SMERU RESEARCH REPORT NO. 1/2024

BASELINE ASSESSMENT: THE SOCIOECONOMIC CONDITION OF THE COMMUNITIES AROUND THE MINING AREA IN KABUPATEN SUMBAWA BARAT

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Abstract

Baseline Assessment: The Socioeconomic Condition of the Communities around the Mining Area in Kabupaten Sumbawa Barat

Veto Tyas Indrio, Ana R. Tamyis, Wandira Larasati, Sylvia Andriyani Kusumandari

Kabupaten Sumbawa Barat (KSB) is one of the *kabupaten* (districts) in West Nusa Tenggara Province with a very large proportion of the mining and quarrying sector. Statistics Indonesia (BPS) recorded that in 2021, the sector contributed no less than 81.89% to the regional gross domestic product (GDP). This resulted in KSB being dependent on the mining and quarrying sector—the fluctuation in its economic growth follows the fluctuation in the growth of this sector. On the other hand, the poverty and inequality rates in KSB were still above the national average. This study aims at providing an overview of the baseline data by mapping the socioeconomic conditions of the communities living around the mining area in KSB. This study is expected to provide input necessary for the community development programs which will be or are being developed in the region based on the assessment of the region's socioeconomic condition. This study was conducted in nine *kecamatan* (subdistricts) distributed in two *kabupaten*: KSB (the treatment area) and Kabupaten Sumbawa (the control area). We conducted a survey involving 1,000 households and in-depth interviews with community development programs' partners and stakeholders at the household, village, *kecamatan*, and *kabupaten* levels. This study analyzes several socioeconomic indicators that have been adapted from the indicators and standards used at the national and international levels. These indicators were grouped into seven analytic aspects: education, employment, nonmining economy, economic infrastructure, basic infrastructure, health, as well as social and environmental vulnerability. This study finds that some indicators have performed well. However, some issues need to be addressed and several indicators need to be prioritized for the community development programs by stakeholders, including the regional government, to improve the welfare of the communities living around the mining area in KSB. Stakeholders must pay special attention to those issues when formulating strategies and steps as well as determining the programs' target. All those strategies, steps, and targets should be focused on improving the regions' healthcare system, formal education, human resources quality, tourism sector, and support for developing micro- and small-scale enterprises (MSEs).

Keywords: community development, regional development, socioeconomic

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List of Abbreviations

Bappeda	Regional Development Planning Agency	Badan Perencanaan Pembangunan Daerah
Baznas	National Alms Agency	Badan Amil Zakat Nasional
BMT	sharia-based cooperatives	*baitul maal wa tamwil*
BPD	Village Consultative Body	Badan Permusyawaratan Desa
BPJS	Social Security Implementing Agency	Badan Penyelenggara Jaminan Sosial
BPR	people's credit bank	Bank Perkreditan Rakyat
BPS	Statistics Indonesia	Badan Pusat Statistik
BTS	base transceiver stations	
BUMDes	village-owned enterprises	Badan Usaha Milik Desa
COVID-19	coronavirus disease 2019	
e-PPBGM	electronic community-based nutrition recording and reporting	*pencatatan dan pelaporan gizi berbasis masyarakat secara elektronik*
ENT	ear, nose, and throat	
ESG	Environmental, Social, and Governance	
GDP	gross domestic product	
GER	gross enrollment rate	
HDI	human development index	
ICMM	International Council on Mining and Metals	
ID	identification	
ISO	International Organization for Standardization	
JKN	National Health Insurance	Jaminan Kesehatan Nasional
KSB		Kabupaten Sumbawa Barat
LFPR	labor force participation rate	
MCH	maternal and child health	
MSE	micro- and small-scale enterprise	
MSME	micro-, small-, and medium-scale enterprise	

NER	net enrollment rate	
NGO	nongovernmental organization	
NIK	population identification number	*nomor induk kependudukan*
NTB		Nusa Tenggara Barat
OOSC	out-of-school children	
Pamsimas	Community-Based Drinking Water and Sanitation Program	Penyediaan Air Minum dan Sanitasi Berbasis Masyarakat
PDAM	Local Water Supply Company	Perusahaan Daerah Air Minum
PLN	State-Owned Electricity Company	Perusahaan Listrik Negara
Podes	Village Potential Data	Pendataan Potensi Desa
POJK	Financial Services Authority Regulation	Peraturan Otoritas Jasa Keuangan
pokdarwis	tourism awareness group	*kelompok sadar wisata*
posyandu	integrated health post	*pos pelayanan terpadu*
PROPER	Program for Pollution Control, Evaluation, and Rating	
puskesmas	public health center	*pusat kesehatan masyarakat*
pustu	secondary *puskesmas*	*puskesmas pembantu*
RPJMD	Regional Medium-term Development Plan	Rencana Pembangunan Jangka Menengah
SAE	small area estimation	
SDGs	Sustainable Development Goals	
STD	sexually transmitted disease	
ToC	Theory of Change	

Executive Summary

Background and Objectives of the Study

Kabupaten Sumbawa Barat (KSB) is one of the *kabupaten* (districts) in West Nusa Tenggara (NTB) Province. The mining and quarry sector in KSB has a significant contribution to its regional gross domestic product (GDP). Statistics Indonesia (BPS) reported that in 2021 the mining and quarry sector contributed 81.89% to KSB's economy. It is, therefore, not surprising that the fluctuation of the economic growth in this *kabupaten* pretty much parallels the fluctuation in this sector. On the other hand, the BPS also recorded that some important macroindicators, such as poverty and inequality rates, in KSB were higher than the national average. This raises a further question on the socioeconomic conditions of the communities around the mining area in KSB.

Based on the description above, this study aims to present the baseline data, which can help map the current socioeconomic conditions of the communities living around the mining area. Furthermore, this report serves as the basis for input to improve the community development programs which will be or are being developed in the mining area. Moreover, this baseline report can be used as the comparison data to see changes in some of the welfare indicators and to assess the impacts of the programs in a future endline study.

Conceptual Basis

Any discussion on community's socioeconomic condition includes the concepts of social welfare and economic welfare. These two concepts of welfare are the foundation for understanding welfare levels in general. At the household level, economic welfare is assessed using several indicators (income, earning, or employment status), as households with higher earnings or better employment are more likely to have better standards of living, including better health and education. Meanwhile, social welfare can be summarized as a condition in which individuals can meet their basic needs, can perform their social roles and functions (through participation in social activities), and can find the solutions to their life's problems. At the same time, people's welfare needs to be supported by decent environment. For a community to live prosperously, they must live in clean, healthy, and sustainable environment.

In this study, socioeconomic conditions are grouped into several aspects drawn from the theoretical concept of social welfare and economic welfare. We also take into account some values and principles presented in the documents regarding community development programs to determine welfare indicators. In Amman's Theory of Change (ToC) framework, there are three main pillars in running a community development program: (i) development of human resources, (ii) economic empowerment, and (iii) sustainable tourism. These three pillars are the basis for achieving a community development program's major objective, namely preparing the ecosystem for the communities living around the mining area so that they possess resilience when facing

challenges in the future. It is important to note that most of the indicators listed in this report are arranged as outcomes, or at least, as output.

In this study, we divided the socioeconomic conditions into 7 aspects of welfare and 70 indicators. In the last part of the report, recommendations for the community development programs will also refer to the concepts of social welfare and economic welfare which align with the framework used in this study. In this report, the condition of all the aspects are discussed and analyzed, but only indicators with interesting dynamics for further studies are included in the analysis.

Methodology and Scope of the Study

Methodology

This study used quantitative and qualitative approaches for two different regions: the treatment area (KSB) and the control area (Kabupaten Sumbawa). Having these two types of regions is central as they serve as tools to assess the impacts in the future. Both the qualitative and quantitative approaches were used to strengthen and sharpen the results of the socioeconomic analysis of the data collected in November 2022.

Quantitative data was collected by conducting a face-to-face survey using the random sampling method to 1,000 households in 9 *kecamatan* (subdistricts) in both the study areas. The *kabupaten* and *kecamatan* were selected based on several criteria, which were determined through a discussion with Amman's Social Impact Team. Prior to doing the field survey and data collection, the research team (regional researchers) conducted on-site data verification to ensure that the study areas met the criteria for the treatment and control areas. Moreover, the team confirmed that the selected households in both study areas met two of the three criteria: (i) having school-age children (5–17 years old), (ii) having young people (16–30 years old) as household members, and (iii) having female members (6–49 years old) who have been married or given birth.

Of all the *kecamatan* and villages for the quantitative study, two *kecamatan* and two villages in the treatment area and one village in the control area were selected as the qualitative study areas. We used the purposive sampling technique to select the study *kecamatan* and villages. The qualitative data was collected through in-depth interviews. The qualitative team started the primary data collection process by conducting online interviews with three Amman's program partners that represented the community development program's three pillars. Next, the team collected primary qualitative data on site. In the treatment area, the data was collected at the *kabupaten*, *kecamatan*, village, and household levels. In the control area, the data was collected at the village and household levels. Overall, the qualitative team interviewed 47 informants (from institutions or as individuals). Informants in each area and at each level were selected based on the needs for data. The interviews followed the interview guidelines and the objective was to obtain information concerning certain aspects. The team, then, ran the data triangulation process by checking information and data on the same aspects from interviews with different informants. After the analysis was done, the qualitative data was presented in the form of narratives, interview quotes, and story boxes. The analysis of the qualitative data and that of the quantitative data are complementing each other.

Scope and Limitations of the Study

This study has some limitations, one of which is related to the study areas. Firstly, even though the data was collected in two *kabupaten*, it did not automatically present to us the complete picture at the *kabupaten* level, but could only be used to represent the treatment and control areas. Secondly, in formulating some of the socioeconomic indicators, the research team collected 70 indicators, which were adapted from the national and international indicators and standards. In the analysis, however, the research team only used several indicators, considering the many interesting issues and topics that needed to be addressed. Next, the quantitative research team did not collect data on household members who were living outside the study areas. As a result, some of the indicators could not provide us with a picture of the population with such a criteria. Lastly, as mentioned earlier, this study takes into account some theoretical aspects and frameworks, namely the Sustainable Development Goals (SDGs); International Council on Mining and Metals (ICMM); International Organization for Standardization (ISO) 26000; Environmental, Social, and Governance (ESG); Program for Pollution Control, Evaluation, and Rating (PROPER); KSB's Regional Mid-term Development Plan (RPJMD); and Amman's vision and mission, including its ToC. That is why the focus of the discussion and analysis in this study refers to these documents; for example, the discussion about the nonmining aspect focuses on the tourism industry and micro-, small-, and medium-scale enterprises (MSMEs).

General Condition of the Study Areas

KSB lies on the west part of the Sumbawa Island, which is part of the NTB Province. KSB comprises eight *kecamatan* (Sekongkang, Jereweh, Maluk, Taliwang, Brang Ene, Brang Rea, Seteluk, and Poto Tano), divided into 64 villages/*kelurahan*[i]. KSB's regional GDP reached Rp110,58 million in 2021, which was the highest in NTB. The economic growth has fluctuated quite sharply and relied heavily on the mining and quarry sector, which has contributed 81.89% to the total regional GDP. On the other hand, Kabupaten Sumbawa (with an area of 6,643 km^2) is dominated by the agriculture, forestry, and fishery sectors. The region has shown a positive economic growth rate, except in 2020 during the onset of the coronavirus disease 2019 (COVID-19) pandemic. Even though the growth rates of both regions have been quite high, the poverty rates have also been high, namely around 13.5% in KSB and 13.9% Kabupaten Sumbawa in 2021.

Of the 1,000 households we recorded, we removed 5 households from the analysis sample during the data cleaning process. Thus, we obtained 995 households from the quantitative survey, comprising 597 households in the treatment area and 398 households in the control area, totaling 3,828 people. The two groups dominating the composition are children (5–17 years old) and adults (above 30 years old). It was not easy to find youth respondents as it appeared that many young people have moved outside of the region (outside the *kabupaten* or even outside the province) for work or school. The relatively small number of young people in both study areas means that the productive-age

[i] A *kelurahan* is a village-level administrative area located in an urban center.

population was also relatively small, i.e., around 32%–37%, resulting in high people dependency ratios.

Based on the types of dwellings, most households live in their own house. In both study areas, most of the respondents live in a house with iron-sheet roofs and brick walls. In the control area, most houses (57%) have marble/ceramic/granite floors. In the treatment area, however, only 33.7% of the houses have marble/ceramic/granite floors. The mean years of schooling of household heads in both study areas is 9.4 years, which is equivalent to finishing junior high school.

There is a difference in the average household spending according to household heads' employment sector. In the treatment area, the average spending of households where the head works in the mining sector is Rp3.6 million a month, higher than households where the head works in other sectors. Households with the lowest spending, namely between Rp1.6 million and Rp1.7 million a month, are those whose head works in the manufacturing and agriculture sectors. The manufacturing sector in this study refers to the micro- or small-scale home processing-industries. Households with the highest monthly spending (Rp2.1 million) in the control area are those whose head works in the transportation, warehousing, and information and communication sector, while those with the smallest spending (Rp1.2 million) are households whose head works in the restaurant and accommodation sector. If we look at the labor force participation rates (LFPR), male LFPR in both study areas is higher than female LFPR. This is especially evident in the population attaining senior high school education or higher.

Socioeconomic Analysis of the Communities around the Mining Area

Education

Most of the population aged above 24 years have a low level of educational attainment (junior high school or lower), with mean years of schooling standing at around 9 years. Although the government has enforced the compulsory education program up to senior high school/equivalent, the population's educational attainment shows that efforts need to be taken to ensure that people have access to education. With regard to educational institutions, some schools lack learning facilities and qualified teaching staff. Regarding the school-age population, the net enrollment rate (NER) is high even though not all NER indicators have reached 100%. This means that there are still out-of-school children (OOSC), including those among people with disability. Economic constraints are the reason cited by most of the people who did not continue their education. Regarding gender, this study shows that men were less interested in going to school than women, especially in pursuing tertiary education (university/college). In the treatment area, this situation is associated with men being more interested in obtaining a job in the mining sector than pursuing tertiary education.

Employment

The number of highly educated workers (those with senior high school education or higher) in the treatment area is quite equal to the number of their less-educated counterparts. This might be caused by the mining and services sectors in the treatment area requiring educated workers. The mining sector has become people's favorite in the treatment area because it offers better incomes and higher social status than other sectors. Nevertheless, there is a gap between the demand for and the competence of workers. This situation has led to an unemployment issue, as many workers are reluctant to enter nonmining sectors.

Even though the mining sector offers relatively high returns, the number of women in this sector is significantly smaller than that of men. Moreover, women have to bear the double burden of working and carrying out domestic duties. This results in women having suboptimal working hours and quite many women falling into the underemployment category (working less than 35 hours a week). Women also tend to earn less than men. In the treatment area, the unemployment rate of women, especially the highly educated ones, is higher than that of men. On top of that, only a small number of women enter the labor force. Moreover, job fields requiring highly educated workers tend to prioritize men. The issue of returns/earnings is also correlated with educational attainment, internet utilization, and participation in certified training. Our survey shows that not many workers use the internet for work and have participated in certified training.

Nonmining Economy

The community's employment participation rate in the tourism industry is still low. The quantitative findings show that only around 8.24% of the people in the treatment area and 4.59% in the control area work in the tourism industry. There are two reasons behind the low participation rate: (i) people's low interest in the tourism sector and (ii) the inadequate condition of the sector itself (low earnings/wages). With regard to people's interests, most people still possess the mining mindset; working in the mining sector is deemed more interesting from the points of view of earnings and pride, so that people are less interested in working in the tourism sector. The quantitative findings show that in the treatment area, earnings/wages from working in the tourism industry are lower than those in the nontourism sectors. In general, factors hindering the development of the tourism sector are dominant over those supporting it. Included in these inhibiting factors are the following: (i) lack of collective awareness of various parties about the importance of developing the tourism in KSB; (ii) institutional challenges, such as the fact that local tourism awareness groups (*pokdarwis*) have not optimally played their role or performed their function; (iii) low human resources in the tourism sector; (iv) strong mining mindset; and (v) inadequate development of the tourism-supporting infrastructure. On the other hand, there are supporting factors, giving us a positive signal with regard to the development of the tourism in KSB. These factors include (i) the regional government's good will to boost the tourism sector, which is manifested in the issuance of multiple written regulations; (ii) the improved ease of procuring hospitality business permits; and (iii) the hospitality business owners' move to consolidate their efforts.

Aside from the tourism sector, another aspect of the nonmining economy that this study focuses on is the MSME sector. The quantitative data shows that at least 32.6% of the people in the treatment area and 44.4% in the control area work as entrepreneurs. Some data from the survey, however, shows that MSMEs in the study areas still have plenty room for improvement. Such a condition is evident from the following. Firstly, the quantitative data shows that most of the businesses are micro- and small-scale. Workers in a business employing a minimum of one worker receive a very low pay. Moreover, most entrepreneurs have relatively low levels of educational attainment, i.e., junior high school or lower. Thirdly, few enterprises have business permits, only 13.04% in the control area and 21.9% in the treatment area. Next, only a small number of entrepreneurs have ever participated in training to improve their business skills, namely 7% in the treatment area within the last year. Training in the utilization of digital technology is also few and far between, despite some studies showing the positive impact of utilizing digital technology on business growth. Lastly, the number of youth entrepreneurs is also small, namely under 10% in both study areas. Nevertheless, this study finds a high proportion of women among youth entrepreneurs, compared to men. This is especially evident in the treatment area. These challenges have made it difficult for MSMEs in the study areas to grow. That is why there need to be strategies to develop MSME's potential and make the sector another alternative source of the nonmining economy in the study areas.

Economic Infrastructure

The economic infrastructure includes physical and nonphysical infrastructures. The physical infrastructure to support economic activities includes roads, electricity, internet connection, and markets, which have been adequately available in both the treatment and control areas. Most of the roads heading to or around the respondents' houses in the treatment area are asphalt/concrete roads. In general, the majority of the roads around the respondents' houses in the study areas are in good condition. Only light damages were found on some roads during the course of the research. The condition of the roads in the treatment area is better than that in the control area. In terms of electricity, most respondents in both study areas already have access to electricity from the State-Owned Electricity Company (PLN) with the quality of the electricity supply being generally good. Access to the internet is also relatively good. Most of the respondents in both areas have access to a good internet connection. In terms of markets as physical infrastructure, this study finds some issues related to the limited facilities in traditional markets and the competition between traditional grocery stores and supermarkets/minimarkets. The situation of financial institutions as nonphysical infrastructure reveals issues regarding financial literacy and inclusion. Even though various financial institutions are available in most *kecamatan* in the study areas, more than 50% of the population do not have savings accounts. Another issue is that some people still opt for taking loans with interest charges from individuals or taking loans for a short-term goal, such as to support their lifestyle. This study also finds that some business owners do not utilize, or have not made use of, a business loan scheme even though they may need it.

Basic Infrastructure

In this report, we discuss basic infrastructure based on two indicators: households' access to safe drinking water and proper sanitation. In both study areas, households' access to

those two indicators is generally good, with more than 75% of the households having access to improved water and sanitation. In both study areas, more than 90% of households have their own bathrooms and most of the communities access water from refilled bottled water, artesian wells, and protected wells.

Although the condition of the basic infrastructure in both study areas is relatively good, there is still room for improvement. One of the issues faced by the communities is water quality. Around 10% of the household respondents said that the water they used for drinking, bathing, and washing had a taste, and around 5% of the households reported the water they used had a color or an odor. Particularly in the control area, around 7% of the households reported that the water they used was murky. Moreover, the well water became calcareous and murky in the rainy season and the well water discharge decreased in the dry season. Water from the Local Water Supply Company (PDAM) was also reported to be murky in the rainy season. Respondents also reported that the quality of water from the Community-Based Water and Sanitation Supply Program (Pamsimas) was relatively good. However, Pamsimas water pipes have not reached all areas in the village.

Health

This report focuses on several issues related to health. They are health insurance coverage, healthcare facilities, maternal and child health (MCH), and awareness of mercury hazards.

Regarding health insurance coverage and healthcare facilities, eight out of ten people in the treatment area have health insurance. The high coverage of health insurance could be achieved thanks to the Government of KSB's effort to boost people's participation in the National Health Insurance-Healthy Indonesia Card (JKN-KIS); for example, the participation rate reached 96.3% in 2017. However, there seems to be a distrust of healthcare institutions among the people in the treatment area. This is reflected in the fact that only around 25% of the population opt for accessing healthcare facilities when they have a health problem. This happens especially because they believe in self-medication and do not feel the need to go to a healthcare facility. This phenomenon is evident in all groups in the communities regardless of educational level, gender, age, or employment status. The qualitative findings also reveal that there is a certain fear among the communities about the chemicals contained in the medicine administered by medical personnel and a distrust of physicians' diagnoses, which results in people relying on herbal medicines.

Nevertheless, first-level healthcare facilities play a vital role in improving people's health. Of all the healthcare facilities available to the public, public health centers (*puskesmas*) and private practices run by a physician, midwife, or nurse are the main healthcare facilities people access when they need medical attention. However, the limited availability of medical specialists at *puskesmas* remains a big challenge for first-level healthcare facilities.

This study finds that the MCH condition was relatively good thanks to the role played by first-level healthcare facilities. The quantitative data shows that the majority of women both in the treatment and control areas already have safe childbirth. Women go to healthcare facilities, such as *puskesmas*, village maternity center (*polindes*), secondary *puskemas* (*pustu*), or midwives' private clinics, to have deliveries. This shows that first-level healthcare facilities in the treatment area ready to serve maternal patients and that many

women have accessed them. Related to child health, the two-year breastfeeding initiative was actually quite high, namely 91.4% in the treatment area and 84.4% in the control area. However, the exclusive breastfeeding practice is still low, showing mothers' low awareness of its importance. On the other hand, the percentage of children under the age of five routinely taken to the integrated health service post (*posyandu*) was very high, namely 95.6% in the treatment area and 97.5% in the control area. The routine *posyandu* visits by mothers and their children can contribute to improving mothers' knowledge of nutrition and to boosting the campaign to prevent stunting[ii] cases, which until now still occur in KSB.

The third issue regarding people's awareness of mercury hazards still presents challenges in the treatment and control areas. Around 48% of the people in the treatment area and 28% of the people in the control area reported that they know about mercury hazards. However, their knowledge about the dangers of mercury exposure comes from its connection to cosmetics, not from the illegal mining activities. Awareness campaigns to educate the communities about mercury hazards seem to be very limited. Only around 5% of the people in the control area and 8% of the people in the treatment area have ever received information about the dangers of mercury exposure. People's main sources of information were the internet, friends/relatives, and institutions, which do not specifically have a program to disseminate information about mercury hazards.

Social and Environmental Vulnerability

This report discusses several issues related to social and environmental vulnerability. They are (i) women categorized as socially vulnerable, (ii) community's social participation, and (iii) household waste management.

This study finds that around 10% of women were married at an early age; those are women aged 20–24 years who were married before they reached the age of 18, both in the treatment and control areas. In general, most women were married between the ages of 18 and 26. However, we can still find women who were married even at the age of 12. Early marriage is found mostly among women with a relatively low educational attainment. That is why the key to eliminating this practice is improving women's access to high education. The qualitative findings show that most children attending junior high school and senior high school were married because of unplanned pregnancy. This is despite the fact that a family unit where the husband and wife are married at an early age is socially and economically more vulnerable.

The second issue is related to gender equality. In this part, the discussion only includes indicators about the proportion of women who can make autonomous decisions on sexual relations, contraceptive use, and reproductive healthcare.

