous chemicals in other villages.

When it comes to traffic safety, a large proportion of the respondents have observed hazards, most of them in nearby villages (88%). The majority of the respondents in the municipal centre (78%) and other villages (67%) have also observed traffic safety hazards. The percentages have remained close to the same as in previous survey years, especially in nearby villages and the municipal centre. The number of people who have observed hazards has decreased, especially in other villages.

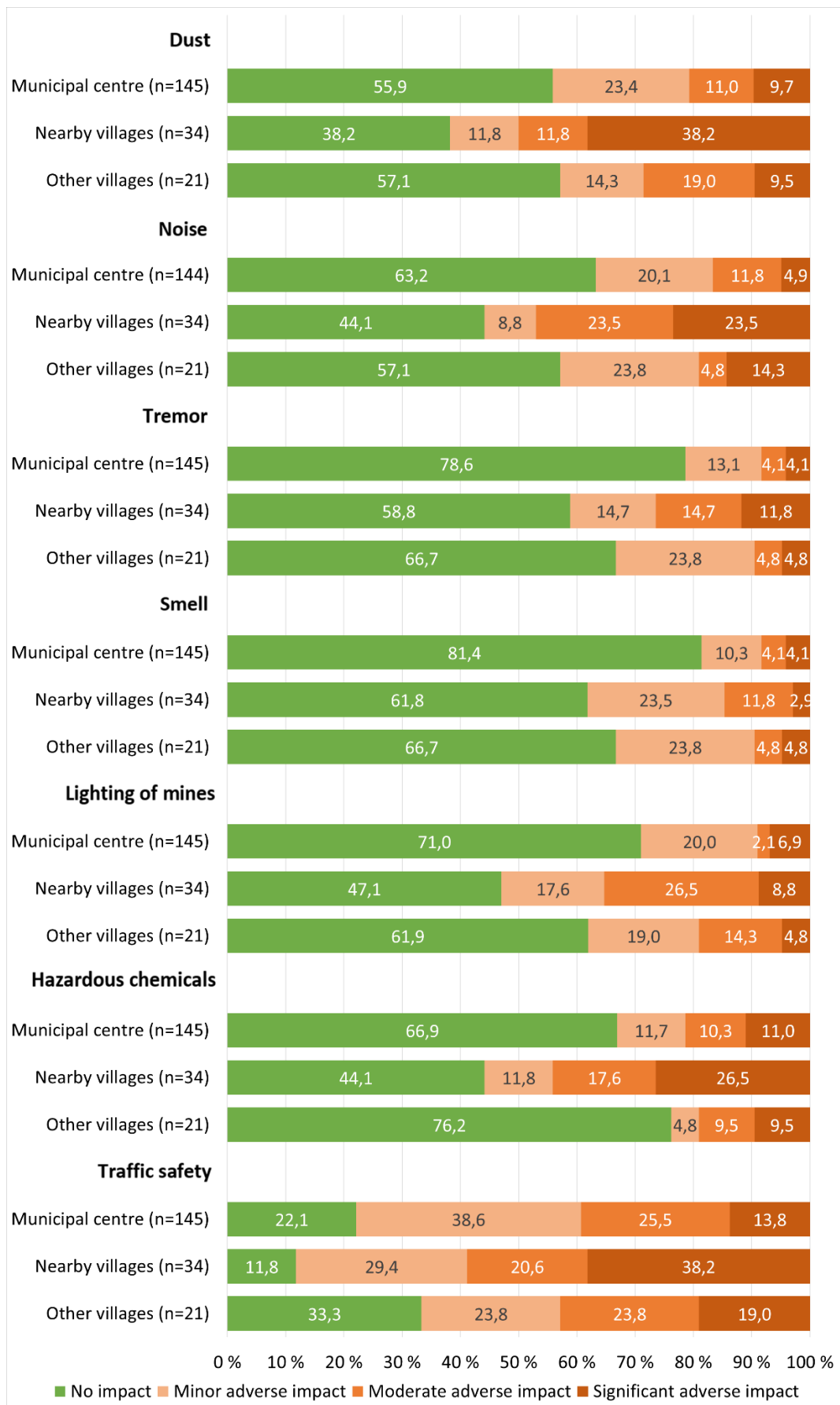


Figure 11. Impacts related to mining activities.

Slightly more than half (53%) of respondents from nearby villages, 40% of the respondents from the municipal centre, and 38% of the respondents from other villages have observed adverse impacts on berry and mushroom picking. These percentages are in line with the results of previous surveys, meaning that no increase in adverse impacts has been observed in this regard.

The percentage of respondents who have observed adverse impacts on hunting, fishing, and recreational use of nature has increased in nearby villages. Fifty-nine percent of those living in nearby villages have observed adverse impacts on hunting, and the proportion of those who have observed adverse impacts has increased by 9 percentage points since 2023. Sixty-eight percent of people living in nearby villages have noticed negative impacts on fishing, which is 23 percentage points higher than in 2023. The proportion of people who have observed negative impacts on recreational use of nature (71%) has also increased significantly in nearby villages, by 16 percentage points.

In other villages, the proportion of those who have observed hunting impacts (43%) has decreased, while the proportion in the municipal centre (37%) has remained roughly the same as in previous surveys. Just under half (48%) of those living in other villages and 38% of those living in the municipal centre have observed fishing impacts. Nuisance in terms of recreational use of nature has been observed by 41% of those living in the municipal centre and 38% of those living in other villages, where the proportion of those observing nuisance has decreased by 13 percentage points since 2023.