The result of the household survey reveals that the proportion of women having decision-making autonomy regarding their private matters was still relatively small, namely 46% in

[ii]Stunting is characterized by the deficit in height/ body length relative to the child's age. The condition is due to a prolonged nutritional problem or chronic nutritional problem (Kementerian Kesehatan, 2019). The score value is usually expressed as height-for-age z-score (HAZ). A child is said to suffer from stunting if the HAZ standard deviation is less than -2 (World Health Organization, 2006).

the treatment area and 52% in the control area. Women are said to have autonomy based on three indicators: (i) can say no to their husband/partner when they do not want to have sexual intercourse, (ii) can decide what contraceptives to use for themselves or together with their partner, and (iii) can make decisions on healthcare by themselves or with their partner/relatives. Of the three indicators, most women have the autonomy to decide on contraceptive use and healthcare (such as childbirth method and medicine intake). However, quite a lot of women still cannot say no to their husband's/partner's request for sexual intercourse when they do not want to.

The third issue is social participation, which reflects the performing of one's social role as a means to achieving social welfare. The social participation rate in the study areas was relatively low, while the participation rate in terms of actively expressing opinions was quite high. In terms of participation in a community meeting, men were found to be more active than women both in the treatment and control areas. The same thing happens with expressing opinions in a meeting; men were found to be more confident in voicing their opinions than women. The proportion of men who can voice their opinion was higher than that of women. In terms of social activities, however, women were found to be more active than men, notably in the treatment area. For instance, if there is a religious activity, *gotong royong* (communal work), *arisan* (social gathering in which members operate a rotating savings scheme), or death rituals/ceremonies in the community, more women are involved than men. Besides gender, people's social participation also varies between educational levels and age groups.

The fourth issue of household waste management is a reflection of environmental vulnerability at the household level. This study finds that not many households in both study areas have followed a sustainable waste management practice. The study findings show that not many households sorted their waste into organic and inorganic materials and only a small number of households ever received information about sorting or recycling waste. On the other hand, some households still burn their waste, while the practice can harm the environment and is potentially dangerous to the households themselves. The qualitative findings show that the awareness of waste management depends on several factors, such as the educational level of household heads and whether or not the household has received training in waste management. For instance, households who are informed about waste management will sort their waste and process it into an organic fertilizer. Therefore, education and training in sustainable waste management should be expanded to improve public awareness of a good waste management practice.

Closing

Recommendations

The recommendations proposed in this study are arranged with the objective of achieving both social and economic welfare of the communities living around the mining area. Looking at the results of the analyses of people's socioeconomic conditions and taking into account Amman's social responsibility and role in the region, we have formulated three strategies to achieve social welfare. These strategies are (i) strengthening the

healthcare system, (ii) strengthening the formal educational system, and (iii) improving the quality of human resources. To achieve economic welfare, we propose two strategies, namely (i) developing tourism potential and (ii) providing supports for MSEs. Each of these strategies has its own steps and targets.

Input for Further Studies

Further studies should pay attention to the technical and substantive aspects. The technical aspects are closely related to how the study is conducted, taking into account the study period so as not to disrupt the on-site data collection process. The study period of November and December is not recommended as this coincides with the anniversary of the region and the end-of-year holiday season. The time for conducting the study should also be coordinated with the timeline of other studies to avoid time conflict. This is also to avoid people's feeling overwhelmed or bored of becoming respondents/ informants, as this can affect the quality of the data collected in the field.

The substantive aspect includes strategic issues that should be the focus of the follow-up study. The substantive aspect is meant to obtain a better understanding of the issues discussed in this study, notably those which raise deep concerns. There are six issues which Amman can focus on in the next study. They are:

a) development of the tourism industry,
b) development of MSEs,
c) education/learning quality,
d) mapping of the nutritional status of children under five years of age at the village and *kecamatan* levels,
e) socioeconomic development in the region, and
f) the importance of conducting an endline study using the same/similar respondents and instruments so that we can compare the socioeconomic conditions of the communities and assess the impact of various community development programs.

I. Introduction

1.1 Background

Data from Statistics Indonesia (BPS) shows that Kabupaten Sumbawa Barat (KSB)'s economic growth has been fluctuating in the last five years. Its regional gross domestic product (GDP) grew 7.02% in 2016, but dropped to -34.6% in 2018 and -0,33% in 2021. Such a high fluctuation in KSB's economic growth has been caused mainly by the fluctuation in the growth of the mining sector. In the last five years, mining has become the key sector in KSB's economic growth, contributing 76%–87% to the total regional GDP. This raises a question regarding the socioeconomic condition of the communities living around the mining area in KSB.

Furthermore, data from the BPS also shows that KSB's poverty rate was higher than the national average. In the last five years, KSB's poverty rate has shown a decline, but in 2019 it stood at 13.9%; this means that more than 20,000 people in KSB lived in poverty. Nevertheless, the human development of KSB is relatively better than that of the West Nusa Tenggara (NTB) Province although it is still below the national average. KSB's Human Development Index (HDI) has consistently increased since 2016 and it reached 71.52 in 2019. This relatively high HDI score might be driven by relatively high educational levels and living standards of the people in KSB.

We can then conclude that the welfare dynamics in KSB are varied and interesting to be examined. Moreover, considering the high contribution of the mining sector to the regional GDP of KSB, The SMERU Research Institute, in collaboration with Amman's Social Impact Department, conducted a study with the topic of "A Baseline Assessment: The Socioeconomic Condition of the Communities around the Mining Area in Kabupaten Sumbawa Barat".

We hope that this assessment can help map the socioeconomic conditions of the communities living around the mining area in KSB and can provide input into the community development programs that will be implemented in the areas around the mine with the aim of improving the welfare of the people in KSB in general and the communities living around the mining area specifically.

1.2 Objectives of the Study

This study aims at providing the baseline data to help map the socioeconomic conditions and issues faced by the people living around the mining area in KSB. Moreover, this report can serve as the input for the community development programs which will be, or are being, developed in the areas surrounding the mine. This report can later be used as comparison data to see changes in several welfare indicators and to assess the impacts of various programs when conducting an endline study in the future. It is important to note that in general this study does not look at the impact of the mining industry on the

livelihood of the people in KSB. However, this study specifically has the following objectives.

a) To collect and analyze the baseline data so that we can study and understand the socioeconomic conditions of the people living around the mining area in KSB using several welfare indicators adapted from the national and international standards
b) To formulate recommendations as the input for the community development programs which will be, or are being, implemented in the areas surrounding the mine to improve the community's welfare

1.3 Conceptual Basis

The socioeconomic condition of a society is interconnected with the concept of social welfare and economic welfare. Economic welfare is closely related to the concept of social welfare and, in turn, both can be used to see welfare levels in general. At the macrolevel, both concepts can be used to see how far the social and economic development of a region has progressed. The concept of economic welfare which considers the social aspect was pioneered by Amartya Sen (1983), who stated that economic development measured based on people's income or the total production of goods and services must consider human capabilities and entitlements. The entitlements in this context include health, education, and being out of poverty.

Economic condition is usually measured using income and other related aspects, such as expenses, employment, and assets. At the macrolevel, the better the economic condition of a country (as reflected in GDP), the higher the country's probability to obtain higher standards of health, educational levels, and the fulfilment of other basic needs (Mankiw, 2016). The same principle applies on a household scale. A household with a better income or employment is more likely to obtain higher standards of health, higher educational levels, and the fulfilment of basic needs.

In Law No. 11 of 2009 on Social Welfare, social welfare is defined as "the condition in which the material, spiritual, and social needs of citizens are fulfilled, which enables them to have a decent life and develop themselves so that they can perform their social functions". Meanwhile, a social function, or "social functionality", is defined as "a condition which enables an individual, group, and community to have their basic needs and rights fulfilled, to perform their social duties and roles, and to overcome issues in their lives" (Law No. 14 of 2019 on Social Workers, Article 1). Based on this definition, the concept of social welfare can be simplified as the fulfilment of basic needs, the carrying out of social roles, and the solving of life problems of an individual or a family.

The fulfilment of basic needs is closely linked to the fulfilment of material needs, which can be measured through economic condition. Meanwhile, performing one's social role can be translated as an individual's active participation—social, economic, and political—in the society to overcome their social issues (Narayan, 2002). The capability to overcome social issues, including poverty, depends on several factors; one of them is an individual's economic capacity, which in this context is often referred to as empowerment. We can measure an individual's empowerment based on their access to economic opportunities and their ability to move out of vulnerability. On the other hand, environmental aspects

need to be taken into account in measuring the socioeconomic condition of a community, as advised in one of the pillars of the Sustainable Development Goals (SDGs). This is because people's welfare is intertwined with environmental condition. Clean, healthy, and sustainable environment can promote the realization of people's welfare.

In this study, socioeconomic welfare is analyzed from various aspects derived from the concept of social and economic welfare. Besides the theoretical basis, these aspects should consider the Theory of Change (ToC) framework from Amman Social Impact Department, which is used as the basis for the implementation of Amman's community development programs. The framework introduces three main pillars in the implementation of community development programs: (i) human resource development, (ii) economic empowerment, and (iii) sustainable tourism. These three pillars serve as the basis for achieving the community development programs' main objective, namely preparing the ecosystem for the communities living around the mining area so that they are resilient when facing future challenges. In addition to the community development programs' framework, the values or principles in some of the program-related documents, such as SDGs; International Council on Mining and Metals (ICMM); International Organization for Standardization (ISO) 26000; Environmental, Social, and Governance (ESG); Program for Pollution Control, Evaluation, and Rating (PROPER); KSB's Regional Medium-term Development Plan (RPJMD); and Amman's vision and mission (including its ToC), should also be considered when selecting welfare indicators to be used in this study. It is worth noting that most indicators in this study are those that serve as outcomes or, at least, as output.

Based on this background, the socioeconomic condition in this study is divided into 7 aspects of welfare and 70 indicators which refer to the documents mentioned above. Therefore, recommendations for community development programs presented in the end of this report also refer to the concept of social and economic welfare as per this study's framework. In this report, the indicators included in the analysis are those which present interesting dynamics for further analyses in the study areas, while the data table for each indicator is presented in the Appendices. The summary of the aspects and subaspects included in this report is presented in Table 1.

Table 1. Aspects, Subaspects, and Indicators

No	Aspects	Subaspects/Indicators
1	Health	Health insurance coverage
		Access to health facilities when falling ill
		Utilization of health insurance when falling ill
		Safe childbirth
		Breastfeeding and integrated health post (*posyandu*) activities
		Smoking habit
		People's awareness of mercury hazards
2	Education	Mean years of schooling
		Net enrollment rates (NER) at the early childhood education, elementary school, junior high school, senior high school, and college/university levels
3	Basic infrastructure	Access to improved water
		Access to proper sanitation
4	Employment	Employment rate
		Average wage
		Unemployment rate
5	Economic infrastructure	Access to the internet
		Access to banking institutions
6	Economic development of the nonmining sector	Employment rate in the tourism sector
		Employment rate in the micro-, small-, and medium-scale enterprise (MSME) sector
7	Social and environment vulnerability	Child marriage
		Women's autonomy in health-related decision-making
		Social participation
		Tolerance
		Household waste management

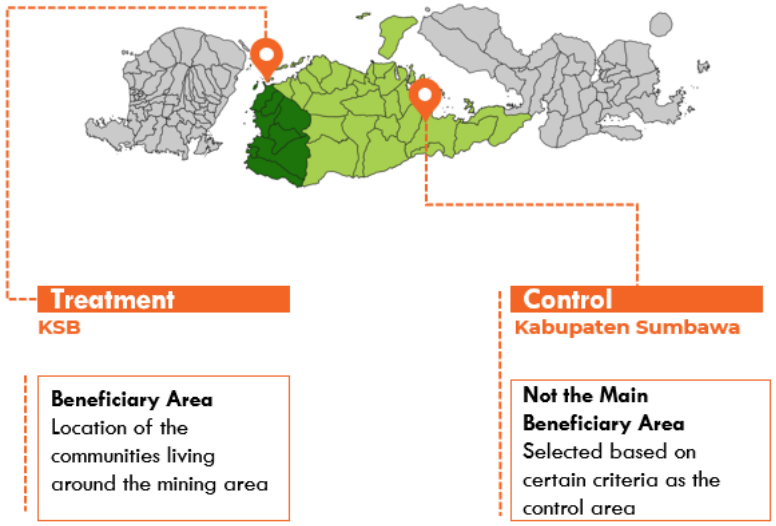
1.4 Methodology[1]

This study was conducted in KSB as the treatment area—which was the focus of the research—and Kabupaten Sumbawa as the control area. Having the two types of study areas is very important because the baseline data of this study will be used as an instrument to measure the impact of the community development programs. The

[1]More complete details about the methodology are presented in the inception report.

treatment area is an area around the mine which would later be the beneficiary of the community development program; the control area is an area with the characteristics similar to those of the treatment area, but is not designated as the program's main beneficiary.

Figure 1. Study Areas



Note: Not all villages and *kecamatan* in Kabupaten Sumbawa and KSB can be used as the focus of the study areas.

The names of the study *kecamatan* in this report are disguised using the alphabet A, B, C, and so on (for example, Kecamatan A and Kecamatan B). As for the study villages, their names are disguised using the alphabet and numbers (for example, Village A1, Village A2, Village B1, and Village B2).

This study used quantitative and qualitative approaches. Using both approaches would allow the research team to receive more comprehensive socioeconomic data for the analysis. The data was collected in November 2022. After collecting the quantitative and qualitative data, the research team conducted the analysis and used other relevant sources of secondary data, such data from the BPS and other institutions.

1.4.1 Quantitative Approach

a) The Quantitative Study Areas

To collect quantitative data in the treatment area, the research team focused on the *kecamatan* located around Amman's mining areas and some other *kecamatan* in KSB with the potential of becoming the beneficiary of the community development programs. As for the control area, the research team chose Kabupaten Sumbawa after previously looking at several macroeconomic indicators (from the BPS), coupled with several considerations based on a discussion with Amman's Social Impact Team. For the control area, the selection of the *kecamatan* paid attention to the following criteria.

a) The *kecamatan* has not become the priority *kecamatan* of the community development programs from Amman's Social Impact Team.
b) The *kecamatan* is currently not receiving any community development programs from any nongovernmental organizations (NGOs) or other corporations.
c) The *kecamatan* has the characteristics similar to those in the treatment area.

Based on those criteria, the team selected nine study *kecamatan* comprising six treatment *kecamatan* (A, B, C, D, E, and F) and three control *kecamatan* (G, H, and I). In the final selection of the study *kecamatan*, the team conducted an onsite data verification process (a field visit) by regional researchers to ensure that the selected *kecamatan* met the qualitative team's criteria for the treatment and control study areas.

b) Selection of Respondents and Quantitative Instruments

To collect data, the quantitative team conducted a face-to-face survey at the household level using the random sampling method. With this method, households were randomly selected, meaning that they had the same chance of being selected to become a sample/respondent.

The number of respondents was determined based on the number of households in KSB (36,932 households) and the number of households in the 6 selected *kecamatan* (28,183 households) (Badan Pusat Statistik Kabupaten Sumbawa Barat, 2022). Therefore, referring to the Slovin's formula with confidence level by 95% and 5% margin of error (Adanza, 1962), there should be a minimum of 395 sample households to represent the 6 beneficiary *kecamatan* in KSB. To reinforce the representation of the treatment *kecamatan*, the research team took a total of 600 respondents in the area. As for the number of samples in each *kecamatan*, the research team prioritized Kecamatan A, B, and C which directly border with the mining area; the rest was determined proportionately based on the number of households in Kecamatan D, E, and F.

The research team used the same formula and margin of error to calculate the required number of respondents in the control area. The team decided on a total of 400 respondents divided proportionately per *kecamatan* according to the number of households in Kecamatan G, H, and I. This strategy is expected to make it easier for the research team to analyze changes in the output/outcomes between the treatment and control areas when conducting an endline study in the future.

Moreover, the team also needed to ensure that the selected households in both study areas meet at least two of the three criteria: (i) have school-age children (5–17 years old), (ii) have young household members (16–30 years old), and (iii) have female household members aged 6–49 years who have been married/given birth. The three criteria were determined based on the criteria for community development programs which Amman has often used.

Next, in conducting a survey to collect data, the quantitative team used a special questionnaire to collect pieces of information important and relevant to this baseline study. They were then grouped into several research modules, each of which consisted of some questions (Table 2).

Table 2. Outline of the Survey Questionnaire

Module	Note	Description	Level
E	Households' eligibility	Containing information about households' eligibility. This module contains some sets of questions to ensure the household being interviewed meets the criteria to become a respondent.	Household
S	Households' location	Containing information about households' location. This module contains several sets of questions about the complete address of the respondent and some information about the main respondent. This module also provides information about the coordinate of the household's location to make it easy to find the household in the next survey.	Household
A	Household members' eligibility	Containing information about household members' eligibility. This module contains several sets of questions to ensure which household members are relevant for data collection. To be a respondent, a household member needs to meet certain criteria.	Individual
R	Household members	Containing general information about household members, such as sex, age, education, marital status, etc. If the household members concerned are not available, information on the answers can be provided by other household members.	Individual
W	Employment	Containing information about household members aged five years or above in terms of their activities, occupation, and job searching activities. If the household members concerned are not available, information on the answers can be provided by other household members.	Individual
P	Tourism	Containing information about the activities of household members aged five years or above participating in tourism-related economic activities. Information on the answers cannot be provided by other household members.	Individual
U	MSMEs	Containing information about the activities of household members aged five years or above who own a business. Information on the answers cannot be provided by other household members.	Individual
B	Sociocultural	Containing information about the activities of household members aged five years or above involved in social and cultural activities in the community. Information on the answers cannot be provided by other household members.	Individual
K	Health	Containing information about the brief medical history of household members. If the household members concerned are not available, information	Individual

Module	Note	Description	Level
		on the answers cannot be provided by other household members.	
I	Maternal and child health (MCH) and reproductive health	Containing information about MCH and reproductive health. Information on the answers cannot be provided by other household members; however, information about children under five years old need to come from adults who take care of them.	Individual
H	Households	Containing information about housing condition and family's livelihood.	Household

c) Quantitative Data Analysis

The quantitative team conducted an analysis of social and economic indicators that had been previously calculated using the primary data from the quantitative survey. The calculation was then combined with some secondary data and the data collected by the qualitative team. A descriptive analysis using these kinds of data was also conducted. Moreover, the quantitative team conducted several simple statistical tests to learn about the relationship or discrepancies between indicators. By doing so, it was expected that the result of the analysis by the quantitative team could provide deeper insights into the issues and socioeconomic conditions in the study areas.

1.4.2 Qualitative Method

a) Qualitative Study Areas

The qualitative data collection was conducted in the control and treatment areas. Of all the quantitative treatment *kecamatan*, two *kecamatan* were chosen as the qualitative treatment study areas. From each selected *kecamatan*, the team selected one village. This means that the qualitative study treatment area comprised two *kecamatan* and two villages in KSB. Meanwhile, the qualitative data collection in the control areas was conducted in only one village in the quantitative control area. The selection of *kecamatan* and villages in both the treatment and control areas used the purposive sampling method (Table 3).

Table 3. Selection of *Kecamatan* and Villages in the Qualitative Study Areas

Area	*Kecamatan*	Village	Note
Treatment	A	A3	Area with rural characteristics
			The community's livelihood sector being primarily farming
			Village with tourism potential
Treatment	C	C2	Area with urban characteristics
			The community's livelihood sectors being primarily trade, MSMEs, and services
			Diverse community, including migrants coming to work/run a business in the mining sector/its supporting sector
Control	H	H4	*Kecamatan* with livelihood-supporting conditions most closely resembling the treatment *kecamatan*, based on the Village Potential Data (Podes) released by the BPS
			Village with the characteristics of the livelihood sector resembling those in the treatment village, namely farming, trade, MSMEs, and services

b) Qualitative Study Informants

The qualitative team began qualitative primary data collection by conducting online interviews with three Amman's program partners that represented the three pillars of the community development programs. Furthermore, qualitative primary data collection was conducted in person at the study location. In the treatment area, the qualitative primary data was obtained from informants at the household, village, *kecamatan*, and *kabupaten* levels. In the control area, the qualitative data was obtained from informants at the household and village levels. Data collection began from the treatment area by interviewing informants at the household, village, and *kecamatan* levels, in both Kecamatan A and Kecamatan C. This was followed by data collection at the *kabupaten* level. Then, the team collected data from Desa H4 in the control area. In total, 47 informants (from institutions and as individuals) were interviewed by the qualitative team.

Informants in each area and at each level were chosen based on the need for data. Using the interview guidelines, the team conducted an in-depth interview with each informant with the aim of collecting information regarding certain aspects. The primary data collection was accompanied by relevant secondary data collection. Table 4 shows the qualitative informants and aspects which the research team looked for in the interview.

Table 4. Qualitative Informants and Objectives of the Interviews

Level	Category	Informant	Aspects Examined during In-depth Interviews
	Amman's program partners	Bije Jari	Knowledge about the dynamics of the community development programs and regional economic potential
		United Tractors (UT) School	
		Narasa	
Kabupaten	Government agencies	Regional Development Planning Agency (Bappeda)	Economic development of nonmining sectors
		Education agency	Education
		Labor and transmigration agency	Employment
		Youth, tourism, and sports agency	Economic development of nonmining sectors
		Cooperatives, industry, and trade affairs agency	Economic development of nonmining sectors
		Health agency	Health
	Business association	MSME Communication Forum (FK-UMKM)	Economic development of nonmining sectors
	Educational institutions	School (vocational high school)	Education
	Donation agencies, working for the socioeconomic improvement of the society/ community[a]	National Alms Agency (Baznas)	Economic infrastructure
Kecamatan	Educational institutions	School (junior high school)	Education
	Health services	Community health center (*puskesmas*)	Health, social and environmental vulnerability, basic infrastructure
	Financial services	Cooperatives with financial services for MSMEs	Economic infrastructure
Village	Village government	Village government	Education, health, employment, social and environmental vulnerability, economic development of nonmining sectors
	Community figure	Community figure (male)	Health, basic infrastructure, employment, social and environmental vulnerability
		Community figure (female)	

Level	Category	Informant	Aspects Examined during In-depth Interviews
	Youth figure	Youth figure (male)	Employment, economic infrastructure, economic development of nonmining sectors
		Youth figure (female)	
Household	Household	Households with school-age children (5–18 years old) attending school	Education, health, basic infrastructure, economic infrastructure, employment, economic development of nonmining sectors, social and environmental vulnerability
		Households with children under five years old	
		Households working and/or running a business in the tourism sector	
		Households owning a business	
		Households working as formal employees	

[a]There was no financial service based on the criteria of informants in Kecamatan C (treatment area), so it was substituted with an agency (Baznas) at the *kabupaten* level.

c) Qualitative Data Analysis

The team conducted data triangulation to examine information/data on the same aspect with interview results from different informants. The triangulation was conducted to achieve a comprehensive understanding of the aspects being studied and the validity of the collected data. Next, the team conducted the analysis by checking and interpreting the qualitative data to understand what the data represents. In this study, the analysis of the qualitative data and that of the quantitative data would complement each other. The qualitative data is presented in the form of narratives, interview quotes, and story boxes.