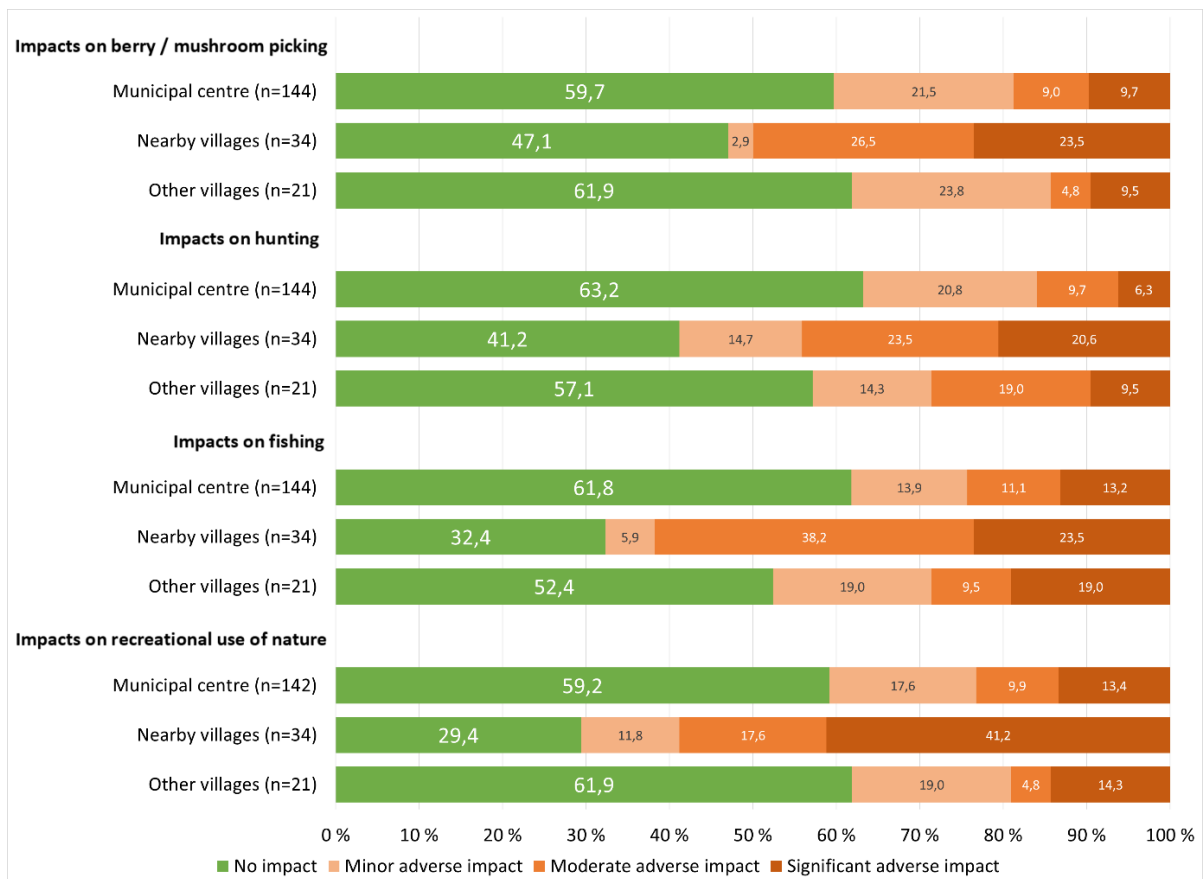


Figure 12. Impacts on the use of natural resources and recreational use of nature.

Based on the sum variable for the perceived environmental impacts of mining activities, the majority of respondents (69%) believe that mining activities have little or no impact on the environment. Approximately one-third (31%) feel that they have observed moderate or significant adverse environmental impacts caused by mining activities.

Women are more likely than men to consider the environmental impacts of mining activities to be harmful. Approximately one-third (34%) of women and one-fifth (22%) of men have observed moderate or significant adverse impact to the environment. The most negative environmental impacts have been observed by those working in education (65%), agriculture (67%) and reindeer herding (63%). The youngest age group, 16–29-year-olds, have observed the least harmful environmental impacts of mining (79% of respondents). The group that observed the most environmental damage was those aged 50–69, of whom approximately 36–38% observed moderate or significant environmental damage caused by mining activities.

The social and environmental impacts of mining activities are reflected in how Sodankylä is generally perceived. Positive economic impacts can reinforce a positive image of the municipality. At the same time, the state of the environment has a key impact on how Sodankylä is seen. For example, many open responses emphasise the importance of nature, which highlights the significance of nature as part of the identity of the municipality and its residents. However, the disadvantages and benefits of mining are not distributed fairly, with

the most negative impacts being felt in the villages closest to the mining projects. For this reason, it is necessary to pay special attention to these villages when discussing the experienced impacts of mining.

5 Social license to operate for mining activities in Sodankylä

The so-called social license to operate refers to the acceptability of a project locally and more generally, for example, nationally. Scientific literature emphasises local acceptability in particular, as it is the people living in the areas surrounding mining projects, for example, who are most affected by them. The operating practices of the company managing the project are significant in terms of social license to operate, but project acceptance is also influenced by whether people feel that legislation and official measures are sufficient to safeguard the environment, for example. Similarly, the local context, such as the population and employment structure of the area, people's values and political opinions, or experiences of previous mining projects, also influences the approval of the project. Social license is a yes/no attitude towards a project and can change rapidly, for example, as a result of public, critical debate (e.g. Mononen & Suopajarvi 2016).

This section examines the acceptability of mining from the perspective of social license. The first subsection deals with the respondents' views on mining in the locality. The second subsection highlights attitudes towards regulatory control and opportunities to participate in decision-making. The third subsection reviews the respondents' opinions on the Kevitsa mine and the Ikkari and Sakatti projects.

5.1 Acceptance of mining activities

Nearly three-quarters (73%) of respondents consider mining activities in their municipality to be acceptable. Approximately one-quarter of respondents do not approve of mining activities in their municipality, and 10% strongly opposes them. The proportion of those who accept mining activities is roughly the same as in the 2023 survey, but lower than in 2016–2021, when the proportion of those who accept mining activities fluctuated around 80%.

With regard to other questions concerning the acceptability of mining activities, there has been no significant change in views compared to previous years. A clear majority (75%) consider mining activities to be important for the vitality of the municipality and essential for the local economy (72%). Opinions were more divided on other questions, but in each case the majority consisted of around 60% of respondents.

Majority of the respondents thinks that expanding mining activities is acceptable. When asked about the impact of mining on the operating conditions of other industries, majority thinks that mining does not weaken the operating environment of other industries in the region. Similarly, majority believes that mining does not have a negative impact on investments in other industries in the area. Majority also does not consider large mining projects to be a threat to the diversity of the area's economic structure. The impacts on different industries and livelihoods were also highlighted in the open-ended responses to the survey. The impacts were seen as positive, particularly in terms of the economy, vitality, and employment.

“More people, and that livens up the whole village.” (Have mining activities had an impact on your industry or livelihood, R189)

As in previous surveys, the most negative impacts were seen in reindeer herding and tourism. Many respondents highlighted the negative impacts on reindeer herding:

“It causes extra trouble for our reindeer herding, and a mine fragments the pastures due to increased infrastructure and traffic disturbance.” (Have mining activities had an impact on your industry or livelihood, R125)

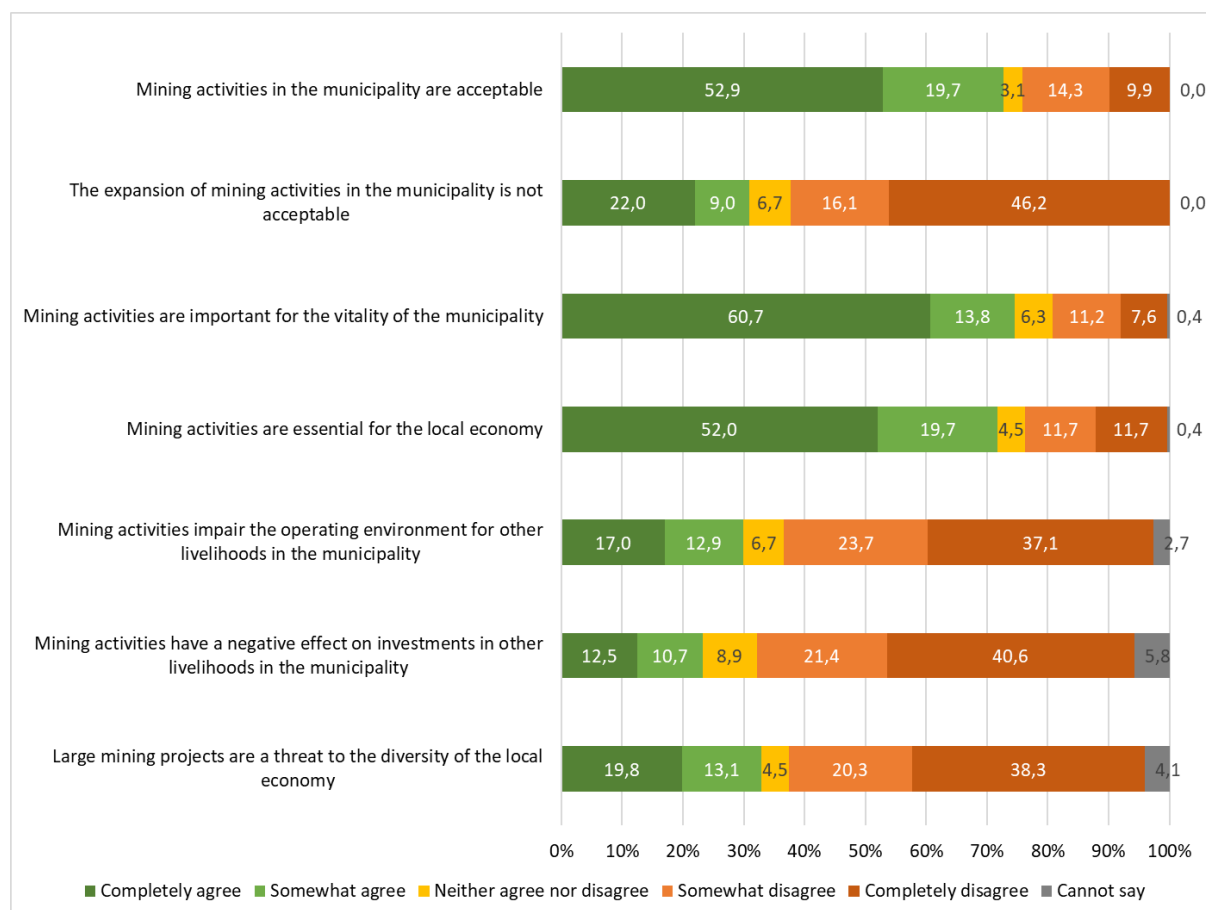


Figure 13. Acceptability of mining activities in Sodankylä (n=222–224).

Mineral exploration and mining activities on a Natura site have been widely covered in the media during 2025 due to the Sakatti mining project. The project was added to the European Commission's list of critical raw material projects in March (European Commission 2025). The project is partly located under the Viiankiaapa mire area, which is part of the European Union's Natura 2000 network. Through the Natura 2000 network, the EU aims to halt the loss of biodiversity in its territory (Ministry of the Environment 2025). Therefore, any deviation from Natura protection and the implementation of the mining project requires a decision by the Finnish Government (Yle 25.3.2025).

Slightly more than half of the respondents (52%) see that mining on a Natura site is acceptable. Less than half (43%) believe that it is not. When it comes to mineral exploration, a slightly larger proportion (57%) see that mineral exploration on a Natura site is acceptable. Thirty-nine percent of respondents disagree with this statement. There has been no significant change in attitudes compared to previous surveys. Respondents were given the opportunity to supplement their answers, and a total of 55 open-ended responses were received in favour and against:

"Mining is acceptable if it does not cause significant harm to the environment or reindeer husbandry." (Mining on a Natura site, R207)

"Natura areas were established precisely to prevent mining activities there." (Mining on a Natura site, R4)