1.5 Scope and Limitations of the Study

This subchapter explains the scope and limitations of this study so that readers can better understand the limitations in the analysis. First, regarding the study areas, even though the research team collected data in two *kabupaten* (KSB and Kabupaten Sumbawa), the data collected does not necessarily represent the overall condition at the *kabupaten* level. The data collected is only used to represent the program beneficiary group (treatment) and the nonbeneficiary group (control). Next, in formulating some of the social and economic indicators for the study, the research team collected 70 indicators which meet the national and international standards. In this report, only several indicators would be analyzed as per the description in Subchapter 1.3. Third, the quantitative research team did not collect data on household members who were living outside the study areas during the course of the study. Thus, several indicators were unable to provide a description of the population with such a criterion. Finally, as previously explained, this study considers several theoretical aspects and frameworks, including the ToC of Amman Social Impact

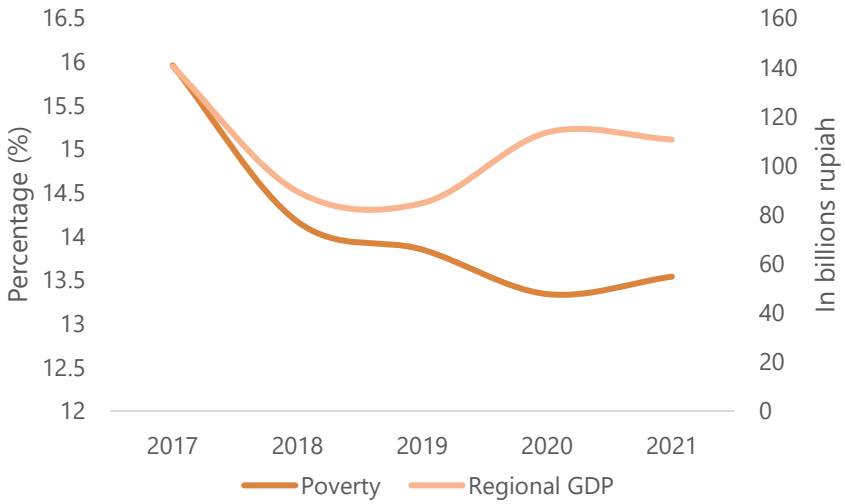
Department (used as the basis for implementing corporate community development programs), SDGs, ICMM, ISO26000, ESG, PROPER, and KSB's Medium-term Development Plan (RPJMD). Therefore, the focus of the analysis was selected by referring to these documents; for example, the discussion relating to the nonmining aspect focuses on the tourism and MSME sectors.

II. General Condition of the Study Areas

2.1 Regional GDP and Poverty

KSB is located on the western part of Sumbawa Island and is part of the NTB Province. KSB comprises eight *kecamatan* (Sekongkang, Jereweh, Maluk, Taliwang, Brang Ene, Brang Rea, Seteluk, and Poto Tano) divided into 64 villages/*kelurahan*[2]. In terms of macroeconomy, KSB's regional GDP volume reached Rp110.58 million in 2021 and was the highest in NTB. The economic growth in the region has sharply fluctuated. For example, in 2018, its regional GDP dropped to -34.6%, but then jumped to almost 29% in 2020. The high volume of regional GDP is inseparable from the mining sector's contribution, which reached 82%, higher than all other sectors in KSB combined (Badan Pusat Statistik Kabupaten Sumbawa Barat, 2022). Even though the region enjoyed high economic and regional GDP growth, its poverty rate has remained high, namely 13.5% in 2021, compared with the national average (10.14%) although it is better than the provincial level (14.14%). That figure means that around 21,500 people in KSB were categorized as poor (Figure 2).

Figure 2. Regional GDP and Poverty Rates in KSB, 2017–2021



Source: Badan Pusat Statistik, 2022; Badan Pusat Statistik Kabupaten Sumbawa Barat, 2022

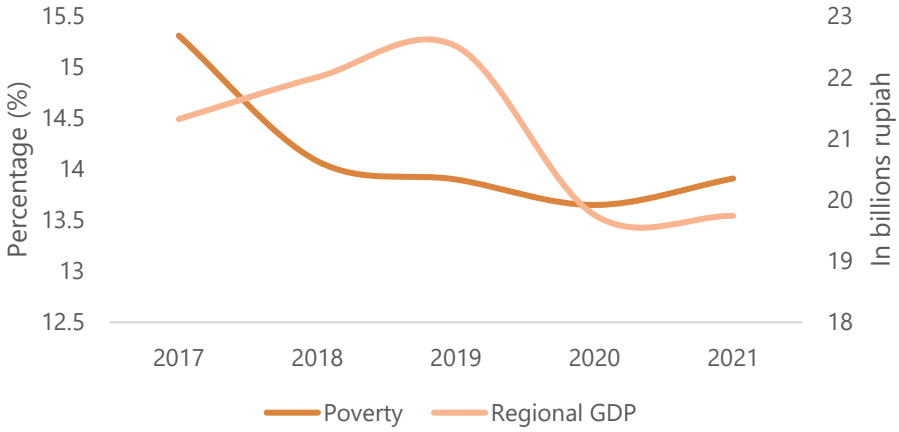
Meanwhile, Kabupaten Sumbawa has an area of around 6,643 km^2, comprising 24 *kecamata*n, 157 villages, eight *kelurahan*, and 636 *dusun*[3]. Kabupaten Sumbawa's economy is dominated by the farming, forestry, and fishery sectors which contributed 39.5% to its regional GDP (Badan Pusat Statistik Kabupaten Sumbawa, 2022). The economic growth of the *kabupaten* has shown a positive trend, except in 2020 due to the coronavirus disease 2019 (COVID-19) pandemic. Kabupaten Sumbawa's poverty rate, however, is still relatively

[2]A *kelurahan* is a village-level administrative area located in an urban center.

[3]A *dusun* is an administrative area within a village, consisting of a number of neighborhood units (RT).

high even though it has been on a downtrend. In 2021, during the postpandemic period, it showed an uptrend to 13.9% with 66,000 people living in poverty (Badan Pusat Statistik Provinsi Nusa Tenggara Barat, 2022).

Figure 3. Regional GDP and Poverty Rates in Kabupaten Sumbawa, 2017–2021



Source: Badan Pusat Statistik, 2022; dan Badan Pusat Statistik Provinsi Nusa Tenggara Barat, 2022

2.2 Profiles of the Surveyed Communities

Based on our quantitative survey, we obtained 597 households in the treatment area and 398 households in the control area with a total of 3,828 individuals (Table 5). The result of our quantitative survey was dominated by households residing in the treatment area, as described in Subchapter 1.4.1.

Table 5. Number and Percentage of the Households and People Surveyed

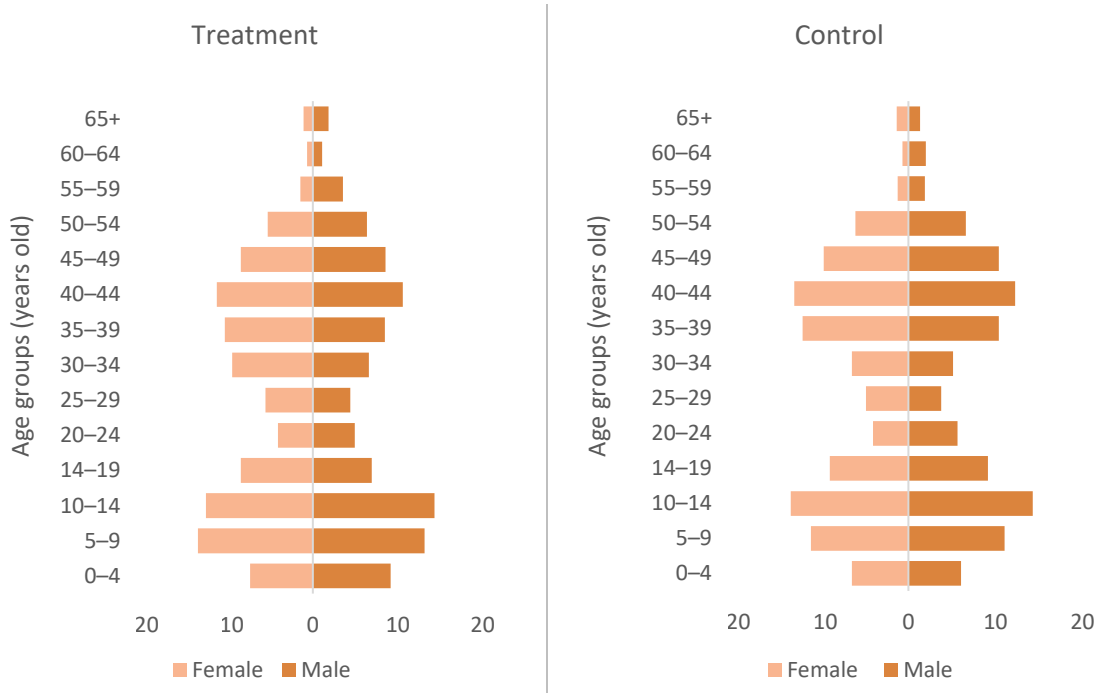
Gender	Treatment	Control	Total
Households	597	398	995[a]
(%)	60	40	
People	2,346	1,482	3,828
(%)	61.29	38.71	
Male	1,180	742	1,922
(%)	50.30	50.07	50.21
Female	1,166	740	1,906
(%)	49.70	49.93	49.79

Source: SMERU's survey, 2022

[a]The actual number of household respondents obtained was 1,000 households. However, during the data cleaning process, data from 5 observation units could not be verified and validated, so at the end we had clean data of 995 households.

If we look at the number of the population, the treatment and control areas are dominated by children (5–17 years old) and adults (above 30 years old) (Figure 4). In both study areas, young people (18–30 years old) were not easy to find.

Figure 4. Pyramid of the Population in the Control and Treatment Areas



Source: SMERU's survey, 2022

It appears that more young people (youth group) work or pursue education outside the regions, either outside of the *kabupaten* or the island. With the relatively small number of young people in both study areas, it is not surprising that the percentage of the productive-age population is only around 32%–37% (Table 6). This has led to a relatively high population dependency ratio in both study areas. The high dependency ratio shows that the productive-age population bears higher burden to support the nonproductive-age population, such as children and older people.

Table 6. Population Dependency Ratio

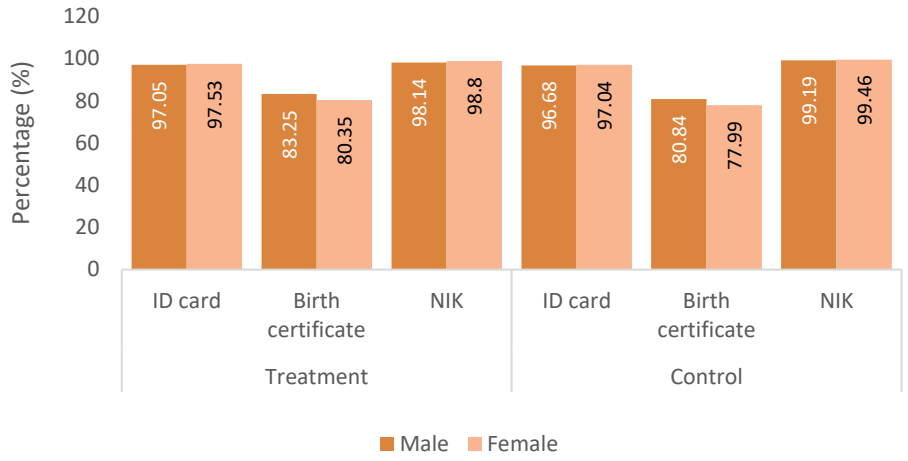
Indicator	Treatment	Control
Nonproductive-age population	1,488	998
	(63.43%)	(67.34%)
Productive-age population	858	484
	(36.57%)	(32.66%)
Population dependency ratio	173.43	206.20

Source: SMERU's survey, 2022

The majority of the population in both study areas already have proper administrative documents, such as an identification (ID) card or a population identification number (NIK)

(Figure 5). This shows relatively good population administration, which will help ease the implementation of any development or assistance programs. Nevertheless, 20% of the population still do not have a birth certificate.

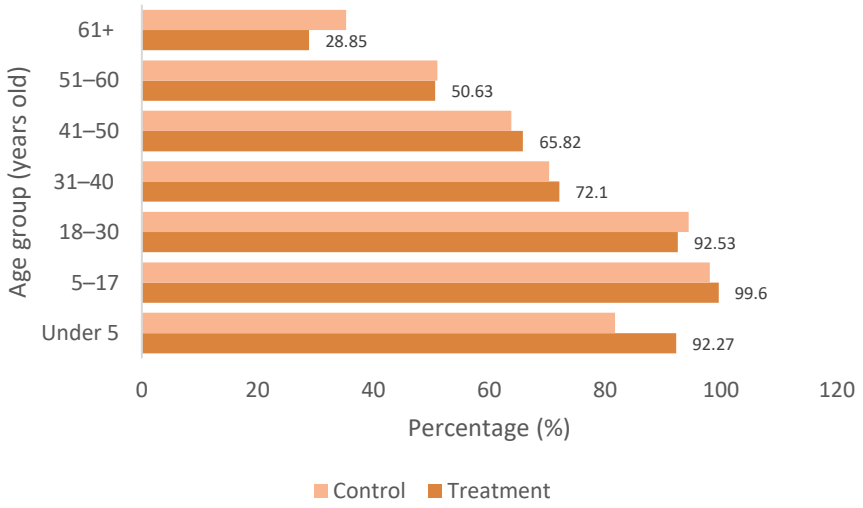
Figure 5. Percentage of the Population with Administrative Documents



Source: SMERU's survey, 2022

The good news is that the percentage of birth certificate ownership among children has already reached 99% (Figure 6). The percentage of children under five years old with a birth certificate is also above 90%. Individuals with no birth certificate were found mostly among older people. This is quite understandable, as in the past birth certificate ownership was not considered necessary by many.

Figure 6. Percentage of the Population with a Birth Certificate by Age Group

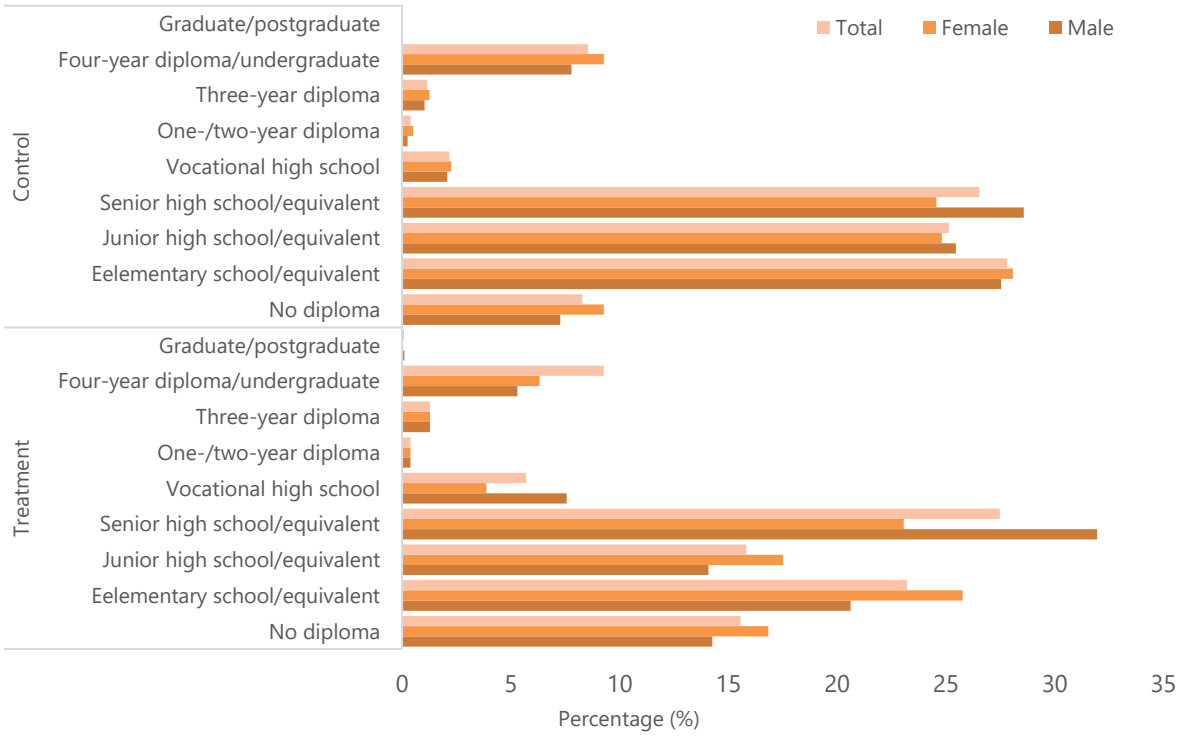


Source: SMERU's survey, 2022

As many as 55% of the population in the treatment area who no longer belong to the school-age group have the highest educational attainment of junior high school or below, as compared to 61% in the control area (Figure 7). The research team could not find

people having a graduate or postgraduate degree in the control area, but at least one respondent from the survey in the treatment area had a graduate degree (0.17%). The relatively low education attainment shows that the previous generation might not have the ability to pursue higher levels of education.

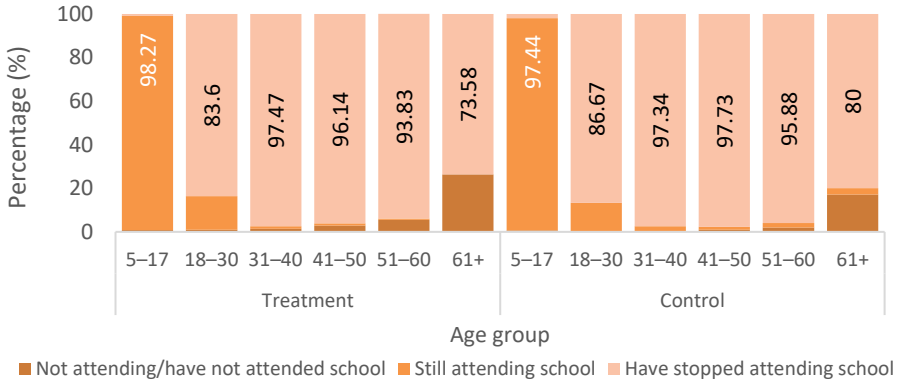
Figure 7. Percentage of the Population Aged 24 Years or Above by Educational Attainment



Source: SMERU's survey, 2022

More than one-third of the population in both study areas are still attending school and at least 1%–2% do not go to, or have not attended, school. Most of the people who have never or have not yet attended school are those aged above 40. However, at least nine school-age children (0.74%) in both study areas do not go to school.

Figure 8. School Status of the Population by Age Group



Source: SMERU's survey, 2022

2.3 Profiles of the Surveyed Households

The survey shows that households in both areas have four household members on average. The mean age of household heads is 43 years old with most of them being men. The mean years of schooling of household heads is 9.4 years or equal to junior high school (Table 7).

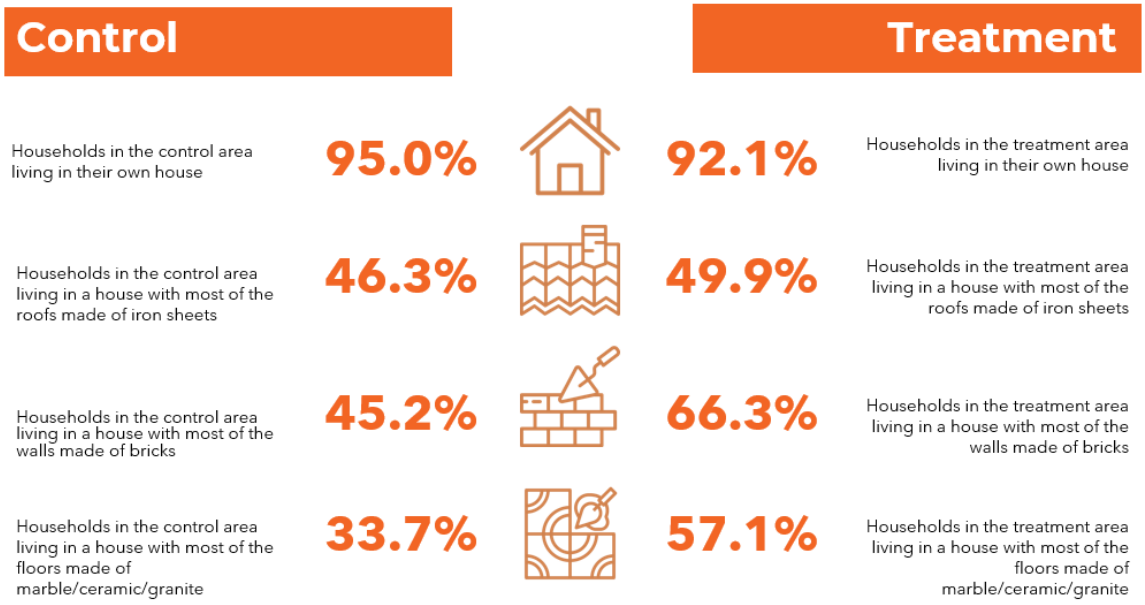
Table 7. Household Profiles

Note	Treatment	Control
Number of household members	4.2 people	3.9 people
Mean years of schooling of household heads	9.4 years	9.4 years
Age of household heads	43.6 years old	43.7 years old
Percentage of female household heads	6.5%	5.5%
Percentage of male household heads	93.5%	94.5%

Source: SMERU's survey, 2022

Based on the house ownership status, most households live in a house they own and some live in a rented house, a rent-free house (owned by parents/relatives or others) or official residences. The proportion of households living their own house is slightly higher in the control area (95%) than in the treatment area (92%) (Figure 9).

Figure 9. Household Profiles



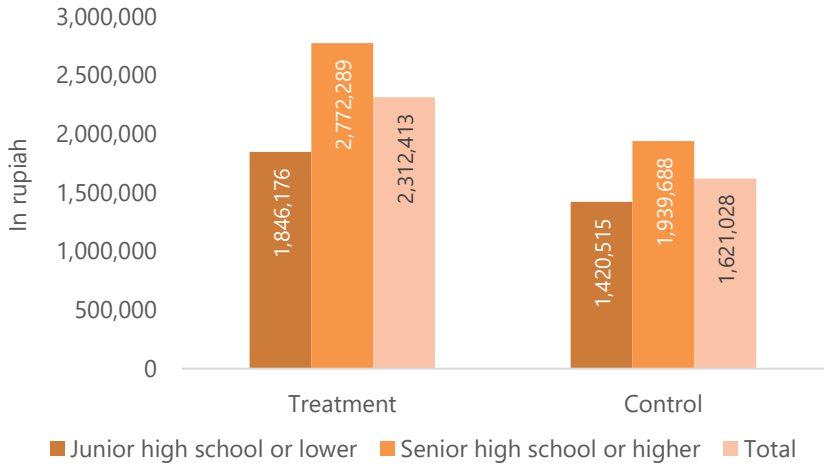
Source: SMERU's survey, 2022

Most households, especially in the treatment area, live in a house with roofs made of iron sheets and some live in a house with roofs made of clay tiles. Around 66% of the

households in the treatment area live in a house with brick walls. Meanwhile, in the control area, 45% of the households live in a house with brick walls and 26% live in a house with nonplastered brick walls. Around 12% of the households in the treatment area and 18% of the households in the control area live in a house with wooden roofs.

As for the materials used for the floors, most households in the treatment area live in a house with ceramic or granite floors, whereas in the control area, many still live in a house with cemented or brick floors. In both areas, only a small number of households live in a house with roofs made of straw, palm fiber, or even leaves. This shows the characteristics (materials for the roof, floor, and wall) of a livable house.[4]

Figure 10. Average Household Monthly Expenditure by Household Heads' Educational Attainment



Source: SMERU's survey, 2022

The average household expenditure is Rp2.3 million in the treatment area and Rp1.6 million in the control area (Figure 10). Households where the head has attained senior high school education or higher have higher expenditure on average than households whose head has attained junior high school education or lower. This is evident in both study areas.