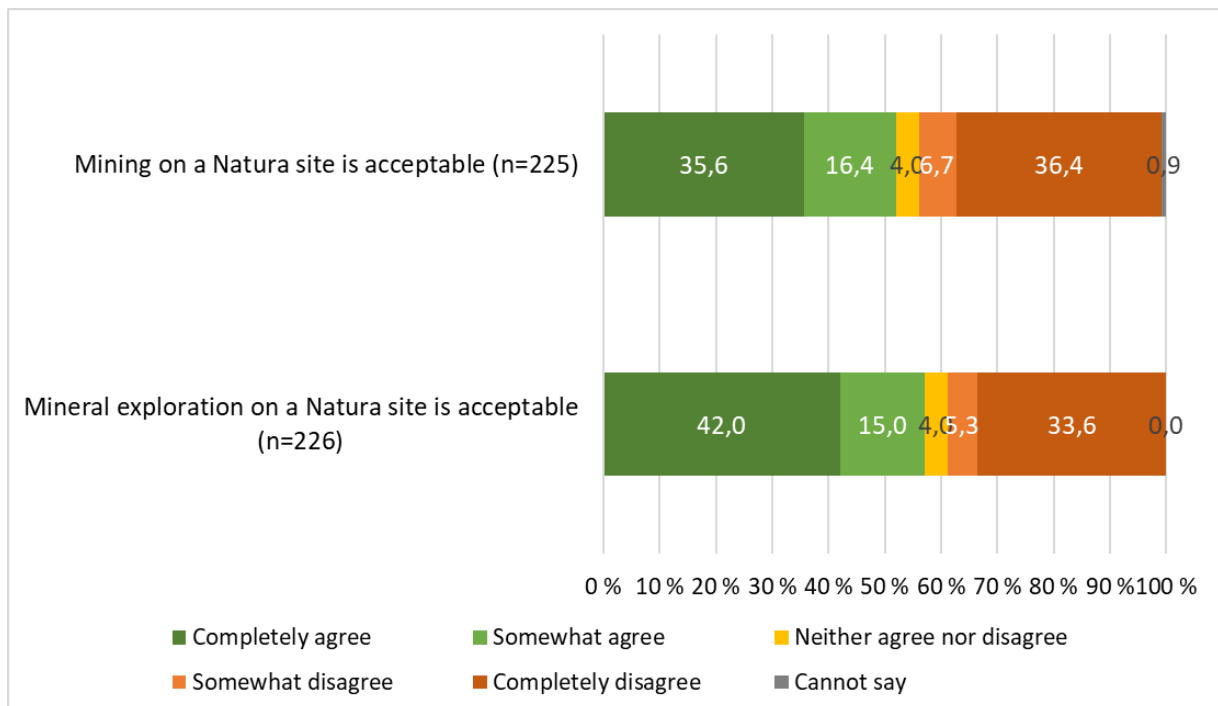


Figure 14. Extractive sector activities on a Natura site.

Majority of the respondents (58%) are generally concerned about the state of the environment, and almost half (49%) believe that the gravity of environmental problems is not exaggerated. Similarly, slightly more than half (51%) believe that it is necessary to open new mines in order to combat climate change. There has been no significant change in opinion on these issues compared to the 2023 survey.

The respondents are more critical about overconsumption. The proportion of respondents who believe that material overconsumption should be reduced through political action has risen by 13 percentage points compared to 2023. The proportion of those who disagree is eight percentage points lower than in 2023. A larger proportion of the respondents (72%) are also willing to pay higher prices for products made from responsibly produced minerals. This is 12 percentage points higher than in the 2023 survey. The proportion of those who disagree is six percentage points lower.

As in previous surveys, majority of the respondents (55%) believe that it is not wrong for the EU to increase the number of mines in northern regions. Nevertheless, the number of those who disagree has increased since the 2021 survey. Now, 37% of respondents think that the EU's goal of increasing mining activity in the north is wrong.

Confidence that the mining area will be restored after the end of operations has grown since the 2018 survey. At that time, 46 percent of respondents agreed with the statement, while now 58 percent agree.

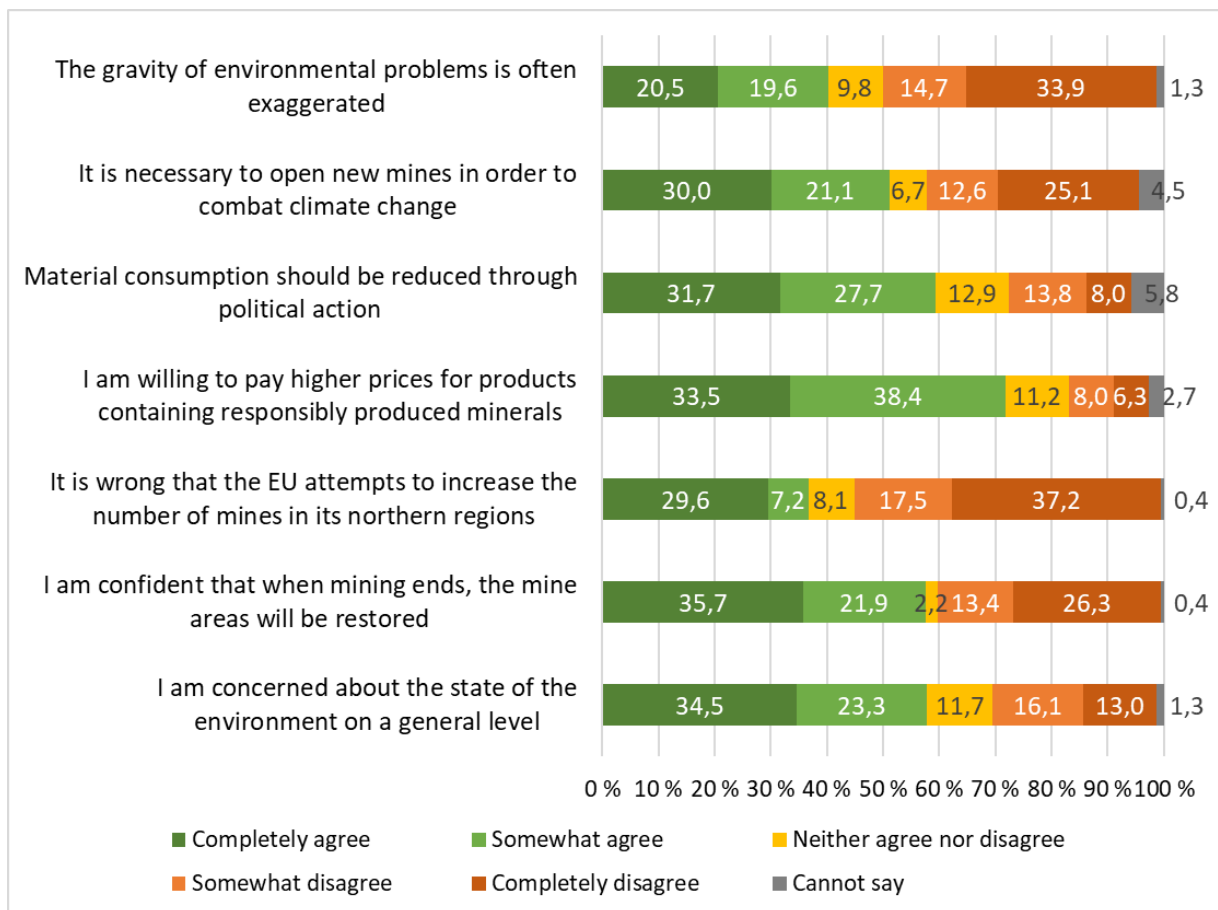


Figure 15. Environmental problems and responsibility (n=223–224).

5.2 Regulatory control and participation in decision-making

Clarity of information provided by the authorities regarding permit procedures and supervision was rated as poor in 2023. This time, the ratings are up to 20 percentage points higher than in 2023. Of the respondents, 56% felt that the information provided was clear. The respondents reported that they had obtained information about mineral exploration and mining projects mainly from traditional and social media. Only one respondent reported that they had not obtained any information about mineral exploration and mining projects. Satisfaction with communication is also higher in terms of its adequacy. More than half of the respondents (53%) completely agreed or somewhat agreed that the authorities provide sufficient information on permit procedures and supervision.

A smaller proportion of the respondents than before believe that environmental permits are granted on superficial grounds. The majority of the respondents (54%) disagree with this statement, and the proportion of those who agree with it has grown from one survey to the next. Satisfaction with the supervision of mining operations and the reliability of supervision has increased. More than half (52%) believe that mining activities are supervised effectively

enough. Similarly, more than half (54%) believe that the environmental authorities reliably supervise the environmental impact of mining activities in Sodankylä. The proportion of the respondents who agree with both statements is ten percent higher than in 2023.

Opinions are divided on the knowledge and skills of municipal authorities in matters related to mining. Less than half of the respondents (42%) believe that the authorities do not have sufficient knowledge and skills, while around one-third (35%) believe that they do. The proportion of those who agree is ten percentage points higher and the proportion of those who disagree is ten percentage points lower than in 2023.

Opinions on whether the ties between the municipality and mining companies are too strong are polarised. The proportion of those who agree and disagree is higher than in previous years. Nearly half of the respondents (49%) believe that the ties are not too strong, while nearly one-third (30%) believe that they are.

The respondents' satisfaction with opportunities for participation and influence is stronger than in the 2023 survey, but opinions are strongly divided. Nearly 40 percent (39%) felt that their opportunities for participation and influence were good, while a similar number (38%) felt otherwise. The proportion of those who felt that their opportunities to influence were good is 12 percentage points higher than in previous years, while the proportion of those who felt that their opportunities to influence were poor is eight percentage points lower than in previous years.

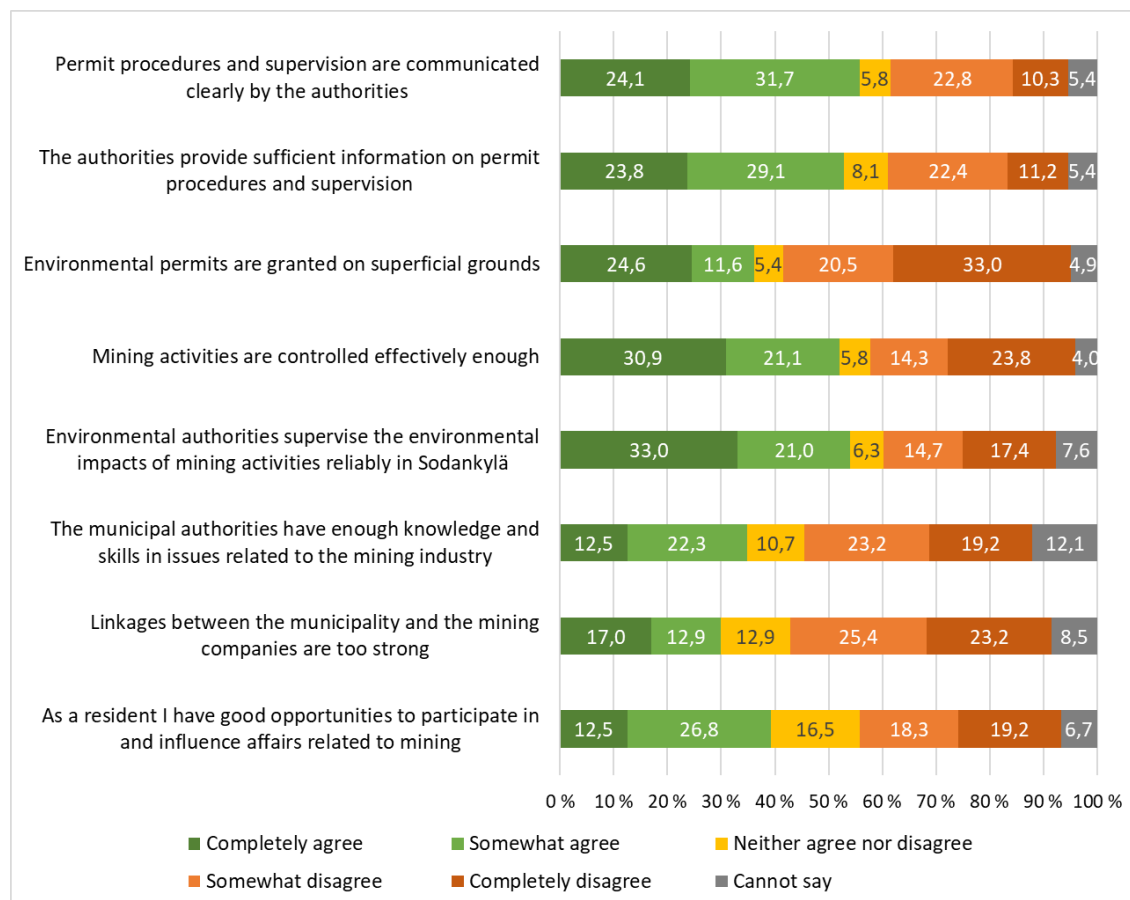


Figure 16. Control by the authorities and decision-making (n=223–224).