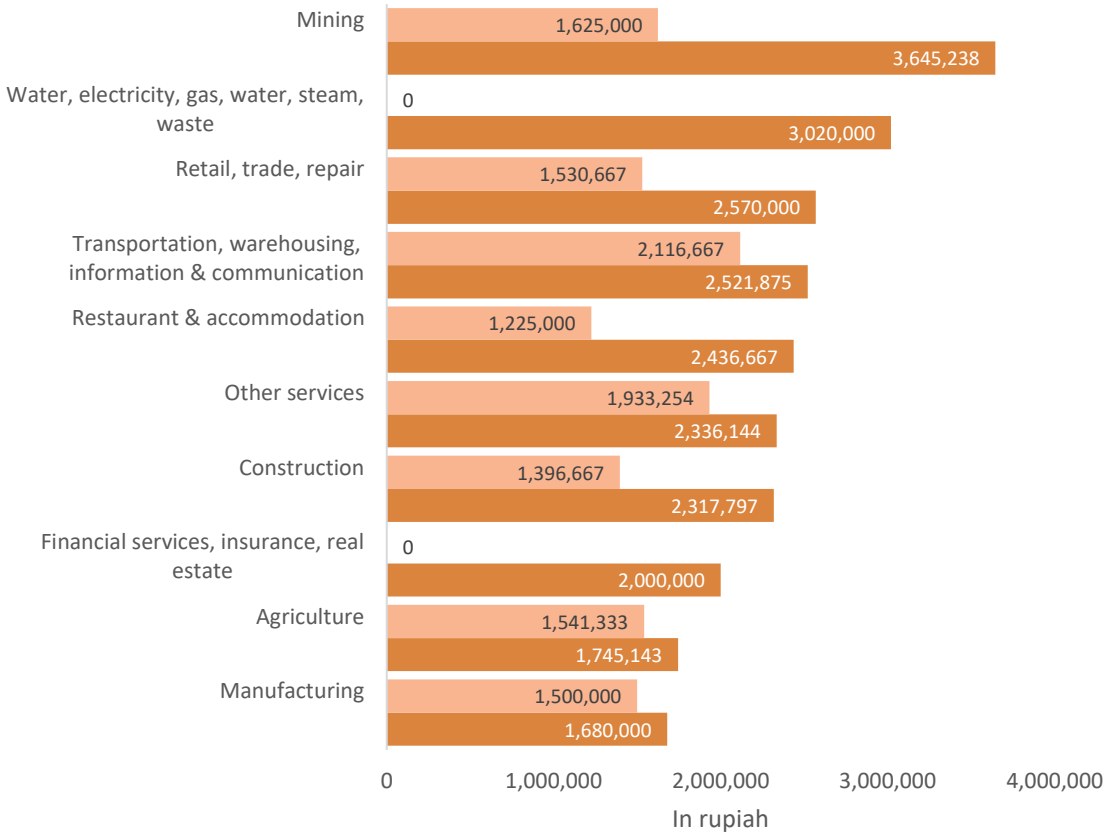
Difference in average household expenditure is found between employment sectors where household heads work (Figure 11). In the treatment area, households whose head works in the mining sector have higher average expenditure, reaching Rp3.6 million per month, than households whose head works in other sectors. Among the households with the lowest expenditure, i.e., between Rp1.6 million and Rp1.7 million per month, are households whose head works in the manufacturing and agriculture sectors. The manufacturing sector discussed in this study includes the micro- and small-scale household industry. Meanwhile, households with the highest expenditure (Rp2.1 million) in the control area are those whose head works in the transportation, warehousing, and

[4]Building materials are three of the seven characteristics of a livable house, namely (i) roof materials, (ii) floor materials, (iii) wall materials, (iv) floor area for each household member, (v) access to improved drinking water, (vi) access to proper sanitation, and (vii) access to electricity.

information and communication sector, while households with the lowest expenditure (Rp1.2 million) are those whose head works in the restaurant and accommodation sector.

Regarding the labor force participation rate (LFPR), both the treatment and control areas have higher male LFPR than female LFPR, especially for people with senior high school education or higher. LFPR for men with senior high school education or higher is 93% in the treatment area and 89.7% in the control area. Meanwhile, LFPR for women in both study areas is between 24% and 30% for those with junior high school education or lower and between 55% and 64% for those with senior high school education or higher.

Figure 11. Households' Average Monthly Expenditure by Household Heads' Employment Sector[5]



Source: SMERU's survey, 2022

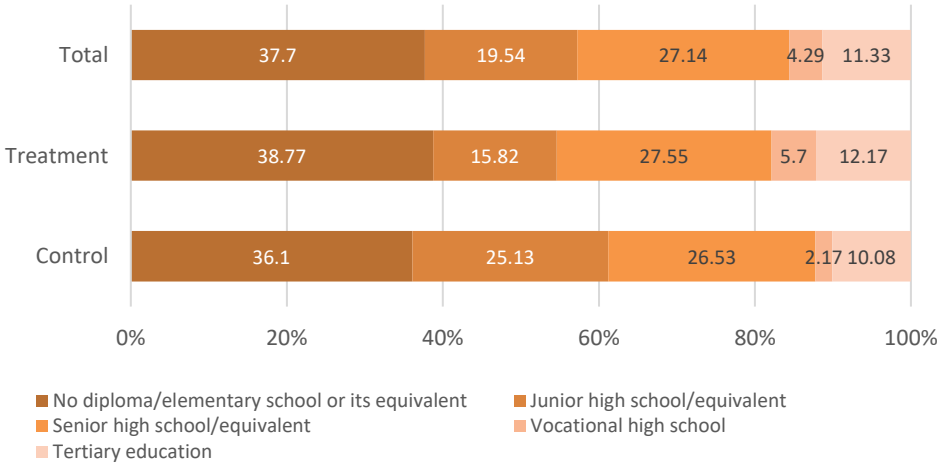
[5]In this report, other services refer to the categories of corporate services, government administration, defense, compulsory social security, education services, health services, social services, and activity services from the representatives of foreign institutions (World Bank, United Nations, etc.).

III. Socioeconomic Analysis of the Communities Living around the Mining Area

3.1 Education

There are some interesting findings regarding education. The first one is that the majority of the nonschool-age population in the study areas have a low educational attainment. Figure 12 shows that most of the people aged above 24 years do not have a school diploma or only finished elementary school or its equivalent. This shows a high proportion of the population with low educational attainment (junior high school or lower) in the treatment area (54.59%) and in the control area (61.22%). Other education-related indicators, such as mean years of schooling, also point to the similar conclusion. The mean years of schooling are 9.3 years in the treatment area and 9.4 years in the control area; this is equivalent to the junior high school level/equivalent.

Figure 12. Educational Attainment of the Population Aged above 24 Years



Source: SMERU's survey, 2022

This finding raises a concern. At the national level, the government has launched the implementation of the universal secondary school education, i.e., providing services for the community to attend secondary education (senior high school/equivalent).[6] In fact, in the National Education System Bill August 2022, there is a proposal to extend the compulsory education to 13 years, namely by including the preschool education (class 0). In the treatment area, the *kabupaten* government has enforced the 12-year compulsory education through the Regional Regulation of KSB No. 23 of 2008 on the Twelve-Year

[6]based on the Regulation of the Ministry of Education and Culture No. 80 of 2013 on Universal Secondary Education

Compulsory Education Program in KSB. Though this regulation, the Government of KSB has guaranteed the implementation of the compulsory education program at least at the elementary and secondary education levels or equivalent without any tuition fees. Furthermore, the governments of both study areas have also determined the compulsory early-childhood education for one year before enrolling elementary school, which is regulated in the Regulation of Bupati[7] KSB No. 45 of 2020 on One-Year Compulsory Early Childhood Education (the treatment area) and Regulation of Bupati Kabupaten Sumbawa No. 96 of 2020 on the Administration of One-Year Compulsory Early Childhood Education in Kabupaten Sumbawa (the control area). The issuance of these regulations and the educational attainment of the people in the study areas indicate that more efforts are needed to ensure that the communities have access to education.

The second finding is the low number of vocational high school graduates, compared to senior high school ones. Figure 12 shows that the proportion of vocational high school graduates is relatively smaller than that of senior high school graduates. There are only 5.7% vocational high school graduates in the treatment area and 2.2% in the control area. This is caused by, among other things, the small number of vocational high schools (low supply) compared to that of senior high schools in the study area. In the 2019/2020 academic year, for example, there were ten senior high schools and six vocational high schools in KSB (Dinas Pendidikan dan Kebudayaan Provinsi Nusa Tenggara Barat, 2020).

The third finding is that there is an issue relating to educational facilities and teaching personnel. Regarding preschool education, based on the information from KSB Education Agency, public preschools have been available in all *kecamatan* in the treatment area (eight *kecamatan*). However, in terms of distribution, some villages still do not have public preschools. The shortage of public preschools has been overcome by the presence of private preschools, so in every village there has been at least one preschool. In terms of teaching personnel, there are still preschool teachers with senior high school education/equivalent or a bachelor's degree in nonearly childhood teacher education.

Regarding elementary education, elementary schools have been widely distributed to villages in the treatment area although there has been a shortage of classrooms as the number of study cohorts has increased. All elementary school teachers have a bachelor's degree although not all of them have an elementary school teacher education degree. Interviews with the sample junior high school in the treatment area in Kecamatan C revealed that the school still faced school facility-related issues, namely a shortage of teachers for certain subjects and facilities at their language laboratory. At the sample junior high school in Kecamatan A, they reported having an issue in terms of teachers' understanding of the Merdeka Belajar Curriculum.

The qualitative findings reveal that the sample vocational high school in Kecamatan C (the treatment area) was faced with a shortage of productive teachers[8] for the engineering and culinary arts departments, as well as a lack of learning facilities for the department of

[7]head of the *kabupaten*

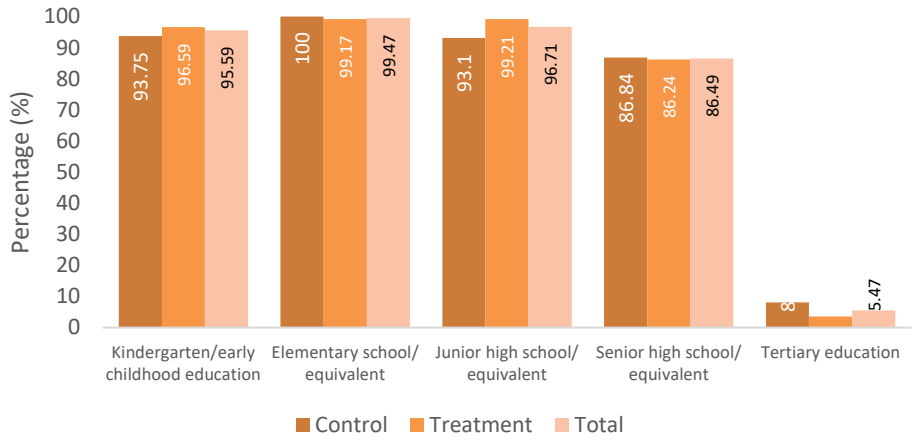
[8]At vocational high school, there are normative teachers, adaptive teachers, and productive teachers. Normative teachers are teachers who teach Indonesian and English subjects. Adaptive teachers are teachers who teach Biology, Physics, and Mathematics. Productive teachers are teachers who teach subjects according to their profession.

tourism. The school has attempted to overcome this issue by enabling the normative teachers to become productive ones, inviting practitioners to become guest teachers as per their expertise, and making a request for learning facilities to the *kabupaten* education agency.

As for out-of-school education, there is no formal tutoring institution in the treatment area. However, there have been individual tutors that go to the students' home.

The fourth finding is that there are still out-of-school children (OOSC), namely those who drop out of school or do not continue to higher education levels. Despite the high NER, not all indicators have reached 100%, especially at the senior high school level/equivalent which is within the 12-year compulsory education age range (Figure 13).

Figure 13. NER at Each Educational Level



Source: SMERU's survey, 2022

Table 8. Reasons for Not Continuing School

Reasons for Not Continuing Schol	Control			Treatment		
	Male	Female	Total	Male	Female	Total
Money problem	40.0%	43.6%	41.4%	53.0%	53.0%	53.0%
Working	16.7%	15.4%	16.2%	27.3%	10.6%	18.9%
Married	8.3%	20.5%	13.1%	3.0%	13.6%	8.3%
Managing the household	1.7%	2.6%	2.0%	1.5%	0.0%	0.8%
Feeling of having enough education	8.3%	5.1%	7.1%	13.6%	9.1%	11.4%
Afraid of bullying	1.7%	0.0%	1.0%	0.0%	3.0%	1.5%
School location being too far from home	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%
Not reaching the school age yet	0.0%	5.1%	2.0%	0.0%	1.5%	0.8%

Source: SMERU's survey, 2022

The quantitative data shows that the main reasons for not continuing education among school-age children (7–24 years old) are money issue, working, and being married (Table 8). This finding is corroborated by a study by the National Development Planning Agency (Bappenas) (2020) which finds that children do not continue their study probably due to problems on the demand side. For example, there are economic barriers and other problems rooted in the sociocultural factors and negative perceptions of the importance of education. Family's perception of whether education is important or not as well as various assumptions based on social norms (including those related to gender) often cause children to not attend school. Although OOSC are mostly found among children attending senior high school, the quantitative data shows that, in both study areas, there are OOSC among children attending junior high school/equivalent (15.1%) and elementary school/equivalent or with no school diploma (7.8%).

> There are [children] who don't want to go to school. … Their family are reluctant to go to school, their children and grandchildren don't want to go. Maybe they don't want to use their brain to think. Parents of these children who don't go to school usually just do odd jobs. (Staff member at a village office and a farmer, male, Kecamatan A, KSB, 20 November 2022)

OOSC are also found among school-age children with disability. The qualitative findings show that one of the reasons is the lack of schools for children with disability and inclusive schools. This has made it difficult for children with disability to access education services. Nevertheless, the quantitative finding shows a quite high percentage of children with disability who go to school, namely around 85.7% in the control area and 71.4% in the treatment areas.

There have been some strategies to lower the number of OOSC. One of them is by overcoming economic barriers to accessing education services. In both the treatment and control areas, the national programs, such as the Smart Indonesia Program (Program Indonesia Pintar/PIP) and Family of Hope Program (Program Keluarga Harapan/PKH), have been available. Moreover, the treatment area has the Pariri Cerdas program, which provides cash assistance (Rp500,000/student/year) to underprivileged students at the elementary education levels (elementary school/equivalent and junior high school/equivalent) not receiving any financial assistance from the government or other parties. This program, stipulated in Regulation of Bupati KSB No. 61 of 2022[9], took effect in 2022 and targets 600 students.

In addition, men tend to have lower interest in attending school than women. Table 9 and 10 show that in the study areas women have higher gross enrollment rates (GER) for higher education than men, especially at the tertiary education level.

[9]on Guidelines for the Distribution of the Pariri Cerdas Assistance for Underprivileged Students at the Elementary School Level

Table 9. GER at the Senior High School Level/Equivalent

Gender	GER	
	Control	Treatment
Male	86.54	87.5
Female	93.88	90.28
Female-male ratio	1.08	1.03

Source: SMERU's survey, 2022

Table 10. GER at the Tertiary Education Level

Gender	GER	
	Control	Treatment
Male	7.55	9.68
Female	22.5	12.9
Female-male ratio	2.98	1.33

Source: SMERU's survey, 2022

The qualitative finding in the treatment area shows that the interest of male youth in pursuing higher education (from senior high school to university/college) is lower than female youth. This is because men are more interested in finding work in the mining sector immediately after finishing high school, as expressed by one of the informants below.

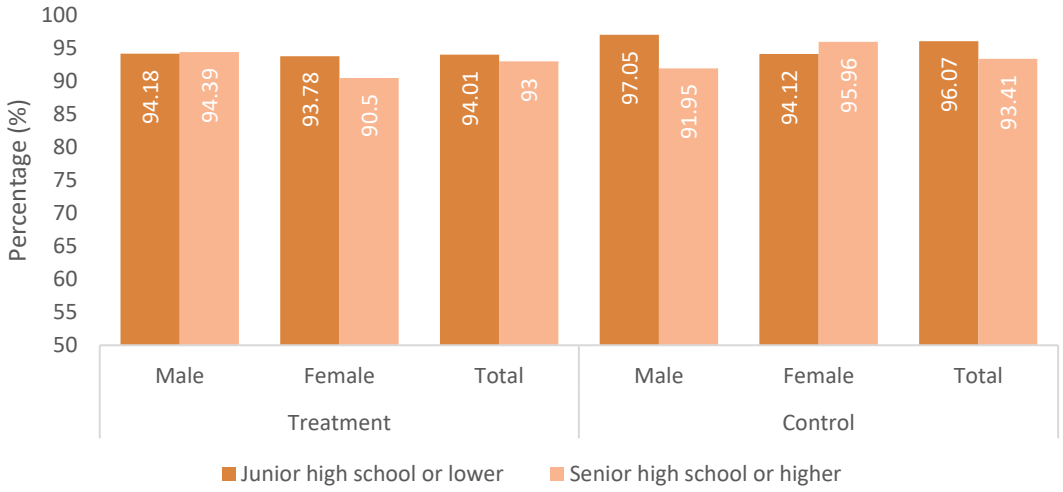
> Because of the mine, they [male youth] rush to find a job immediately. After graduating from senior high school, many of them want to work, instead of going to college. This is despite the fact that their parents are not poor and are working, but it is also not advisable to force them [to go to college]. After the mine opened, many want to work there because the pay is quite good. Rather than going to college, they say it's "a waste of money". So, in the last two years, in one family, it's rare to see all the children going to college; you'll find one or two of the children don't go to college. (Youth figure/healthcare worker, male, Kecamatan A, 21 November 2022)

3.2 Employment

In general, in the treatment area, the number of highly educated workers is almost equal to the number of less-educated workers[10]. In the control area, on the other hand, there are more workers with lower education levels than those with higher education levels (Figure 14).

[10]In this report, highly educated individuals refer to people who have graduated from senior high school or higher (senior high school/equivalent, one- to three-year diploma program, undergraduate program, graduate program, and postgraduate program), while less-educated people are those who have graduated from junior high school or lower (junior high school/equivalent, elementary school/equivalent, and no schooling).

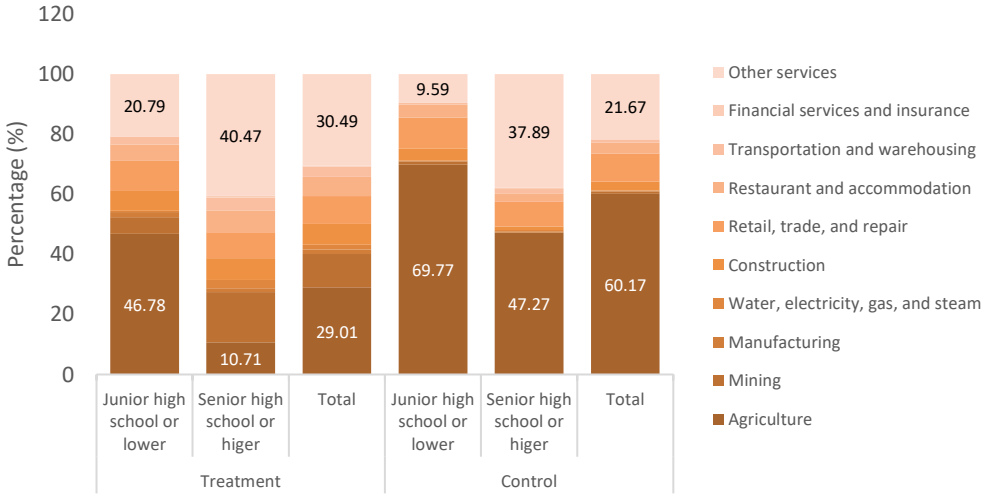
Figure 14. Percentage of Workers by Educational Attainment and Gender



Source: SMERU's survey, 2022

This is because the mining and services sector in the treatment area require highly educated workers, namely those attaining higher education levels and/or certifications of certain expertise. Other sectors, such as agriculture (including forestry, marine, and fishery), retail, trade, and repair, tend not to require highly educated workers. This analysis is supported by the data in Figure 15. In the treatment area, around 11.1% of the workers in the mining sector and 30.5% in the service sector are predominantly highly educated workers. Even though the agriculture sector is still quite dominant, the presence of the mining sector has affected the employment landscape in the treatment area. In the control area, the agriculture sector is dominant, which explains the low education level of the workers in the area.

Figure 15. Percentage of Workers by Employment Sector and Educational Attainment



Source: SMERU's survey, 2022

The survey finding is corroborated by the qualitative finding, which shows that mining is a sector favored by most of the workers, including young people and highly educated workers. Mining is viewed as a sector that provides better incomes and higher social status than other sectors. Some informants said:

> Here, people are usually interested in mining. Working at a minimarket or a hotel is more interesting to outsiders, like from Kecamatan D, [from] Lombok. ... People come here to work at the mine. [Working at the mine] may earn them the same amount of money as doing [other jobs], but the prestige is different. ... Many teachers don't come from Kecamatan A, [many] from Sumbawa, even from Lombok. Those from around here who have a bachelor's degree apply for a position at the mine, instead. (Teacher, male, Kecamatan A, KSB, 20 November 2022)

> Although he's got a bachelor's degree in agriculture, he'd tend to work at the mine … In fact, even women are interested in working at the mine. (Youth figure, female, Kecamatan C, KSB, 22 November 2022)

Besides the mining sector, another employment sector which people, especially the youth and highly educated individuals, are interested in is the service sector, such as civil servants, teachers, and health workers. One informant revealed the reason:

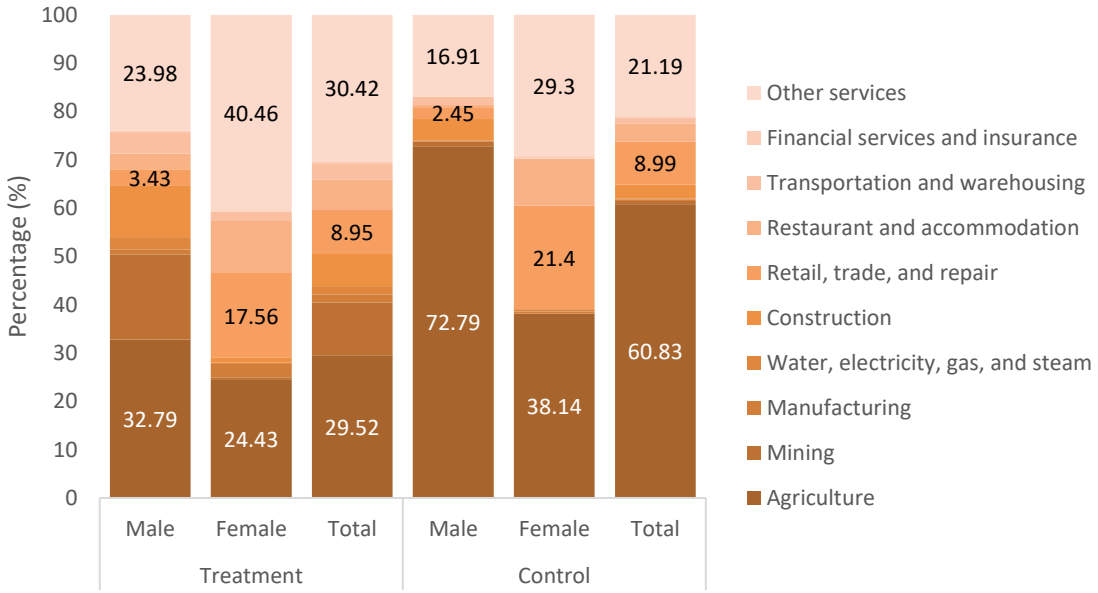
> I applied to become a civil servant … as a long-term plan because the employment is guaranteed. (Healthcare worker and business owner, male, Kecamatan A, KSB, 21 November 2022)

The communities in the treatment area also work in the farming, trade, and retail sectors. However, young people from farmers' families are losing their interest in working in the farming sector and are more interested in working in another sector. Moreover, farming in the treatment area is also treated as a household side job. The job of cultivating the land is done mostly by farmhands, while the landowner works mainly in another sector.

Meanwhile, in the control area, the farming sector is the main source of livelihood for the communities. For example, in Desa H4, which serves as the control qualitative sample location, farming activities are mostly managed by farmers' households who own the land by hiring farmhands during certain periods, such as the planting and harvest seasons. They do not only plant crops, but also raise poultry (such as chickens and ducks) or larger animals (cows and water buffaloes) for commercial purposes. The farmhands consist of men and women, including young people. Users of their service are not only from the village, but also from other *kecamatan* in the control area.

If we look deeper into the workers in each employment sector, we can see a gender gap in the employment (Figure 16). There are more male workers in the farming sector and this is evident in both the treatment and control areas. In the treatment area, however, more men work in the mining sector than women.

Figure 16. Employment Sector by Gender



Source: SMERU's survey, 2022

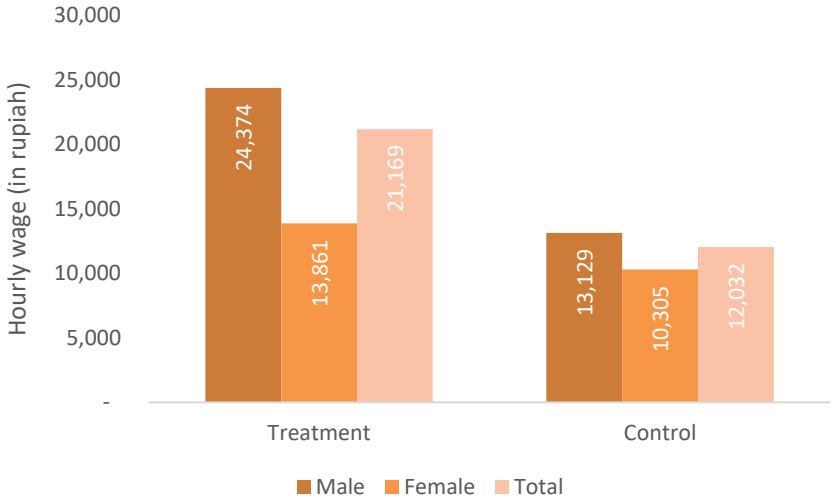
The qualitative finding shows that men are considered as having more opportunities to work in the mining sector than women. Work in the mining sector is associated with physical activities, which are deemed more suitable for men than women. An informant from the labor and transmigration agency said:

> If we talk about job opportunities in Sumbawa Barat, they are open to men and women. In the mining sector, however, it is predominantly men although it doesn't mean that no women work there. ... Outside [the mining sector] it is pretty much the same [between] men and women. ... In fact, the household industry is dominated by women. (Staff member at the labor and transmigration agency, KSB, 23 November 2022)

In term of wages (which can be seen as a return for work done), the survey results show that the control area, where the farming sector is predominant, has lower wages or returns than the treatment area, which has a fairly large portion of the mining sector in its economic structure (Figure 17).

Further examination by employment sector shows that the mining sector offers the highest wage/return among all the available sectors (Table 11). Thus, it is not surprising that mining becomes the most important and appealing sector in the treatment area. Despite more men than women working in the mining sector, women earn higher wages than men (Table 11). This is because women working in this sector usually perform administrative or managerial functions. In contrast, men assume more diverse functions, from administrative or managerial positions, operators/technicians, to manual workers.

Figure 17. Average Hourly Wages by Gender (in Rupiah)



Source: SMERU's survey, 2022

Other male-dominated sectors, such as water, electricity, gas, steam, and waste management; construction; and transportation, offer higher hourly wages than other sectors. These sectors are also closely related to the mining sector. On the other hand, female-dominated sectors, such as retail or services, still pay lower wages than other sectors. Moreover, in female-dominated sectors, female workers receive lower wages than male workers. In the service sector, for instance, female workers receive Rp14,000/hour, whereas male workers receive Rp22,500/hour.

The survey results, as discussed above, show that women's potential in the labor market still faces challenges. One of them is that high-paying jobs prioritize male workers. Moreover, working women, besides being a wife, a mother, or a daughter, may have problem optimizing their work hours because of the multiple burden of domestic work and childcare. Domestic work often becomes the responsibility of female household members and is not equally shared with men. This kind of situation occurs even when both men and women work and contribute to the household's economy. Low working hours mean that women receive lower wages/returns than men.

Table 11. Average Hourly Wages and Number of Workers with the Employee Status by Employment Sector and Gender (in Rupiah)[11]

Area	Sector	Male	Female	Total
Treatment	Agriculture	11,068	4,681	8,939
	Mining	32,095	39,394	32,254
	Manufacturing		11,905	11,905
	Water, electricity, gas, steam, waste	24,423		24,423
	Construction	20,262		20,262
	Retail, trade, repair	36,364	11,185	16,220
	Restaurant and accommodation	13,502	10,665	12,178
	Transportation, warehousing, and information & communication	27,321	22,917	26,172
	Financial services, insurance, real estate	12,500	20,089	16,295
	Other services	22,502	14,127	18,573
Control	Agriculture	9,342	11,541	10,222
	Mining			
	Manufacturing			
	Water, electricity, gas, steam, waste		13,021	13,021
	Construction	11,079		11,079
	Retail, trade, repair	9,226	5,208	7,619
	Restaurant and accommodation	7,143	2,976	5,060
	Transportation, warehousing, and information & communication	11,911		11,911
	Financial services, insurance, real estate		5,952	5,952
	Other services	14,861	10,531	12,972

Source: SMERU's survey, 2022

Wages or returns are not only affected by employment sector or gender. There are other factors affecting the difference in wages between groups and between sectors. The test results show a significant wage discrepancy by educational attainment, internet utilization, and workers' participation in certified training (Table 12). This means that workers can still receive higher wages/returns if they have at least senior high school education, have participated in certified training, and use the internet for work.

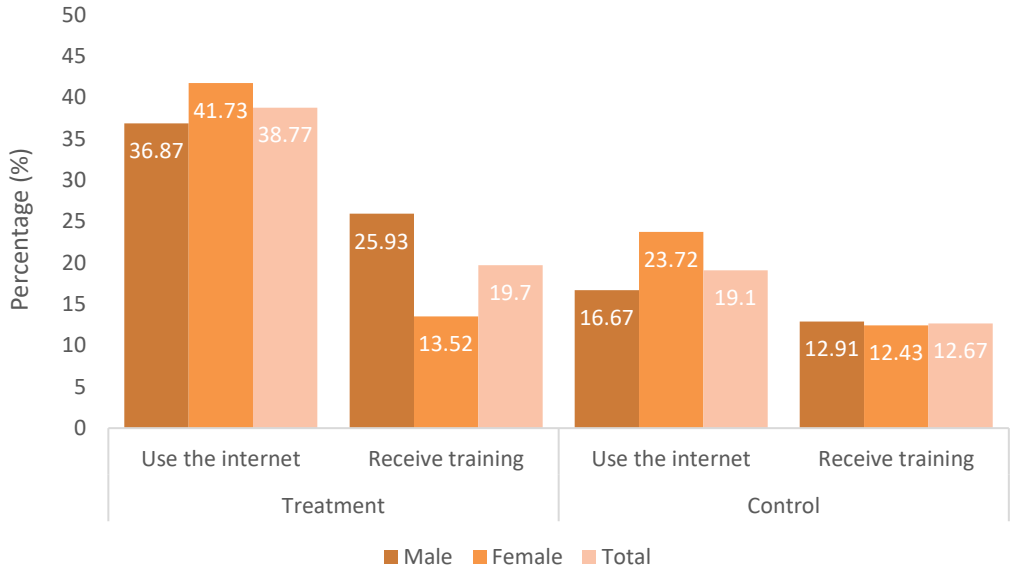
However, the survey results show that only a small number of workers have used the internet at work and participated in certified training (Figure 18). Internet utilization in the

[11]Data related to wages by employment sector needs to be interpreted more carefully, considering the small number of samples related to wages when divided by the employment sector. For example, the number of workers with the employee status in the mining sector is 90 men and only 2 women.

control area is even lower than that in the treatment area. Thus, it is not surprising that the average wage for workers in the control area is far lower than that in the treatment area. The same data shows that the number of female workers who have participated in certified training is smaller than that of male workers. Nevertheless, although the number is still less than half, more and more women make use of the internet at work. Many women, especially those working in the retail/trade sector, have used the internet to sell their products/services online (through social media).

In Indonesia, the existence of workers not using the internet for work is associated with the landscape of the workforce, which is dominated by workers with low educational attainment and whose main job does not require internet usage (SMERU, Digital Pathways, and ESCAP, 2022). In the control area, less-educated workers outnumber the highly educated ones. In addition, the agricultural sector, as the dominant sector in the control area, tends to not require workers with high levels of education and certain digital skills. In contrast, the treatment area has the mining and services sectors which require workers with relatively higher levels of education and/or certification of certain skills; there are also administrative or managerial jobs that require digital technology utilization.

Figure 18. Percentage of Workers Using the Internet and Having Received Training



Source: SMERU's survey, 2022

Table 12. Result of the Statistical Significance Test (T-Statistic) between Wages and Various Variables

Variable	Group	Number of People Observed	Mean	Standard Error	Difference	Stan-dard Error	t	Pr (|T| > |t|)
Sex/gender	Male	301	24374.4	1562.6	10513.2	2012.6	5.2	0.0000*
	Female	132	13861.2	1268.5				
Education	Junior high school or lower	109	16005.2	2048.0	-7454.8	2520.1	-3.0	0.0034*
	Senior high school or higher	300	23460.0	1468.5				
Receive training	No	207	16184.6	1398.1	-9550.7	2281.3	-4.2	0.0000*
	Yes	226	25735.2	1802.6				
Use the internet	No	173	17334.3	1578.8	-6387.1	2272.9	-2.8	0.0052*
	Yes	260	23721.3	1635.1				

Source: SMERU's survey, 2022

*significant at 1%

**significant at 5%

***significant at 10%

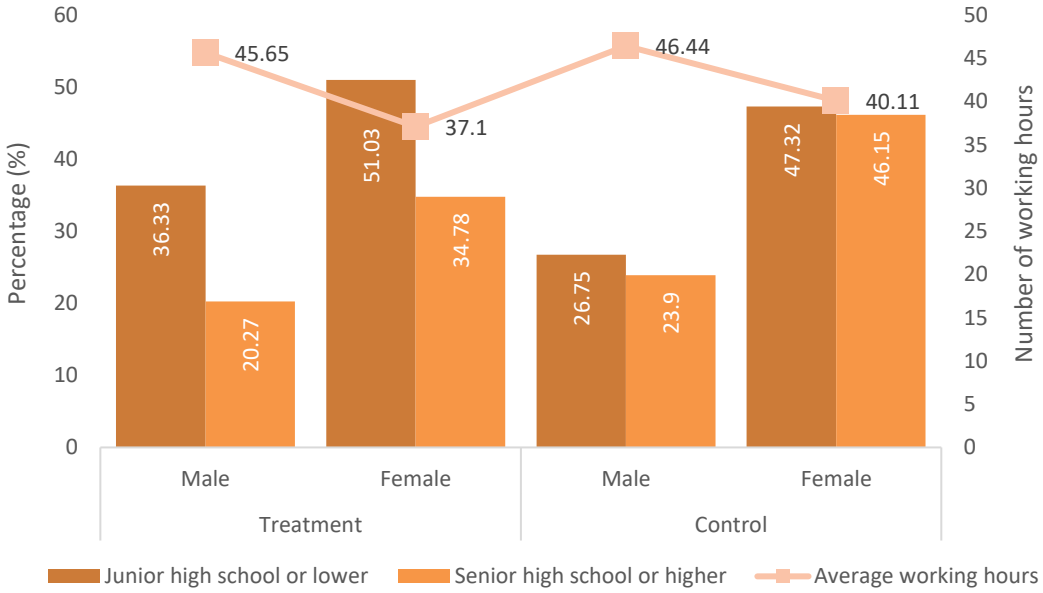
Related to job training, people in the treatment and control areas generally receive information about training from the internet (websites or social media, such as Facebook and WhatsApp); information bulletins; announcement boards available at the village, *kecamatan*, or *kabupaten* office; social networks, such as family/friends; and printed media. However, some people still have problem accessing such information because of, among others, having no proper gadget, limited internet access, and limited social networks.

This study also finds that, regarding the employment aspect, there are people categorized as underemployed and unemployed. Data on wages/returns (Figure 17) and data on the underemployment[12] (Figure 19) show that there is a gender discrepancy. In both study areas, the average working hours per week for women are 0.8 times the average number of hours per week for men. This means that on average men work for 35 hours a week, while women only work for 28 hours. Working women also face a double burden as they have to balance employment and domestic responsibilities. As a result, there are quite many women unable to work optimally (not working full time) and thus categorized as underemployed. This also explains why women receive lower wages/incomes[13] than men (Figure 17). This is proven by the statistical significance test result, which shows that there is a significant wage discrepancy between men and women in the treatment area (Table 12).

[12]Underemployment is defined as working less than 35 hours a week.

[13]In this report, wages/incomes refer to the pay received by a worker with the status of laborer/employee/staff or a freelancer (both in the agriculture and nonagriculture sectors).

Figure 19. Underemployment and the Number of Working Hours by Gender



Source: SMERU's survey, 2022

In the treatment area, despite people's high interest in working in the mining sector, not all can enter the sector. This is because of, among other things, a gap between the sector's need and jobseekers' competence. For example, despite having a sufficient formal educational attainment, the jobseekers may have no relevant job experience, have never participated in relevant training, or have no required certification. This can create an unemployment group, which is one of the challenges in the employment sector.

> Usually, they look for people who have skills … [and] those with two years of experience. … Friends [young people] who just start looking for a job don't have any experience. That's the problem. (Healthcare worker and business owner, male, Kecamatan A, 21 November 2022)

> For example, in terms of work experience, these people [jobseekers] may have had experience working in five companies, so they have been in several positions, but they have never participated in training. For example, they worked in a small-scale subcontractor company [so there was no training]. (Staff at the labor and transmigration agency, KSB, 23 November 2022)

> The problem is with the competency certification. … The certification is from a private job training institute, a public vocational training center [the labor and transmigration agency] or a special program by a state ministry aiming at certifying certain profession. … It is understandable, people around here [treatment area] usually build their career from being a helper, from helping out in a certain area of jobs [so they have never participated in a certification program]. (Staff at the labor and transmigration agency, KSB, 23 November 2022)

The high interest in working in the mining sector (mining minded) is a challenge in developing the employment sector. This situation leads to the labor force being reluctant to look for jobs in other sectors.

> If we look at the state budget, there are many [types of training]. There are language [training] and hospitality [training]. These types of training are available. In fact, we held a training program in 2014, but no one participated, no one was interested. So, we ended up focusing on mining. (Staff at the labor and transmigration agency, KSB, 23 November 2022)

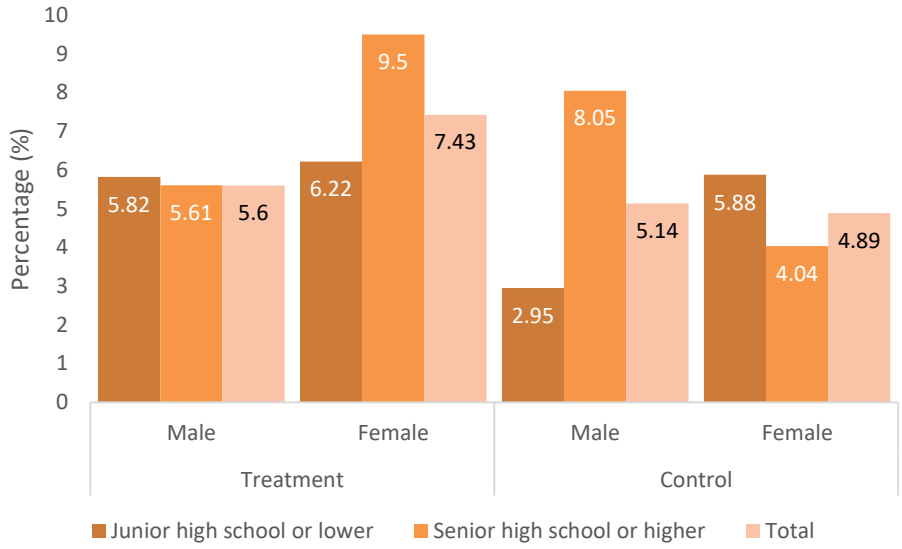
In terms of policy, there has been Regulation of Bupati KSB No.15 of 2022[14], which regulates the utilization of local resources, including human resources[15], for the government, the private sector, and the public for each employment sector. From various interviews, the research team learned that the public understanding of the utilization of local human resources by a private company is limited to their recruitment in the employment relation. Thus, it is not surprising that the communities have been focusing so much on job opportunities in the mining sector. Meanwhile, according to the regulation, private companies are required to absorb at least 60% of the human resources in KSB, but they can also expand job opportunities outside the employment relation in the form of an entrepreneurship program.

Regarding gender, the unemployment rate of women, especially the highly educated ones, is significantly higher than that of men (Figure 20). In the treatment area, the number of women entering the workforce is relatively small (Subchapter 2.3). Furthermore, women, especially the highly educated ones, are more likely to be unemployed than men when they are entering the workforce. Meanwhile, the unemployment rate of men is found higher among the less-educated ones. This means that, in the treatment area, the existing job opportunities require highly educated workers, but they prioritize men, or the types of jobs available are normally done by men. That is why highly educated women find it harder to find a job. On the other hand, the unemployment rate among relatively less-educated women is lower. This might be because less-educated women are less particular about choosing jobs and they can also start a business in the retail, trade, or home-industry sectors, where the returns are not as good as those in the service sector. Moreover, less-educated women are more likely to come from the lower welfare group, so that finding a job with lower returns can be a matter of survival. For highly educated women, working in a sector with lower returns is unattractive and this leads to their becoming unemployed.

[14]on Utilization of Local Resources

[15]Other local resources are natural resources and local products.

Figure 20. Unemployment Rates by Educational Attainment and Gender



Source: SMERU's survey, 2022

In the control area, the unemployment rate of women is lower than that of men. The unemployment rate of highly educated women is also lower than that of highly educated men. This happens because the types of jobs available in the control area, such as those in the farming sector, do not need highly educated workers. Meanwhile, jobs that require highly educated workers, such as those in the service sector, prioritize women. In the control area, highly educated men find it more difficult to find a job because the available jobs do not require workers with high levels of education. On the other hand, highly educated women still have the opportunities to secure better jobs, especially in the service sector (tertiary).

3.3 Nonmining Economy

Despite being the largest contributor to KSB's regional GDP, the mining sector is not sustainable. Thus, it is important to find more sustainable sectors as alternative economy-supporting sectors other than mining. In this report, the nonmining economy discussed includes the tourism sector and MSME empowerment that serve as potential sources of the economy in KSB.

3.3.1 Tourism Sector

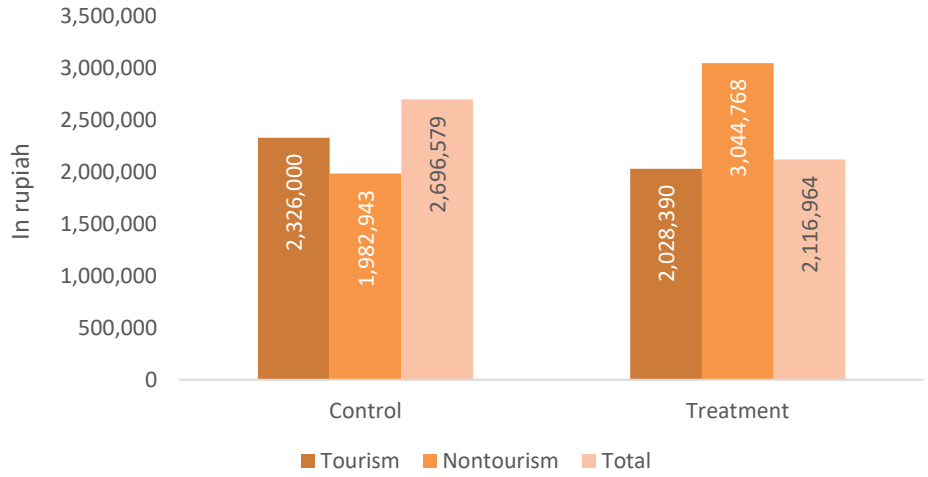
The Government of KSB has started to pay attention to the tourism sector because of its tremendous potential to support regional economy. This attention is expressed in several regional regulations that cover the development of tourism potential in KSB. On 3 August 2020, the Government of KSB issued Regional Regulation No. 8 of 2020 on Tourism Villages. This regulation provides legal certainty for the development of tourism villages in KSB. To optimize the integrated efforts to develop the tourism sector, on 22 December 2020 the Government of KSB issued Regional Regulation No. 12 of 2020 on the Master Plan for Tourism Development in KSB 2020–2025. The direction of the tourism sector

development policy is achieved through four pillars: (i) the development of tourist destinations, (ii) the development of tourism marketing, (iii) the development of tourism industry, and (iv) the development of tourism institutions. With the regulation, the government is showing its commitment to developing the tourism potential as well as developing the human resources involved in this sector.

The fact that the tourism sector in KSB has started to receive attention shows a positive signal for tourism development, which is currently not optimal. This is reflected in the quantitative findings, which reveal that the communities in the study areas have low participation in the tourism industry[16]. For instance, at least 82 people (8.42%) in the treatment area and 28 people (4.59%) in the control area work in the tourism industry . When analyzed by gender, women show a higher percentage.

The tourism industry is dominated by women, with the largest proportion having junior high school education or lower. Moreover, most workers in the tourism industry are adults about 40 years old on average.

Figure 21. Wages for Workers in the Tourism and Nontourism Industries



Source: SMERU's survey, 2022

Besides, the qualitative findings show that workers in the tourism sector are dominated by people from outside KSB, such as Lombok and Bali. Locals seem to be less interested in working in tourism; working in the mining sector is deemed more interesting in terms of wages and "pride". Young people generally still think that the tourism sector is not promising enough, as they cannot see the long-term benefit of its development. There are only a few young people interested in working in this sector. However, according to qualitative data, they are still trailing behind workers from other regions in terms of language, hospitality, and food preparation skills.

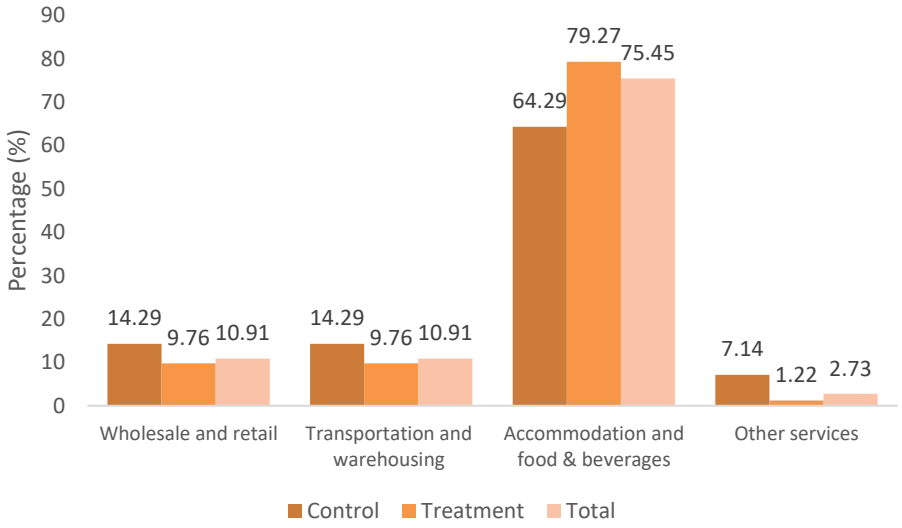
[16]In this study, the tourism industry focuses on workers or businesses directly linked to tourism activities; this follows the classification of the tourism industry made by the BPS in the *2016–2019 Tourism Satellite Account* (TSA) report.