When it comes to participation and influence, women feel they have fewer opportunities than men. Less than a third of women (29%) feel that they are good, while the corresponding figure for men is over half (51%). By age group, those aged 50–59 in particular feel that their opportunities for participation and influence are poor (41%). In contrast, the 70–82 age group has the highest proportion (50%) of respondents who feel that their opportunities are good.

When examined by employment sector, opportunities for participation and influence are perceived as poor particularly in education (65%), information and communication (75%), agriculture (67%), reindeer husbandry (63%), welfare services (60%), and tourism (83%). Those working in mineral exploration and mining are the only group that clearly emphasises good opportunities for participation and influence in matters related to mining. Sixty percent of those working in the sector feel that their opportunities for influence are good.

In terms of trust, the scientific community, supervisory authorities, companies, and close friends are trusted the most. Social media, Reindeer Herders' Association, and environmental organisations are the least trusted. Trust was measured for the first time in the 2023 survey. Compared to that survey, trust is stronger, particularly in decision-makers, the European Union, and supervisory authorities. The most significant change has occurred in relation to the EU. Of the respondents, 38% trust the EU very much or fairly much, which is 14 percentage points more than in 2023.

The biggest change in distrust has occurred towards environmental organisations, with half of the respondents reporting that they trust them very little or fairly little. This is six percentage points higher than in the 2023 survey. The distrust towards environmental organisations can be explained by the fact that nearly one-third of the respondents worked in the mineral exploration and mining sector. In addition, environmental organisations highlight the negative effects of mining and, for example, file complaints in permit processes, which can be interpreted as an obstacle to mining projects. As in the 2023 survey, those who approve of mining were generally more confident in various actors than those who oppose mining.

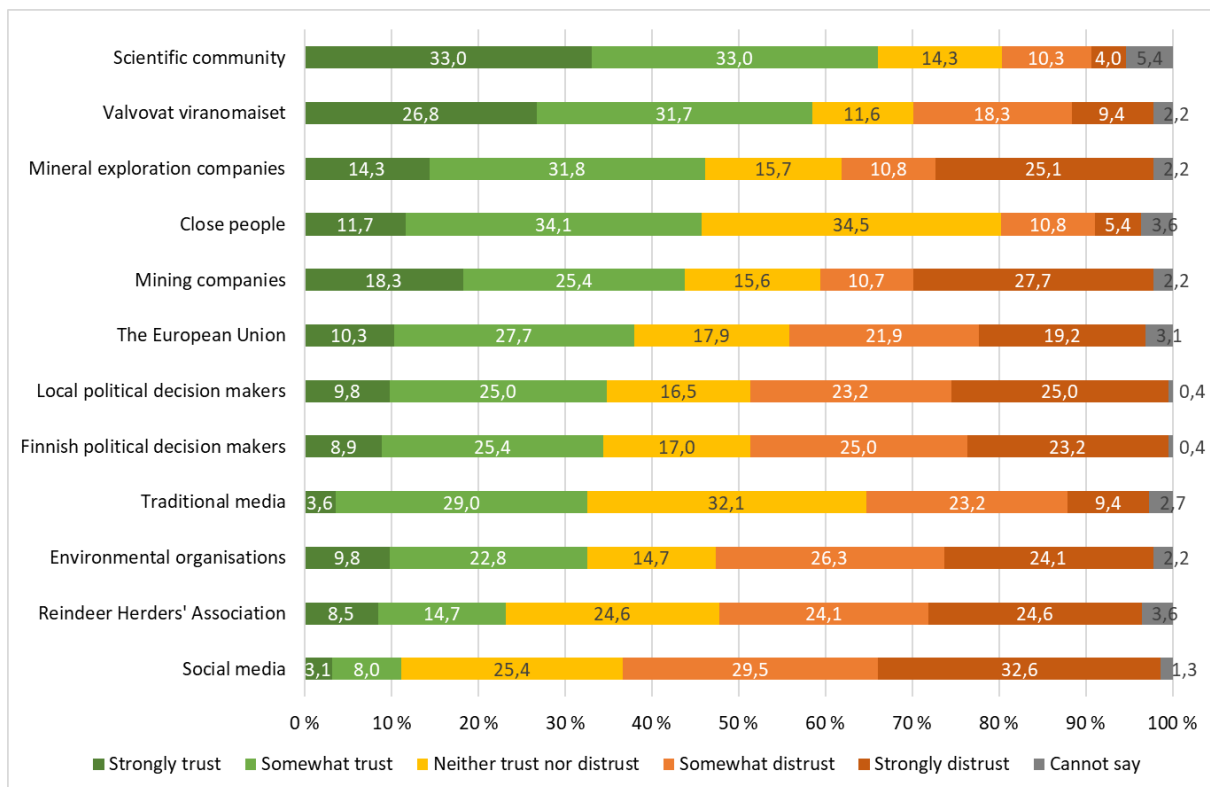


Figure 17. Trust in various actors in mining-related matters (n=223–224).

5.3 Project-specific assessment

In the project-specific assessment, the response scale was changed from the school grades used in previous surveys to a more neutral form. The reason for this change is that, for example, a school grade of eight may be high for one respondent and low for another when the grade is reflected in their own school performance. The respondents now had the opportunity to rate mining projects as outstanding, excellent, good, satisfactory, moderate, adequate, poor, or cannot say.

The ratings were converted to school grades (outstanding = 10, poor = 4) during the analysis phase to maintain comparability. However, using different scales in the survey phase may affect comparability.