In terms of monthly income/wage, tourism industry workers in the treatment area seem to receive lower wages than those in the control area (Figure 21). They also receive lower wages than nontourism industry workers in the same area.

This low income/wage is the main factor causing the communities, including young people, to be less interested in working in the tourism sector. This aligns with the information from a qualitative informant who highlighted the issue of wages in the tourism sector. This issue requires special attention, especially in terms of how to increase added value in the tourism industry so that people have orientation to work in sectors other than mining.

> Young people here, if they are not working [for the mining company], they're not interested. Well, some did take hospitality major, but they are still in college. It's true that working [for a mining company] is currently more promising in terms of salary. Salary in the tourism industry, for example, is Rp2,500,000, and it'll increase if there is service money. But still, it's not that much and depends on the number of guests. (Hotel manager, male, Kecamatan A, KSB, 21 November 2022)

Figure 22. Employment Sectors in the Tourism Industry[17]



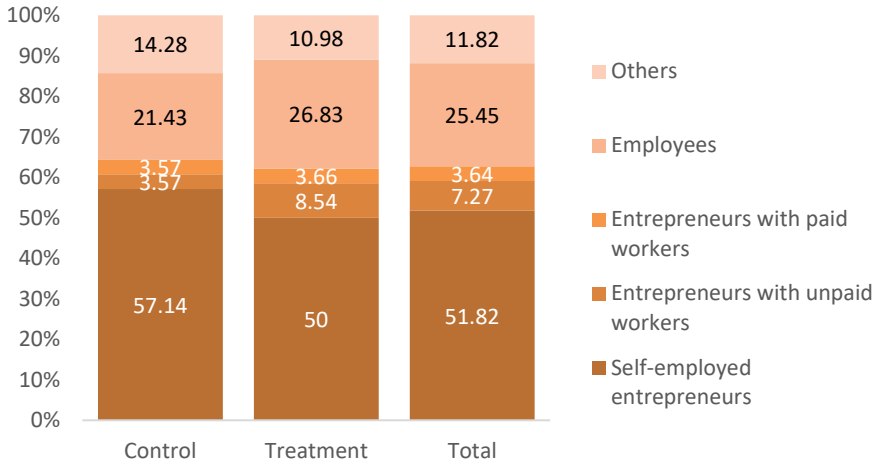
Source: SMERU's survey, 2022

The employment sector in the tourism industry that absorbs the most workers is accommodation, food, and beverages (Figure 22) and it happens in both the control and treatment areas. These workers work at hotels, tourist lodges, villas, restaurants, diners/eateries, cafés/bars, and other services that provide foods and drinks at permanent or temporary locations. Employment sectors with the second largest proportion of workers are wholesale and retail and transportation services.

[17]In this study, wholesale refers to traders that usually buy goods directly from factories and resell them to small traders, while small traders or retailers usually buy goods from wholesalers and sell them directly to consumers. Other services include services that cannot be categorized, such as reflexology and spa.

In addition, because of the domination of the food and beverage industry, people working in the tourism sector are mostly entrepreneurs—either working alone or assisted by paid/unpaid workers (Figure 23). The baseline survey shows that at least 62% of the people working in the tourism sector are entrepreneurs.

Figure 23. Employment Status in the Tourism Sector



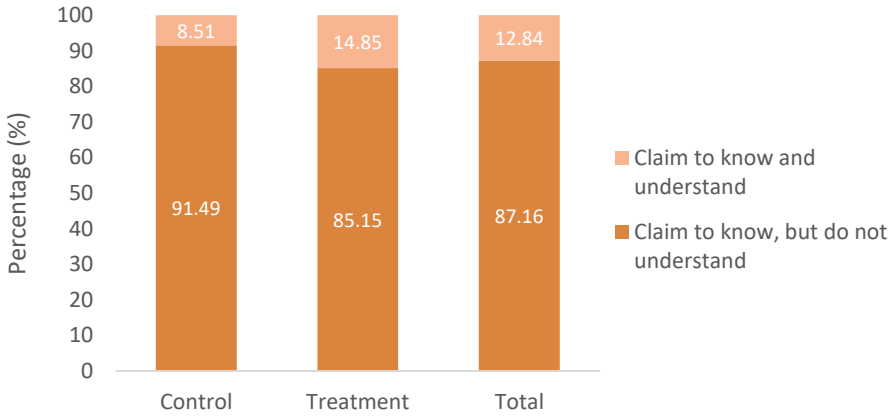
Source: SMERU's survey, 2022

The quantitative data also shows that only a small number of people in both study areas understand the meaning of "ecotourism." Only around 148 people (6.4%) in both study areas claimed to have prior knowledge or have heard the word before. However, there are only 19 people who truly understand what it is. Figure 24 shows that, of the people who have heard or claimed to understand the term "ecotourism", the proportion who truly understand its meaning is higher in the treatment area (14.8%) than in the control area (8.5%), despite the small absolute number.

Limited understanding of the ecotourism concept indicates that tourism has not been mainstreamed among the communities. That is why raising awareness of the importance of tourism development is the first step that the government and relevant stakeholders should intensify. This step should be taken to generate communities' sense of belonging to the tourism potential in their own region. With a greater sense of belonging, it will be easier to invite people in an effort to develop the tourism industry.

> Besides budget, another constraint in developing tourism is the attitude of the village government and tourism workers themselves [not having the initiative big enough to raise public awareness of the importance of developing tourism potential and its benefits for the communities]. The village head can motivate village youth to develop tourism through *pokdarwis* [tourism awareness groups], but this has not been intensified. If we talk about tourism, first, we really need to work until we break our backs, so to speak; we can't just get people to come here. (Staff of the tourism, youth, and sports agency, male, KSB, 24 November 2022)

Figure 24. Percentage of the Population Who Understand Ecotourism

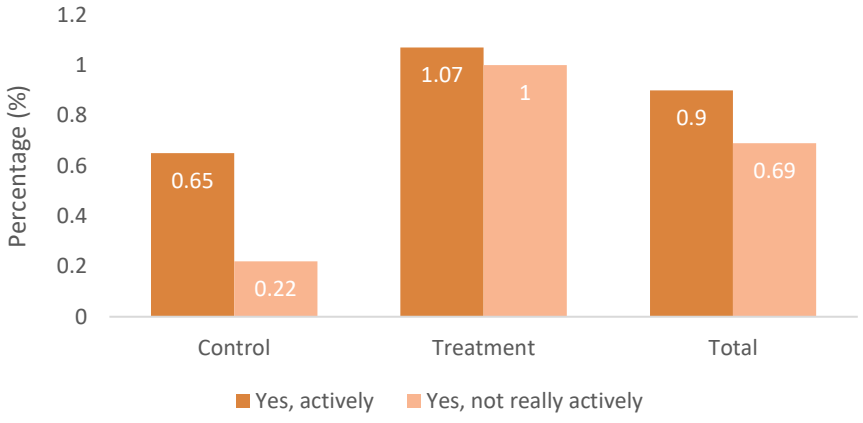


Source: SMERU's survey, 2022

The participation of people aged over 17 years in *pokdarwis* is apparently very low (under 3%). Nevertheless, based on the quantitative survey, the number of people participating in *pokdarwis* is found higher in the treatment area (29 people) than in the control area (8 people).

In developing tourism at the village level, the tourism awareness group is one institution that is always said to play a major role. However, the qualitative findings show the opposite. Informants from the village to *kabupaten* levels reported that tourism awareness groups in KSB are still mired with issues. The most apparent one is related to the lack of serious attention to its existence, as the effort to develop its human resources at the village level is still minimal.

Figure 25. Population over 17 Years Old Participating in Pokdarwis



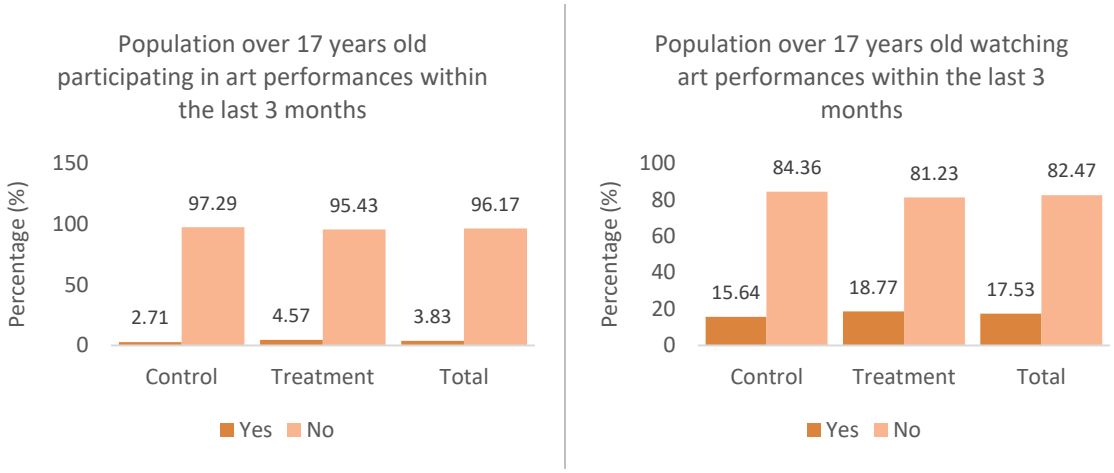
Source: SMERU's survey, 2022

The proportion of people over 17 years old participating in an art performance/exhibition within the last three months is very low (4.6% in the treatment area, 2.8% in the control area) (Figure 26). This shows that only few people are active in art-related activities. However, the number of people attending art performances is relatively higher even

though it is still below 20%. Figure 26 shows that people in the treatment area are slightly more active than those in the control area in terms of participating in and attending art performances.

Moreover, the qualitative findings show that, of the three crucial aspects in developing tourist destinations (amenity, accessibility, and attraction), the cultural attraction is still deemed suboptimal. Factors causing it include difficulties in the promotion and funding of cultural attractions. This raises concern, as KSB actually has many cultural attractions that are typical of the region; among them are the Balloon Festival and Barapan Kebo, which are usually organized by the local community.

Figure 26. Population over 17 Years Old Participating in or Watching Art Performances within the Last 3 Months



Source: SMERU's survey, 2022

Factors Driving and Inhibiting Tourism Development

Based on the analysis above, there are several issues that can be categorized as the driving and inhibiting factors in developing tourism in the treatment area. In general, the inhibiting factors are dominant over the factors supporting the development of tourism potential.

Driving Factors

a) The regional government has a good will to develop tourism in KSB as a potential sector, besides the mining sector, that can help boost the economy. The issuance of several regional regulations has clarified the direction of KSB's development after the operation of the mine ends. These written regulations indicate that stakeholders and intersectoral government agencies are given space to develop KSB's tourism potential, opening up more opportunities for the community to participate in this sector.

> The development of tourism is one of the priorities and now the Master Plan for the Development of Tourism is in the drafting phase with the focus on the Integrated Tourism Program. The development of tourism becomes a priority because it is important that we prepare the nonmining sectors. For the Integrated Tourism Program, it is not only the responsibility of the tourism agency, but also other economic sectors, like the

> Cooperatives and MSME Development and Facilitation. (Staff member at Bappeda KSB, male, 23 November 2022)

b) Based on the qualitative findings, obtaining a business permit in the hospitality sector, especially for hotels, is currently easier than it was in the previous years. The governments, from the village to *kabupaten* level, seem to have a good synergy regarding business permit issuance. The *kabupaten* government has also eased the access to information about business permits. They disseminated the one-door business permit process to local hospitality business actors. If analyzed further, the ease of obtaining a business permit is also a step to entice local investors and investors from outside KSB.

> The process to get a business permit is easier than ever now. Document processing at the village level is also easier and free of charge. The follow-up process at the *kabupaten* level is also quicker and easier. Hotel permits will be easier to be issued if the business has the environment management-environment monitoring (UKL-UPL) permit.[18] (Hotel manager, male, Kecamatan A, KSB, 21 November 2022)

c) Consolidation between hospitality business actors has already started. In the treatment area, they have a WhatsApp group as a medium for exchanging information related to hospitality business. For example, they shared information about developing the tourism potential in KSB from the government, the importance of managing the environment for tourism business actors, and the procedure of one-door permit application for tourism business entities. Even though such a consolidation group has not been formally institutionalized, it shows that social networking between tourism business actors is functioning. Furthermore, such a consolidation group signifies the growing feeling of solidarity between tourism business actors to develop the hospitality sector's potential in KSB.

Inhibiting Factors

a) This study finds that collective awareness about the importance of developing tourism in KSB has not been fully fostered. Fostering this collective awareness at the government down to the community level is important to build commitment of various parties so that they will have the synergy to develop tourism in KSB. At the government level, there have been the Tourism Development Master Plan and other regional regulations, but the government has yet to ensure their derivative regulations and instructions so that they can be implemented at the grassroots level. Cooperation between government institutions is also needed to clarify task division, especially who does what. Meanwhile, despite being aware of tourist destinations, the communities do not understand what contribution they can make to develop the tourism potential. The communities can contribute to the tourism sector through various channels, such as by participating in local youth organizations and village-owned enterprises. Nevertheless, the interviews show that such participation has not been visible at the community level. This is despite the fact active participation of the communities

[18]UKL-UPL is the management and monitoring of businesses and/or activities with no significant effect on the environment, which is needed in the decision-making process about the running of businesses and/or activities (Pratama, 2015).

through youth organizations (*karang taruna*) and village-owned enterprises (BUMDes) can potentially increase village revenue from the tourism sector. However, such an initiative has not been visible and this causes the tourism potential development to stagnate. As a result, job creation in this sector has not been optimal.

b) The formation of tourism-supporting institutions, such as *pokdarwis* at the village level, is still problematic. In villages that already have *pokdarwis*, some are running and helping to manage tourist spots, while some others are not active. However, even for the active *pokdarwis*, they face challenges relating to institutional management and human resources capacity building.

> Until 2022, there has been no support, like a training program, for them (*pokdarwis* members), but for 2023, it is already in the budget to hold training to improve their capacity. It will invite approximately 40 participants. Based on the data we have, of the 43 *pokdarwis* in total, only around 19 are still active. But the data is from last year. The very active ones are about 10 groups. The more active ones are *pokdarwis* in Village W, X, Y, Z [village names are disguised]. They are said to be active based on the number of visits and activities. This is a benchmark to measure whether our tourism is developing or not. (Staff member at the tourism, youth, and sports agency, male, Kecamatan D, KSB, 24 November 2022)

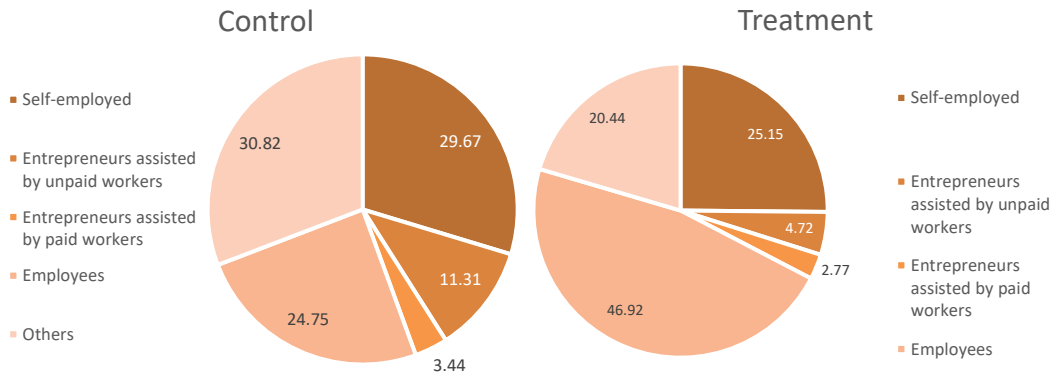
c) Mining mindset is still strong among the communities, including youth. Jobs in the mining sector remain the primary choice because they are deemed capable of providing a large economic return. The communities have not been able to see the long-term impact of tourism development.

d) The development of tourism-supporting infrastructure has been suboptimal. The regional government has already worked to improve the infrastructure, including repairing the roads and providing electricity, internet access, and clean water and sanitation facilities, but the development has not been maximum. Road infrastructure is one of the issues that tourism business actors complain about most often. Roads are vital to improving interregional connectivity and bad road conditions will negatively affect the mobility of the communities, including tourists.

3.3.2 Micro- and Small-Scale Enterprise (MSE) Sector

Even though the quantitative research was not specifically designed to target businesses as the respondent units (it mainly targets households), the survey finds that at least 37.2% of the population work as entrepreneurs. If we compare between the study areas, the proportion of entrepreneurs is found higher in the control area (44.4%) than the treatment area (32.6%) (Figure 27).

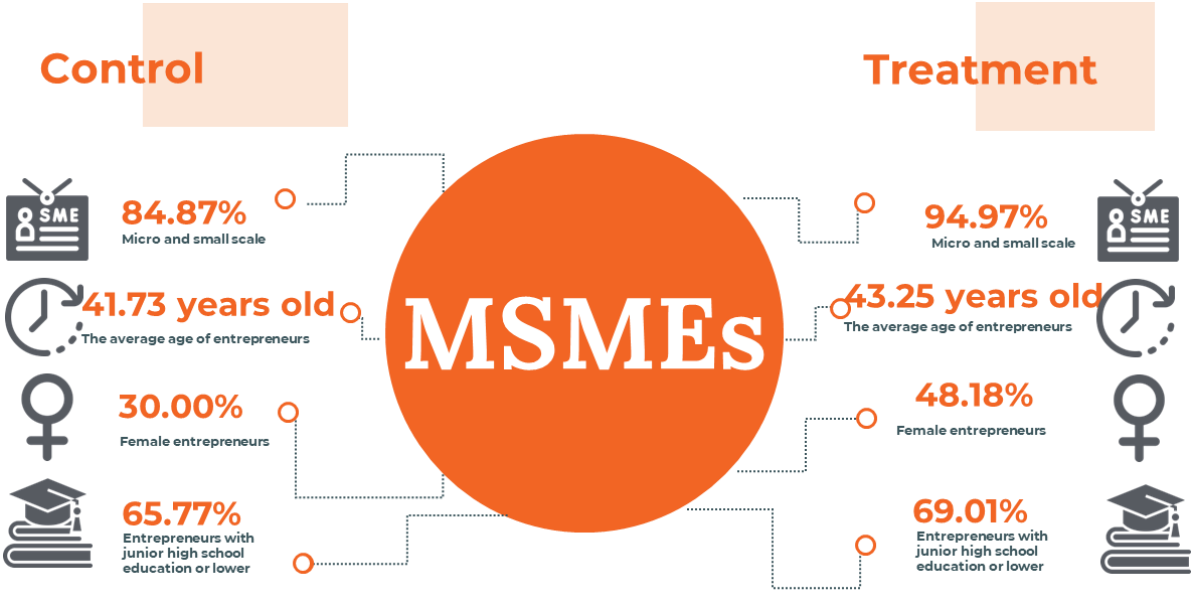
Figure 27. Percentage of Working Population by Enterprise Type



Source: SMERU's survey, 2022

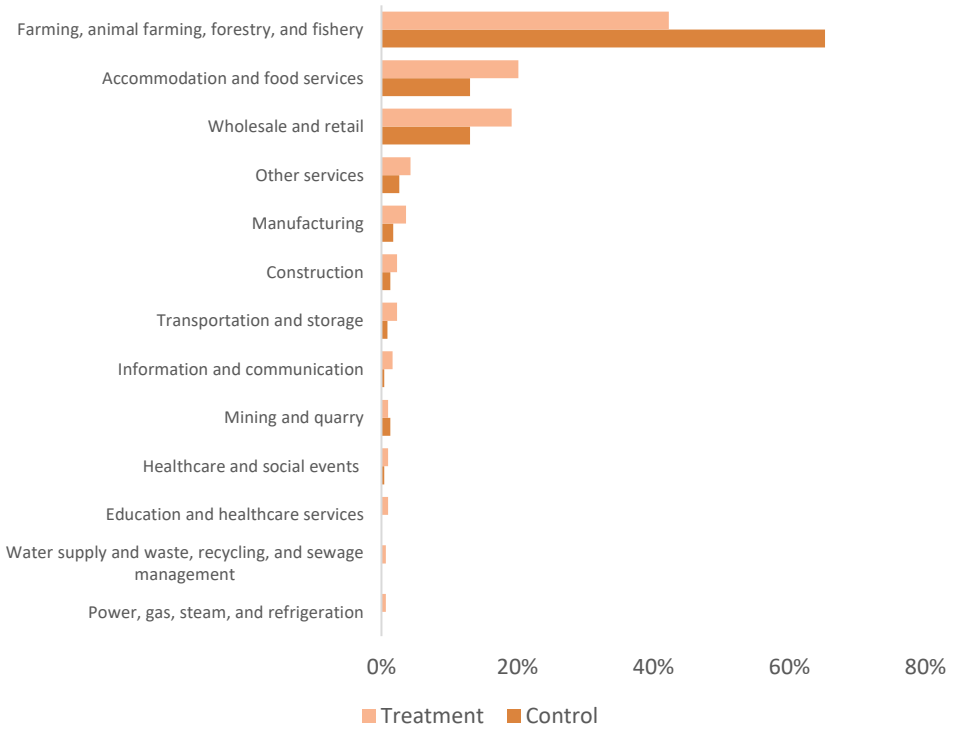
Based on the most straightforward definition from de Mel, McKenzie, and Woodruff (2008) and Djankov et al. (2005), the most basic characteristic to assess the success of a business is that it has at least one paid worker. Using this definition, we can see that the number is relatively small, namely around 3.4% in the control area and 2.8% in the treatment area.

Figure 28. Profiles of MSMEs in the Study Areas



Not all businesses, however, can be categorized as an MSE. Using the simplest definition of MSEs from the BPS, we can say that an MSE is a business with no more than ten workers. Using this definition, we can see that the number of MSEs is not too different; at least 90.3% of businesses in the quantitative data are MSEs. Thus, we can conclude that most businesses in the study areas are categorized as micro- and small-scaled (Figure 28).

Figure 29. MSEs by Employment Sector



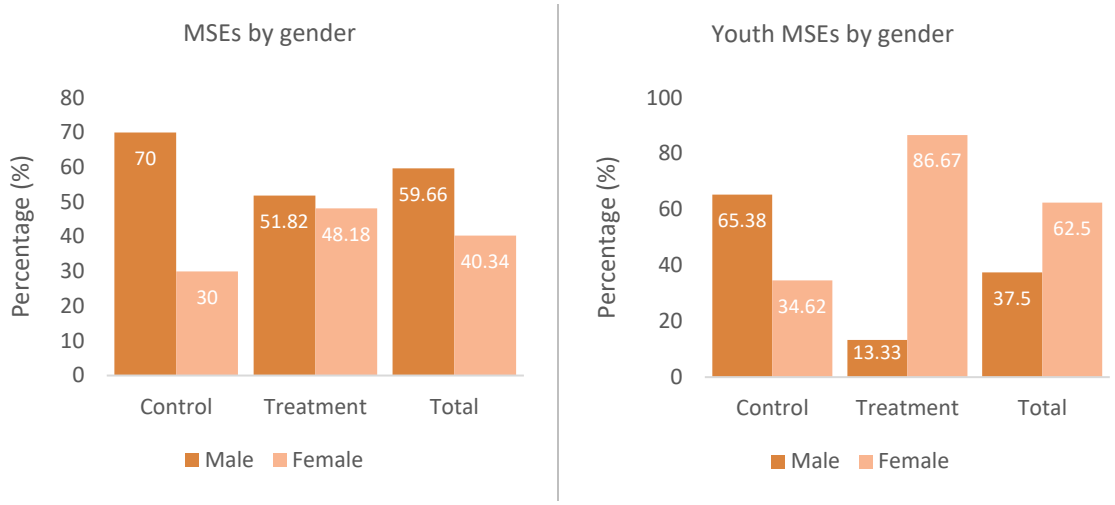
Source: SMERU's survey, 2022

In the study areas, most MSEs work in the farming sector; they commonly work as corn farmers, animal farmers, and fishers (Figure 29). They also work in nonfarming sectors, such as accommodation, food, and beverages; wholesale and retail; other services, including laundry, barber/haircut, nanny/housemaid, makeup services, and others; and manufacturing. This happens in both study areas. However, the total proportion of MSEs in the farming sector is higher in the treatment area (57.76%) than in the control area (37.78%). However, the manufacturing sector, which can play a significant role in a region's economy (Kniivila, 2007; Rahmah and Widodo, 2019), seems to have a quite small proportion—in this study, the manufacturing sector includes home industries.

Broken down by gender, MSEs in both study areas, especially the control area, are still dominated by men. By educational attainment, the majority of the entrepreneurs (67.6%) have attained junior high school education or lower, with the mean age being 42 years old (89.5% of the entrepreneurs are adults). In the treatment area, the proportion of women who work as entrepreneurs is far higher than that of men.

The qualitative findings show that in the treatment area, young women usually run online businesses as resellers of clothes, cosmetics, and household appliances. On the other hand, young men tend to have the 'mining mindset' or, in other words, they are way more interested in working at a mining company or for Amman's subcontractor company than running their own business. In the treatment area, youth entrepreneurs still face obstacles, particularly in terms of cashflow, as payment from the buyers or clients takes a long time. Such obstacles hinder entrepreneurs in making payments to their partner farmers.

Figure 30. MSEs and Youth MSEs by Gender



Source: SMERU's survey, 2022

Most enterprises in the study areas do not have a business permit certificate. This is evident in both study areas with a quite high proportion. The proportion of businesses with a business permit certificate is only 13.04% in the control area and around 21.9 in the treatment area.

Limited human resources and business capital are the factors inhibiting MSE actors from obtaining a business permit. The qualitative findings show that MSE actors have difficulty obtaining a business permit online because of the limited knowledge to use digital devices. As a result, MSE actors choose to go directly to the related government agencies and process a business permit in person. This can cause the process to take a longer time to complete, while the more effective and efficient way through an online system has been provided by the government. Nevertheless, this might mean that MSE actors in KSB need intensive facilitation, including how to utilize the technology to support their business.

> Haki, the halal [certificates], and even NIB, PIRT[19], the process to obtain all of them can be done online. ... These small- and medium-scale industry owners are usually technologically challenged because many are not young anymore. So, they'd prefer coming here and we help them ... we don't neglect them. ... I once asked why it took them so long to get a permit, [and they said] 'it was the cellular phone, the internet'. So, I think technology is the issue. (Staff at KSB Industry, Trade, and Cooperatives Agency, male, 24 November 2022)

Besides the issue of human resources, there might be an issue of limited capital to obtain a permit. Based on the qualitative findings, MSMEs need to spend quite a lot of money for certain certifications. This may be burdensome for MSME actors; thus, not many try to obtain the business permit they actually need. On the other hand, the government seems to have taken some measures to help MSMEs with their business legality, including giving subsidies for obtaining a business permit.

[19]HAKI: intellectual property rights; NIB: business identification number; PIRT: food and beverage home industry

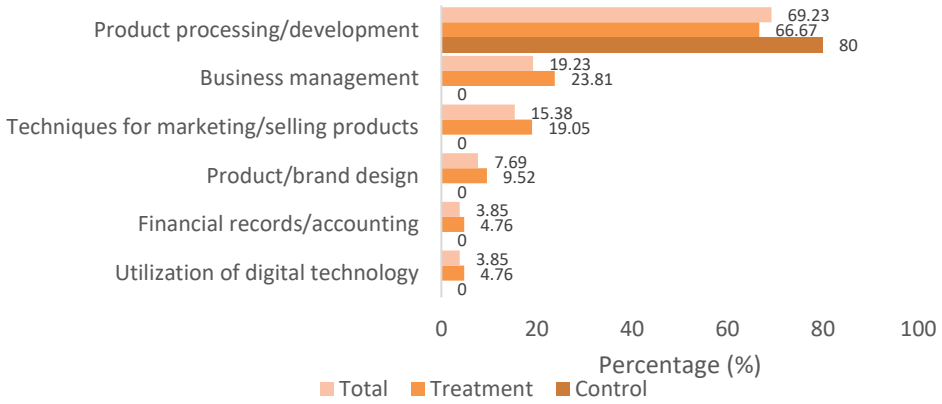
The proportion of entrepreneurs having participated in training is also relatively small, i.e., only 4.9% within the last year. The proportion of entrepreneurs participating in training is found higher in the treatment area (7.0%) than the control area (2.2%).

Among all the types of training that entrepreneurs have participated in, product processing/development and business management are the most common. In Figure 31, we can see that, by area, the types of training are found to be more varied in the treatment area than the control area. In the control area, the only training available is training in product processing/development. Meanwhile, the least common type of training attended by entrepreneurs is training in the utilization of digital technology. Thus, it is not surprising that only around 23.64% of entrepreneurs in the study areas have used the internet for business-related activities, such as communication, promotion, and transaction. In fact, there are numerous benefits of digitalization for a business unit, such as promoting inclusion, innovation, and efficiency (World Bank, 2016), as well as providing an alternative to survive during the pandemic (Bachtiar, Kusumawardhani, and Indrio, 2022). In terms of internet utilization for business-related activities, the treatment area fares better (30.36%) than the control area (14.74%) even though there need to be more training sessions in the utilization of digital technology so that business actors can benefit from it more optimally.

The fact that only a small number of entrepreneurs have participated in training implies their limited knowledge about business management. This is reflected in some of the qualitative findings that some business owners do not make detailed records of their profit-loss accounting and cashflow. They use simple buying and selling calculations and do not make any detailed financial plans and records.

> Programs aiming at developing entrepreneurship are needed, but they are not available, especially about the records and reports of grocery businesses. So far, I only make simple records of the supplies I bought, but I have never made any bookkeeping about capital, profit, and expenses/other needs, which are sometimes taken from the stall business. (Civil servant and owner of a small grocery store, male, Kecamatan H, Kabupaten Sumbawa, 25 November 2022)

Figure 31. Types of Training that MSEs Have Participated in over the Past Year



Source: SMERU's survey, 2022

Regarding access to business loans, the condition is better. More than half of the entrepreneurs have accessed business loans, especially in the control area.

This finding is corroborated by the qualitative data which shows that people who open a business have the courage to access business loans. This shows their intention to grow their business. One of the informants said that she used the business loans to expand her business into a trade unit.

> I accessed a loan from BNI for Rp200 million with the two-year tenor. I used the money as business capital, but I had problems paying the monthly installments. In 2003, I borrowed business capital from BNI to expand my business into a trade unit with a permit. It was my husband who took care of the permit for the trade unit. (Farmer and trader, female, Kecamatan A, KSB, 21 November 2022)

On the other hand, the qualitative findings show that some people are reluctant to access business loans because they are afraid of failing to make the repayment. An informant reported that the fear arose because of the unpredictable income from her business. This finding shows that some entrepreneurs still need improvement in their capacity of running businesses, especially regarding business management, marketing, and financial management.

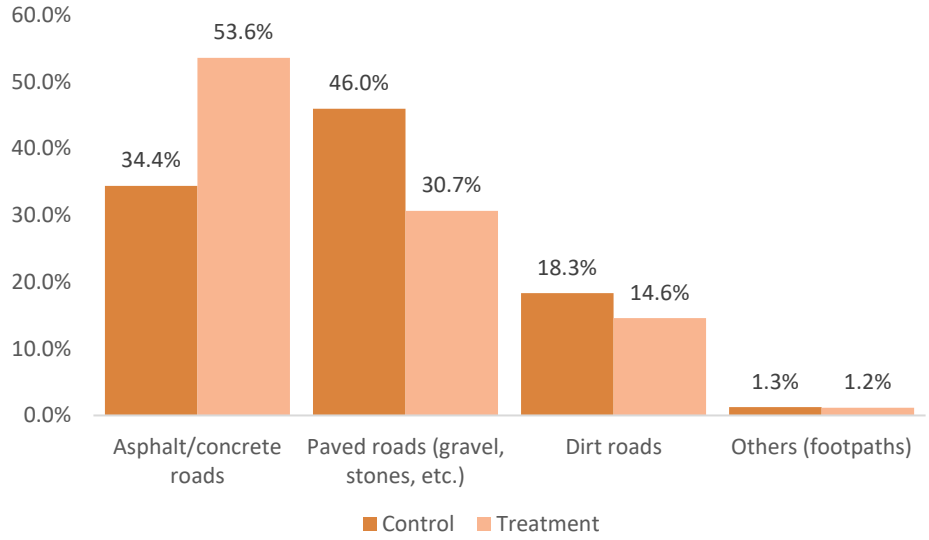
> We do need business capital. Nothing aside from the capital. I need business capital to start another venture. I'd like to sell *gado-gado* [vegetables with ground peanut sauce] again. Since the corona [pandemic], my *gado-gado* stall has been closed until today. I once borrowed some money for the capital from my in-law. I never borrowed money from a bank. If I do, I will have to make monthly payments, while it's not every day I have buyers. (Entrepreneur, female, Kecamatan H, Sumbawa, 25 November 2022)

3.4 Economic Infrastructure

3.4.1 Road Infrastructure

In general, the roads in the treatment and control areas are in good condition. Most households in the treatment area reported that the roads leading to their home are asphalt/concrete roads. Meanwhile, most roads leading to the households in the control area are paved gravel roads (Figure 32). These two types of road surfaces indicate good-quality roads, compared to other types of roads.

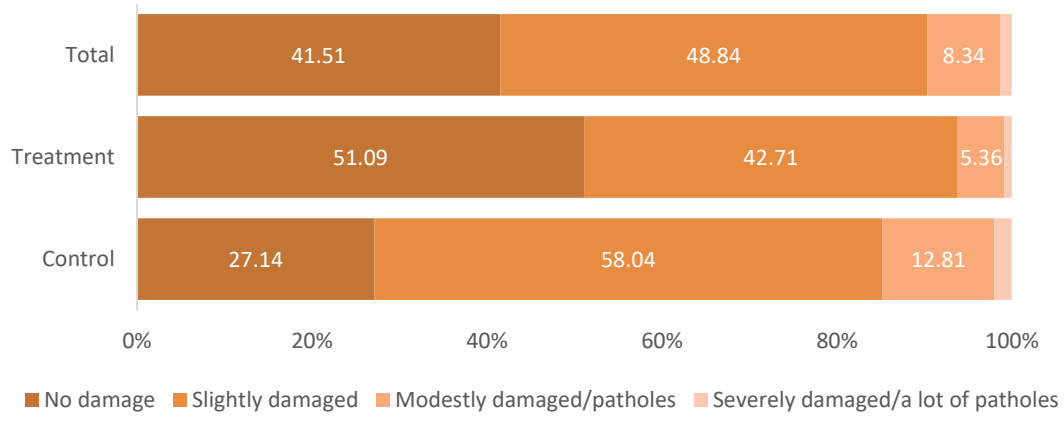
Figure 32. Surface Condition of the Roads Leading to/around Respondents' Homes



Source: SMERU's survey, 2022

Most surveyed households reported that the roads were in good condition and there was only little damage to them (Figure 33). The qualitative interviews reveal that road construction and repair were done not only by the provincial and *kabupaten* governments, but also by the village government according to the division of authority. Not all roads in the village areas have been repaired because of the limited budget. In the treatment area, some people complained about the declining quality of the roads; this is thought to be caused by the transport vehicles from the mining activities that pass the roads.

Figure 33. Quality of the Roads Leading to/around Respondents' Homes



Source: SMERU's survey, 2022

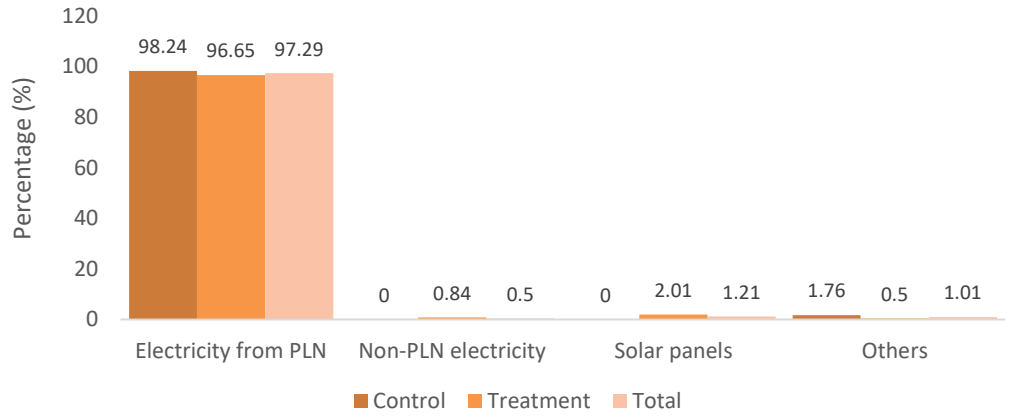
The different quality of roads can affect the communities' economic activities, such as interregional shipments of perishable goods, e.g., fruits and vegetables. Such produce relies heavily on good storage and delivery speed to ensure that they are fit for consumption.

> Sometimes if it takes too long to transport them [vegetables and fruits], they will wilt and be late to reach the [buyer's] storage. If they are wilted or the quality is bad, [the buyer] won't accept them. This hurts our field partners because, if the produce is returned, we cannot pay for their produce. (Health worker and business owner, male, Kecamatan A, KSB, 21 November 2022)

3.4.2 Electricity Infrastructure

The survey shows that more than 95% of the households in the treatment and control areas can access electricity from the State-Owned Electricity Company (PLN). In fact, some households have already installed solar panels as their main source of electricity (Figure 34). To access PLN electricity, some become PLN customers and some others access it from other households' electricity connections.

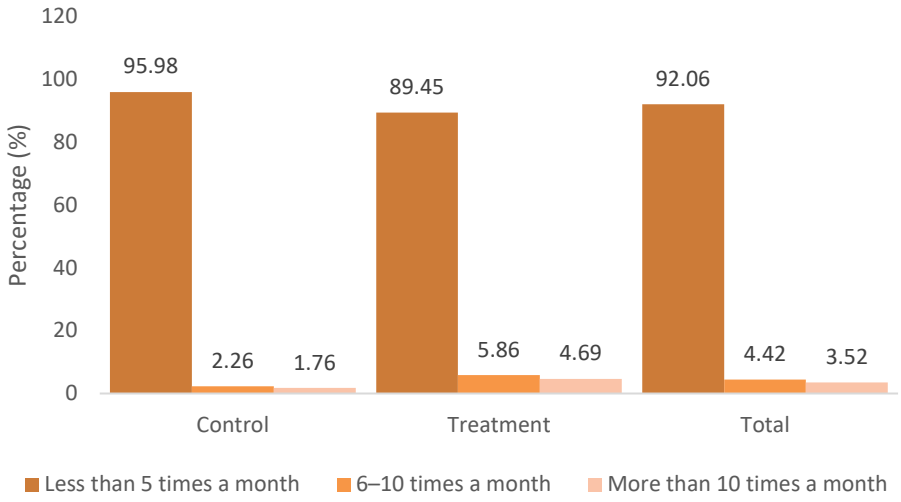
Figure 34. Sources of Electricity



Source: SMERU's survey, 2022

The electricity accessed by the households is of fairly good quality. The quantitative data shows that 92,06% of the households experience up to five power blackouts in a month, with the proportion of 95,98% in the control area and 89.45% in the treatment area (Figure 35). Further analysis of the survey shows that in both study areas, the most reported number of power blackouts is zero to two times in a month. Meanwhile, the qualitative data shows that, in using the electricity, the communities face the challenge of unannounced power blackouts, resulting in disruptions to their activities.

Figure 35. Power Blackout Frequency

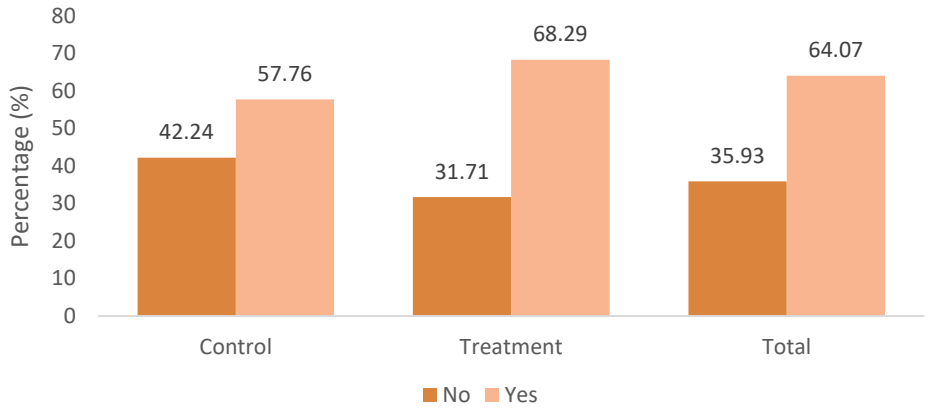


Source: SMERU's survey, 2022

3.4.3 Internet Infrastructure

Around 68.3% of the people aged above 15 years in the treatment area reported that they have accessed the internet at least within the last three months, compared to 57.76% of the people in the control area (Figure 36). The latter is higher than the average number of people accessing the internet at the provincial level (52.27%) although still below the national average (62.14%) as per the National Socioeconomic Survey (Susenas) 2021.

Figure 36. Population above 15 Years Old Having Accessed the Internet within the Last 3 Months

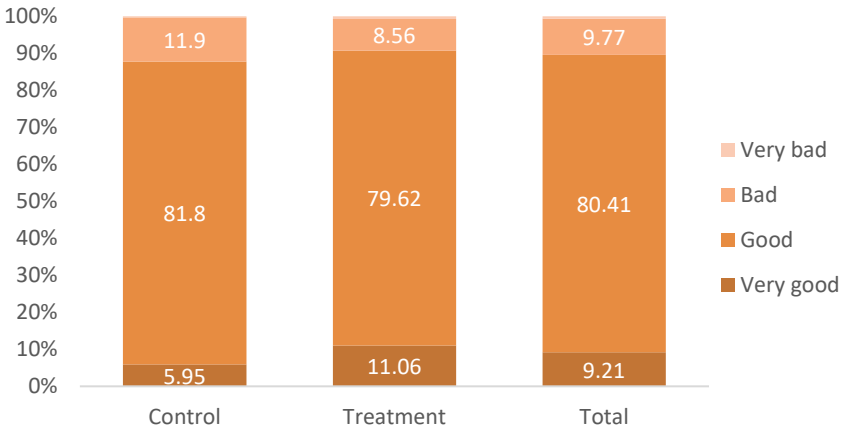


Source: SMERU's survey, 2022

Meanwhile, the quality of the internet in the study areas is categorized as good according to most people who access it. Around 81.8% of the people in the control area and 79.62% of the people in the treatment area reported that the quality of the internet was good (Figure 37). However, there are people who reported bad or even bad internet quality. The communities in both the treatment and control areas have used the internet to support their economic activities, such as selling and marketing their products via social media.

They have also used it to communicate with buyers/suppliers/business partners both inside and outside the *kabupaten*.

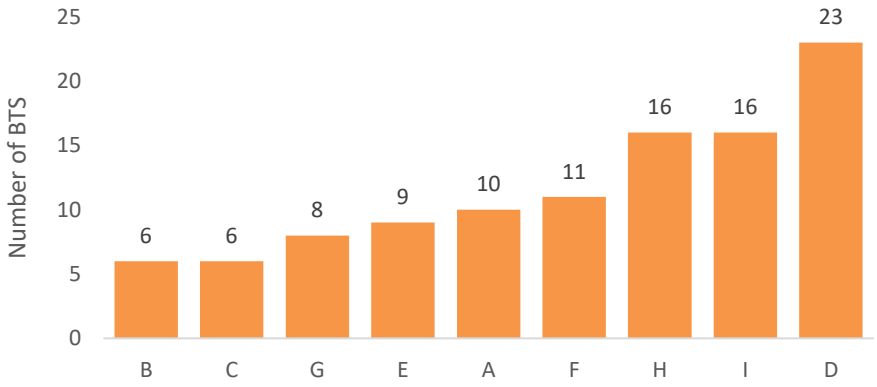
Figure 37. Quality of the Internet According to the Population above 15 Years Old Having Accessed It within the Last 3 Months



Source: SMERU's survey data, 2022

Good quality internet requires good infrastructure. Podes 2021 issued by the BPS shows that almost all *kecamatan* in the treatment and control areas have a base transceiver station (BTS) (Figure 38). BTS is an important telecommunication infrastructure to establish wireless connectivity between network operators and communication devices. *Kecamatan* with the most BTS is Kecamatan D (23 towers), while *kecamatan* with the least BTS are Kecamatan B and C (six towers each). These three *kecamatan* are located in the treatment area.

Figure 38. Number of BTS



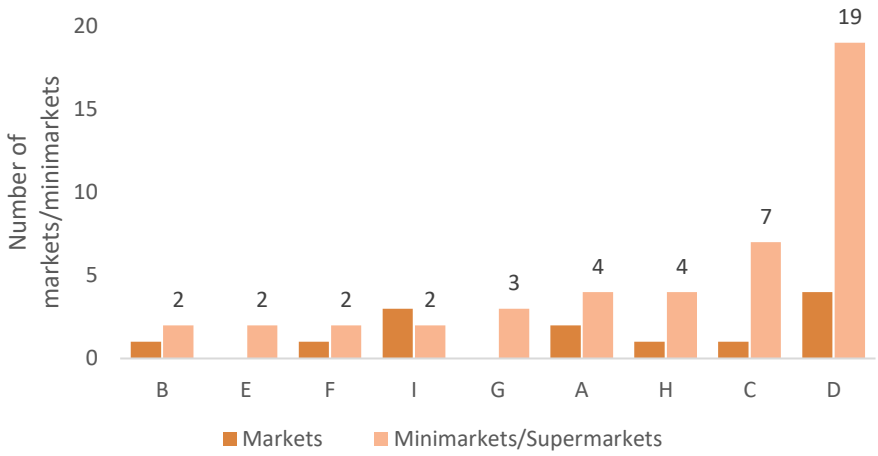
Source: Podes 2021

3.4.4 Market Infrastructure

Podes 2021 shows that some *kecamatan* in the treatment area, such as Kecamatan E and Kecamatan G, do not have markets (Figure 39). However, there are minimarkets/ supermarkets in each *kecamatan*. *Kecamatan* with the highest number of minimarkets/

supermarkets is Kecamatan D, which has some urban characteristics compared to other *kecamatan* in the treatment area.

Figure 39. Number of Markets and Minimarkets/Supermarkets



Source: Podes 2021

Interviews with market users reveal that some markets have inadequate facilities. In a market in Kecamatan C[20], for example, the wastewater drain is sometimes clogged, not all parts of the market are covered with roofs, and the garbage collection system is far from ideal. The qualitative findings in the treatment and control areas also reveal that minimarkets/supermarkets are seen as competitors, as they have significantly affected traditional grocers' business.