The way companies operate is important in terms of social license to operate. One-way communication alone does not strengthen local acceptance—people want dialogue that enables local participation and ensures that their concerns are genuinely listened to. Mercer-Mapstone et al. (2018) summarise the whole idea as follows: Dialogue between a company and a community builds reciprocal relationships, fairness, and trust, which leads to social acceptance. Respondents also call for this kind of dialogue in their development suggestions for mining companies:

"Listen to residents' thoughts and be honest about negative issues as well" (Development suggestions for mining companies, R113).

In the assessment, the projects received higher ratings overall than in the 2023 survey. The total grade for the Kevitsa mine (7,0) rose by 0,3 points from 2023, the total grade for the Ikkari project (7,1) rose by 0,4 points from 2023, and the total grade for the Sakatti project (7,0) rose by 0,2 points from 2023. The total grades were calculated as the average of all ratings given.

The Kevitsa mine received higher ratings in each sector than in the 2023 survey, with the exception of the company's investment in the well-being of the local residents and the company's commitment to municipal development, where the ratings remained the same. The lowest ratings were given to compensation for adverse effects, opportunities for participation, and the perceived effectiveness of participation. Nevertheless, the latter two ratings rose the most since 2023. The rating for the perceived effectiveness of participation rose by 0,5 points and that for opportunities for participation by 0,4 points. The rating also rose by 0,4 points in terms of the credibility of the company in its operations and the sufficiency of the information disseminated by the company compared to 2023. The highest rating (7,7) was given to the acceptability of the company's operations.

The Ikkari project received thoroughly higher ratings than in the 2023 survey. The rating rose most significantly in terms of the credibility of the company in its operations, where the rating was 0,6 points higher than in 2023. As in 2023, the lowest rating was given to the compensation for adverse effects. The highest rating was given to the acceptability of the company's operations (7,8).

The Sakatti project also received thoroughly higher ratings compared to the 2023 survey. Only the location of the deposit received a lower rating compared to the previous survey. The biggest increase in the grade was in the assessment of the company's cooperation and interaction with the local residents, which was rated 0,6 points higher than in 2023. However, the ratings of the Sakatti project have fallen significantly since 2018. The biggest declines were in the credibility of the company in its operations and the activeness and timeliness of its communications, both of which fell by 0,7 points since 2018. The total grade fell by 0,4 points. The 2018 survey did not measure the acceptability of the company's operations or its investment in the well-being of local people.

In addition to the location of Sakatti deposit, opportunities for participation and the effectiveness of participation received lower ratings. Despite this, the company's cooperation and interaction with the local residents received the most positive rating (7,4). The credibility of the company in its operations and its estimated operating period also received a similar rating (7,4).

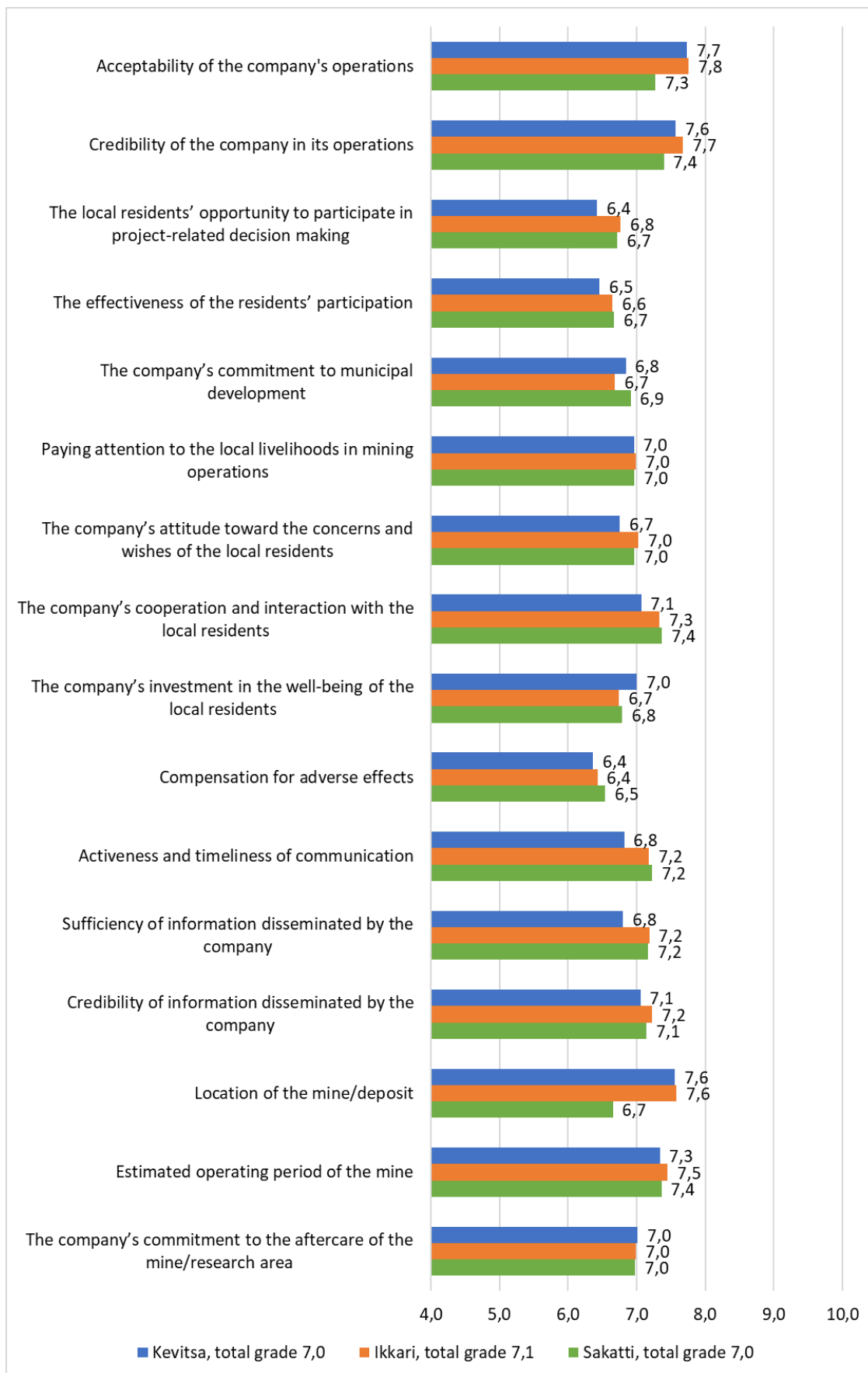


Figure 18. Project-specific assessment (n=221–224).

6 Conclusion

The experienced impacts of mining in Sodankylä have now been surveyed for the fifth time. This time, Sodankylä was seen in a more positive light than in the survey conducted two years ago. The municipality was considered lively and pleasant in general, although its "smallness" drew criticism. The impact of mining was considered positive in terms of the economic situation and employment, but at the same time, the negative impact on the municipality's housing situation was emphasised. It is also important for the vitality of the municipality that the housing situation is attractive and enables people to settle in Sodankylä on a more permanent basis (Suopajärvi 2017). Overall, the majority of respondents consider mining in the municipality to be acceptable and the social impacts of mining to be positive.

However, opinions vary between respondent groups. Those working in mineral exploration and mining, construction, and forestry have the most positive views of the impacts of mining. When examined by gender, women generally have a more negative view of the impacts of mining than men. The same applies to opportunities for participation and influence: men and respondents working in the mineral exploration and mining sector rate their opportunities for influence as stronger than other respondents.

The negative impact of mining on the local housing and property was emphasised in the responses of the youngest age groups. Young people also did not consider the impact of mining on general attractiveness and activity to be as important as other age groups. In contrast, the oldest age group of respondents, those aged 70–82, had the most positive view of the impact of mining.

Based on the data collected, the pros and cons of mining are unevenly distributed. The perceived negative impacts of mining projects were particularly pronounced in villages located close to mining projects. The impact on the atmosphere and comfort of the locality was assessed most negatively in these areas, as were all environmental impacts. In order to better describe these impacts, it will be necessary to add an open-ended question to future surveys, allowing respondents to specify the disadvantages they have observed.

For many people, the place is important as it is at this moment. Decisions to move are also often made based on current information. In Sodankylä, nature is an integral part of the place and places. It is a central part of the identity of the municipality and its residents, who are attached to it and dependent on it. This is supported by the fact that numerous respondents saw nature as part of the future of Sodankylä. Consequently, changes in nature are a cause for concern among respondents. In surveys conducted since 2016, the concerns of Sodankylä residents have been highlighted in each survey, with environmental concerns being particularly prominent. There are fears that the environmental risks associated with mining will materialise and cause significant damage to the area's waters, fauna, and flora.

As climate change progresses and biodiversity declines, the importance of nature conservation and responsible behaviour has become more pronounced. Responsibility as a goal is also reflected in the survey results: the majority of respondents are generally

concerned about the state of the environment and want to save rather than consume. More than half of the respondents (59 %) support the idea that material consumption should be reduced through political action, and a clear majority (72 %) are willing to pay higher prices for responsibly produced products.

Many topics were viewed in the same way as in previous surveys, although the current situation in the municipality and certain social impacts of mining were viewed more positively than in 2023. In addition to environmental concerns, respondents were concerned about the availability of services in the area, housing issues, and traffic safety. As in previous surveys, another key concern was the role of other industries, particularly reindeer herding and tourism, in relation to mining. Although Sodankylä is seen as having a diverse economic structure, opinions were divided on the role of different industries in the municipality's activities. Respondents disagreed, for example, on whether Sodankylä could survive without the mines. In any case, coordinating the activities of different industries is important for the vitality of the municipality. Decisions related to mining and, for example, the allocation of funds generated by mining require not only responsibility but also mediation skills from decision-makers. Slightly more than a third of the respondents believe that mining weakens the community spirit in the area.

The number of respondents to the current survey was lower than in 2021 and 2023. At the same time, there was room for improvement in terms of representativeness. The self-selection of survey respondents ultimately provides a picture of the opinions of a specific group, which challenges the comparability of surveys.

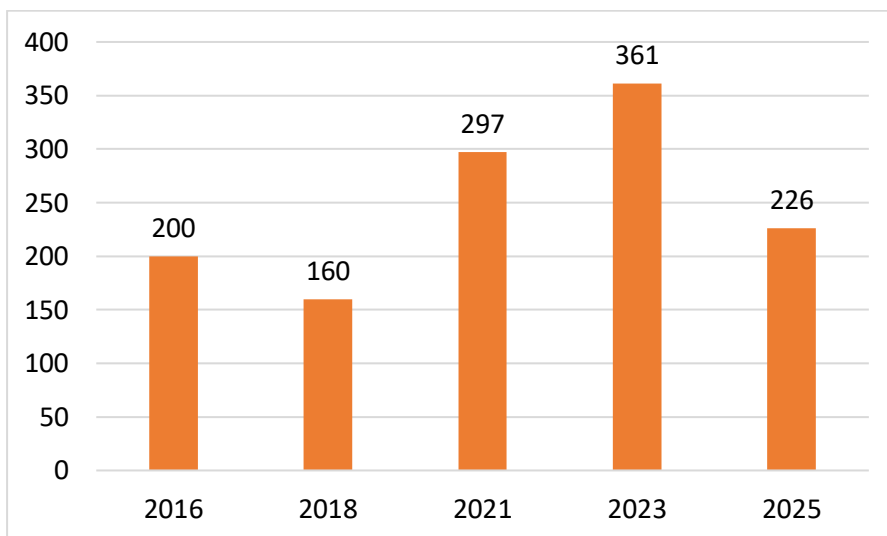


Figure 19. The number of survey respondents 2016–2025.

The total of 226 respondents represents less than three percent of the population of Sodankylä. When planning future surveys, other sampling methods may also be considered in order to reach a more representative group of respondents. Only a few responses were received from most of the villages in Sodankylä, 34 respondents were reached from villages near the mining projects, and no responses were received from eleven villages. Nevertheless, the survey provides information on how some Sodankylä residents feel about the impact of mining in the municipality and gives direction for future decision-making in the municipality.

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