> In the past, I could make a good profit, but now that there are Minimarket A and Minimarket B, [our business] has really gone down. In the past we could get two to three million [rupiah]. Now, it's a good day if we can get Rp500.000. Even the Rp500.000 from the sales is not even a net profit. (Farmer and grocer, female, Kecamatan A, KSB, 20 November 2022)

> Since Minimarket B and Minimarket A have opened their stores here, income from the stall has suffered. People are more interested in the promo [discounts], including comparing prices. I've tried to [work around] it by selling at retail, like selling sugar for a half or a quarter of a kilogram or let buyers that I trust pay for the goods later … but [I] limit the amount of money and time for the pay-later service because it [can] affect my capital. (Trader, female, *Kecamatan* H, Sumbawa, 24 November 2022)

3.4.5 Financial Service Infrastructure

Economic growth of the communities is expected to be followed by their ability to make use of financial products and/or services that fit their needs and capability. Thus, the

[20]The market in Kecamatan C is accessed by people living in Kecamatan C and the surrounding *kecamatan*. It is managed by the local BUMDes since 2016. The traders are required to pay some money for cleaning, security, internet connection, and daily retribution to the market operator.

government has taken measures for improving people's financial literacy[21], balanced with efforts to promote financial inclusion[22]. Based on the Financial Services Authority Regulation (POJK) No.76/POJK.07/2016, improving financial literacy is done through financial education. Meanwhile, financial inclusion is promoted by ensuring (i) access to financial institutions, products, and/or services and (ii) the availability of financial products and/or services that meet the needs and capability of the customers and/or the public.

There seem to be some efforts to ensure the availability of financial institutions, products, and/or services in the study areas. Podes 2021 shows that various financial institutions—both banks and nonbanks—are available in the study areas. Institutions, such as sharia-based cooperatives (BMT) and pawnshops, are most widely available. However, financial institutions, such as banks (commercial banks, state-owned banks, and people's credit banks [BPR]) are not available in Kecamatan E and Kecamatan F (treatment area). Kecamatan B and Kecamatan G (the treatment area) have the smallest number of banks (Table 13).

Table 13. Available Financial Institutions

Kecamatan	Banks				Cooperatives		Others		Total
	Government Banks	Private Banks	BPR	KUD[a]	Kopinkra[b]	Kospin[c]	BMT	Pawn-shops	
A	1	1	0	0	0	1	16	16	35
B	1	0	0	1	0	1	8	7	18
C	4	0	0	0	0	1	10	9	24
D	5	2	2	1	0	4	30	29	73
E	0	0	0	1	1	1	18	17	38
F	0	0	0	1	0	0	15	16	32
G	1	0	0	1	1	0	8	7	18
H	2	0	2	2	0	1	20	18	45
I	1	0	2	1	0	3	20	19	46

Source: Podes 2021

[a]village unit cooperatives

[b]small industry and people's craft cooperatives

[c]savings and loan cooperatives

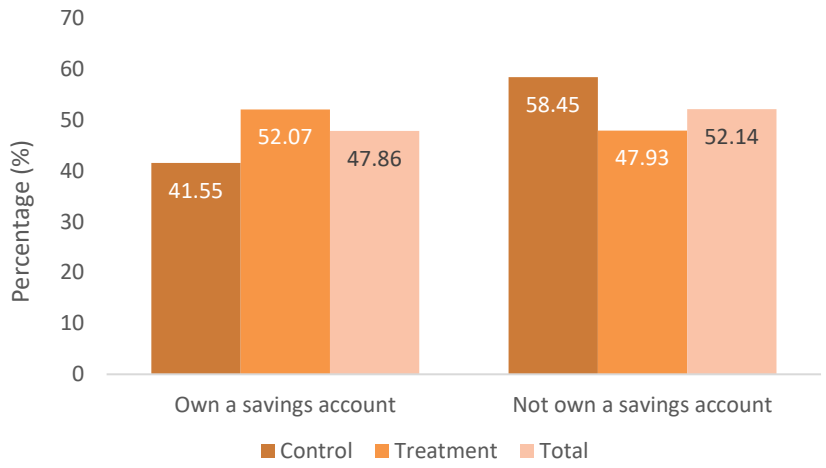
If we look at the various financial products in detail, savings accounts turn out to be the most popular financial product among the communities, according to the findings by the National Survey of Financial Literacy and Inclusion (SNLIK) 2013, 2016, and 2019 (Otoritas

[21]Financial literacy, according to POJK No.76/POJK.07/2016, is knowledge, skills, and confidence which affect attitude and behavior to improve the quality of financial decision-making and management to further efforts to achieve prosperity.

[22]Financial inclusion, according to POJK No.76/POJK.07/2016, is the availability of access to multiple financial institutions, products, and services, according to the needs and capability of the people to further efforts to achieve prosperity.

Jasa Keuangan, 2021). This is also reflected in the survey result. Around half of the population (52%) in the treatment area reported that they have a savings account. On the contrary, more than half of the population (58%) in the control area reported that they do not have a savings account (Figure 40). These proportions are equivalent to 799 people in the treatment area and 422 people in the control area (1,221 people in total).

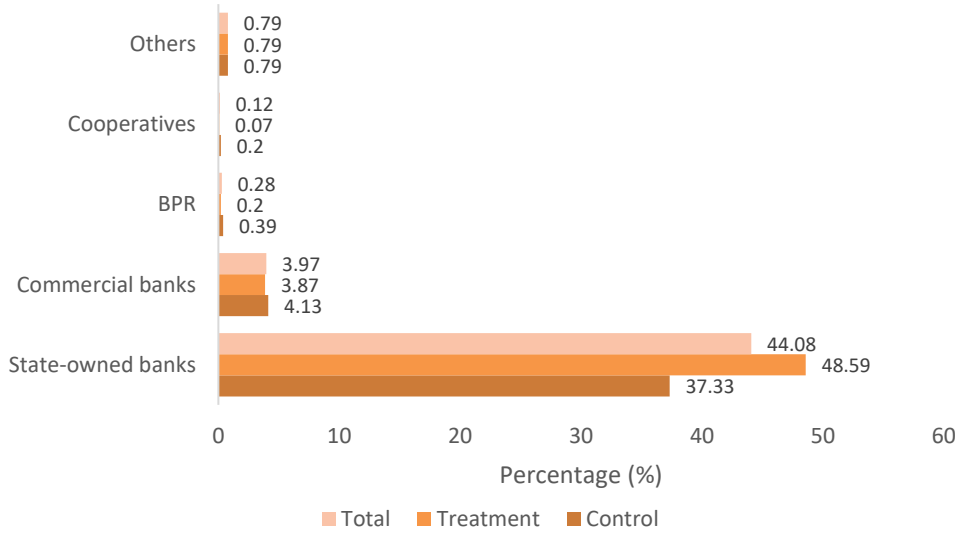
Figure 40. Bank Savings Account Ownership



Source: SMERU's survey, 2022

Most savings accounts owned are from state-owned banks (Figure 41). This shows that people have high trust in state-owned banks compared to other financial institutions.

Figure 41. Financial Institutions of Which People Have an Account or Become a Member

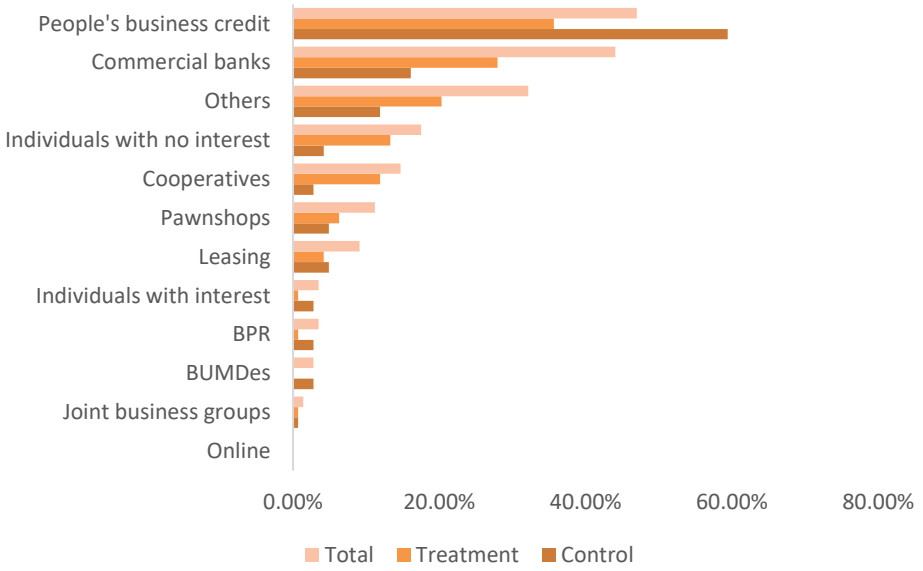


Source: SMERU's survey, 2022

Financial literacy is also reflected from the way people choose the source of loans when they need them. The survey findings show that most business actors in the treatment and control

areas have made use of a microcredit program for their business. However, some still access business loans from individual lenders with interest charges (Figure 42 42).

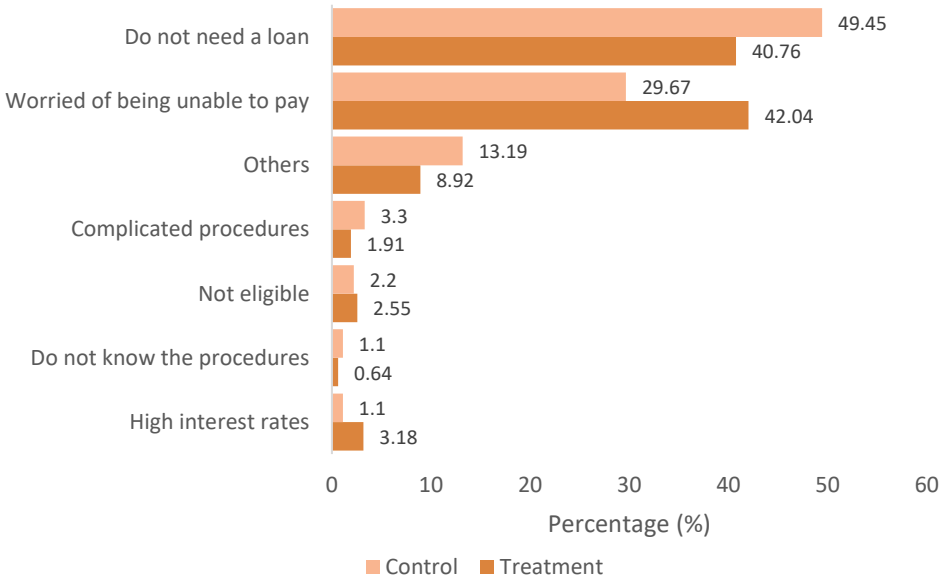
Figure 42. Sources of Business Loans



Source: SMERU's survey, 2022

However, some business actors do not access/have not yet accessed business loans within the last year. Most of the business actors do not have the courage to take business loans because they find it unnecessary and are afraid of failing to make the repayments (Figure 43).

Figure 43. Business Owners' Reasons for Not Accessing Business Loans



Source: SMERU's survey, 2022

> I once borrowed some money for business capital from my in-laws. I have never borrowed money from a bank. If I do, I will have to make the monthly repayment, but it's not every day that I have buyers. (Trader, female, Kecamatan H, Kabupaten Sumbawa, 24 November 2022)

The data presented above shows (i) a high proportion of people with no bank accounts despite the available financial institutions, (ii) the availability of loan sources from nonfinancial institutions, and (iii) business actors not accessing a business loan even though they may need it. These indicate the need for improving people's financial literacy in the study areas.

Such a hypothesis is supported by the qualitative findings which show various financial goals. Some people have a long-term financial goal, such as paying for education or collecting business capital. Some others have a short-term financial goal, such as to fulfil their daily needs, including their lifestyle.

> I save my money in BNI Tapenas for my children's education for the period of ten years. The monthly deposit is [Rp]300,000. (Staff member of the village office and mother of an under-five child, Kecamatan A, KSB, 20 November 2022)

> For traders like me, it's important to keep our money in a bank account, so that anytime there are [potential] goods that customers like, [then] I can have them stocked in my store. (Owner of a household appliances shop, female, Kecamatan A, KSB, 20 November 2022)

> I set aside [Rp]50,000 every day, in a piggybank at home. It's for [my] children's education. At the moment, I save about [Rp]30,000 every day and there is other savings of [Rp]20,000 every day. So, it's [Rp]1.5 million per month [in total], for [my] children's education. (Trader and mother of three school-age children, Kecamatan H, Sumbawa, 24 November 2022)

> Her life is all about style. She's big on style … she has to appear [like a rich person] to her parents even though she actually doesn't have much. She even doesn't have enough to eat, but she forces herself to borrow money. For example, if there is a social function and she has no dress … [she would] buy it on credit or [say] 'I borrow it for now … and [pay] later.' It's not possible to just appear as she is. Even if she cannot buy things on credit, she'd borrow from friends. Borrow, borrow, borrow, to ensure that she looks nicer than others. (Homemaker and family furniture-business owner, female, Kecamatan H, Kabupaten Sumbawa, 24 November 2022)

Improving financial literacy is essential. With improved financial literacy, people can make better family and individual financial decisions, which can ultimately pave the way to improving their welfare. Financial skills can help people understand the economy, make financial decisions, promote businesses, and ultimately foster economic growth (Otoritas Jasa Keuangan, 2021).

Box 1
Sharia-Based Cooperatives as an Alternative Financial Institution for the Communities

The study findings underline that people access loans from moneylenders called *bank rontok* or *bank subuh*. These moneylenders may be an individual or an entity similar to a cooperative. People go to them mainly because the process is usually fast and the requirements are easy to meet despite relatively high interest charges. This is different from a formal financial institution, which requires its prospective debtor to be bankable and have passed a certain process.

Cooperatives, as a nonbank financial institution, should provide an alternative for people who are not bankable. However, the function of cooperatives has continued to weaken.

> The condition of cooperatives in KSB is not like it used to be. In the past, people relied heavily on cooperatives because other financial institutions were not available. Now, with the emergence of various financial entities with the new format and system, cooperatives cannot compete. (Staff member at the Industry, Trade, and Cooperatives Agency of KSB, 23 November 2022)

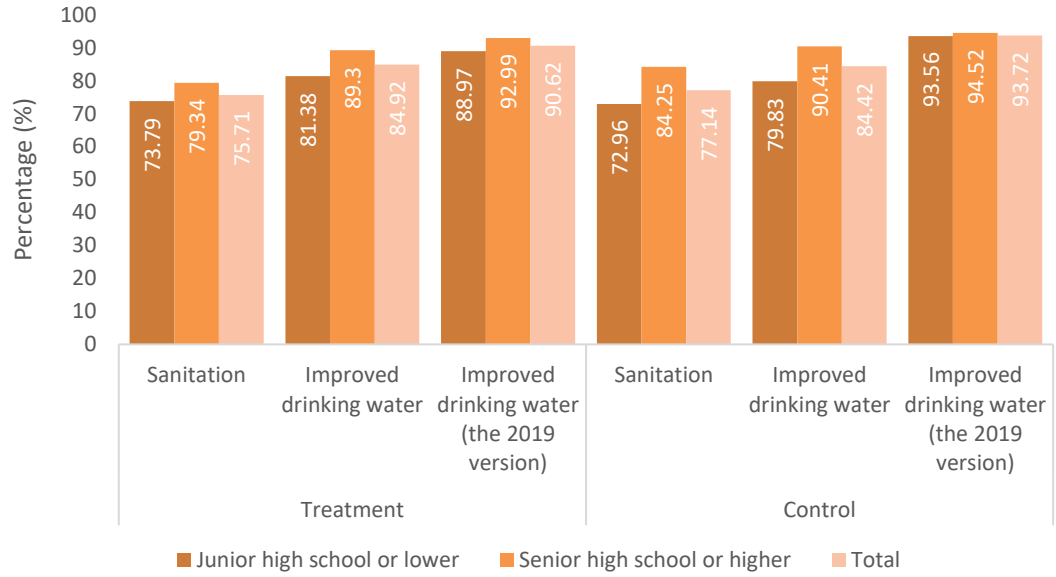
Therefore, since 2021 the regional government—through the industry, trade, and cooperatives agency—has facilitated the founding of sharia-based cooperatives, which are expected to become, among other things, an alternative to financial institutions and to help improve people's welfare. This is part of the usury-free area program, which was declared at the provincial level. The profit-sharing system in the sharia concept is expected to fit with people's financial condition and capability. However, the effort to establish a sharia-based cooperative is facing a constraint because of the lack of human resources for its management. Another challenge is how to ensure the institutional strength of the cooperatives and the commitment of not only its management but also its members. These are important points to consider so that past failures will not be repeated.

Source: SMERU's interview, 2022

3.5 Basic Infrastructure

Data from the survey shows that households' basic infrastructure in both study areas is in relatively good condition. Households' access to improved drinking water has reached 84% in the treatment and control areas (Figure 44). Access to good sanitation in both study areas is around 76%–77%. In 2019, the BPS changed the definition of access to improved drinking water. Before 2019, the BPS defined access to improved drinking water as a source of water for drinking, bathing, and doing other daily necessities; this includes water sold in retail/metered water, rainwater, and water from a ground water pump/protected well/protected water spring whose distance to the nearest septic tank is 10 meters. Since 2019, the definition has referred to the SDGs metadata, namely a household is said to have access to improved drinking water if the main source of drinking water is tap water, protected water, and rainwater. Protected water includes water from an artesian well/pump, a protected well, and a protected water spring. For households whose source of drinking water is bottled water, they are still categorized as having access to improved drinking water as long as the water used for bathing/washing is tap water, water from an artesian well/pump/protected well, and rainwater.

Figure 44. Households' Access to Improved Drinking Water and Sanitation



Source: SMERU's survey, 2022

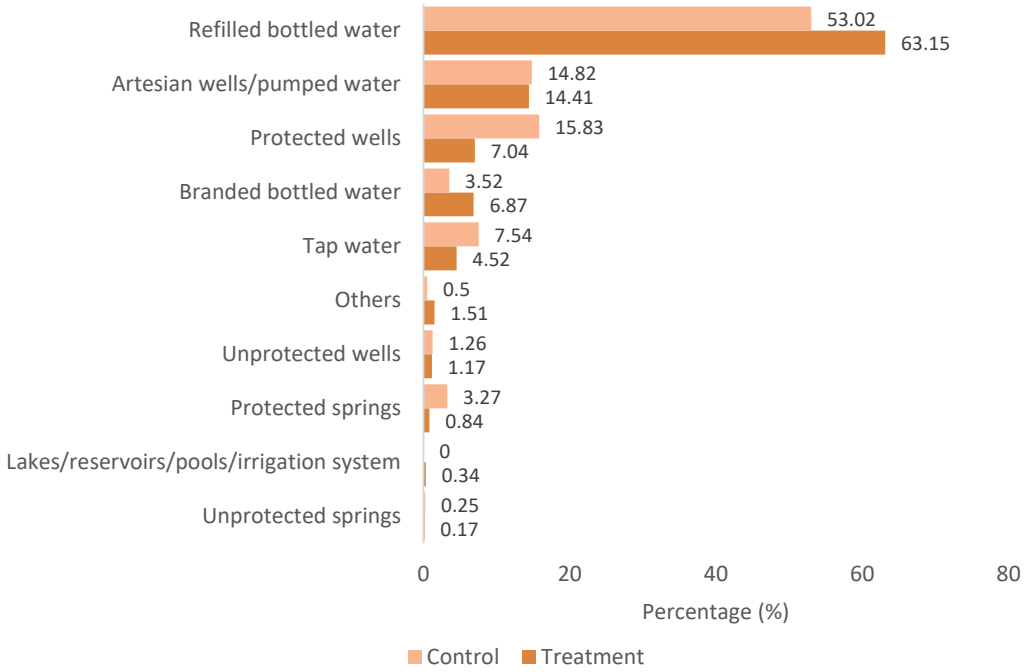
There is a statistically significant difference between households where the head has attained higher levels of education and those with the less-educated household head regarding access to improved drinking water, both for the old and new version of the definition[23]. This shows that educational attainment is one of the determinants of the access to improved drinking water and sanitation.

Despite good condition of the basic infrastructure, the quality of water sources still needs improvement. Around 10% of the households reported that the water they used for drinking, bathing, and washing had a taste and around 5% of the households reported that the water they used had a color or an odor. Especially in the control area, around 7% of the households also reported that the water they used was murky.

Sources of clean water used by the communities in both the treatment and control areas come from well water, refilled bottled water, and water from the Local Water Supply Company (PDAM). The quantitative data also shows that the water used is mostly refilled bottled water and well water (Figure 45). Aside from these water sources, people in some villages/*kecamatan* also access clean water from the Community-Based Drinking Water and Sanitation Provision (Pamsimas). People usually rely on refilled bottled water to drink and use water from other sources for cooking and bathing/washing/toilet purposes.

[23]except for the latest version (since 2019) of the indicator of access to improved drinking water in the control area

Figure 45. Households' Main Sources of Water



Source: SMERU's survey, 2022

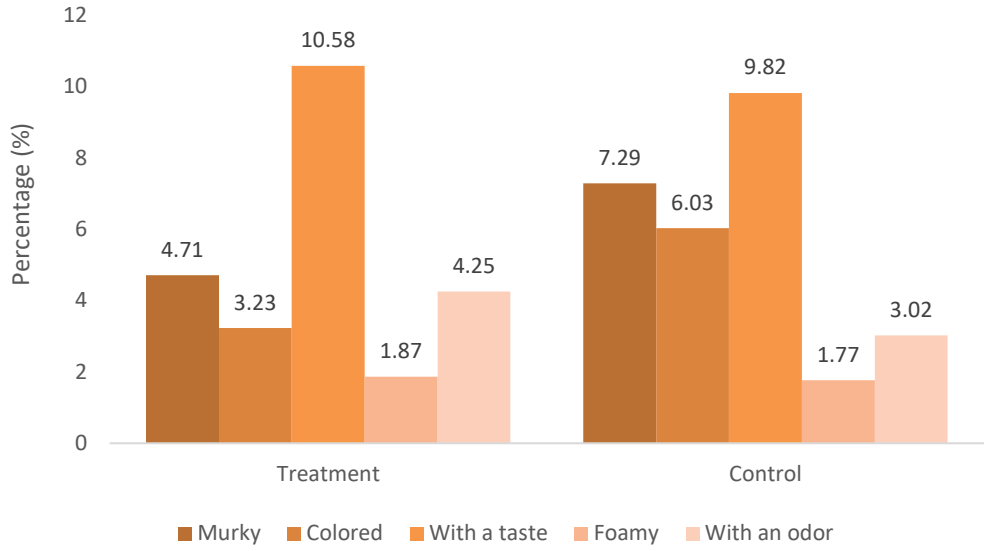
There are some challenges of accessing various clean water sources. Complaints related to water from an artesian well were about water quality (calcareous water), water becoming murky in the rainy season, and water discharge decreasing in the dry season (Figure 46). People who use water from the PDAM also complained about water quality. One sample village in Kecamatan A, for example, complained about the murky PDAM water during the rainy season. Despite being considered having good quality, the Pamsimas water is not available in all areas in the village. Refilled bottled water is easy to find because the sellers are around the neighborhood. However, people have to pay in order to access refilled bottled water, PDAM water, or Pamsimas water. This means that households' economic condition affects their decision on whether they will consume the water from these sources.

> PDAM water is expensive. ... Sometimes [a neighbor] complained, paying Rp200,000 to Rp300,000 a month. [My relative] used the PDAM water once, but the water was black. (Farmer and trader, female, Kecamatan A, KSB, 20 November 2022)

> Pamsimas has not reached all *dusun*. ... [The quality of] the Pamsimas water is good. (Farmer, male, Kecamatan A, KSB, 20 November 2022)

> I used to boil well water here [Village A3], it was calcareous, so my husband and I decided to stop using well water to cook and we switched to refilled water that cost us Rp5,000. ... We have three water depots [sellers] here and there is also a water peddler that goes around [the neighborhood], so there are four sellers. ... We [buyers] just need to put an empty gallon at the front [of the house]; the seller will ask if we want to have it refilled. After we buy two or three times, they'll ask if we want to become a customer. (Homemaker and trader, female, Kecamatan A, KSB, 20 November 2022)

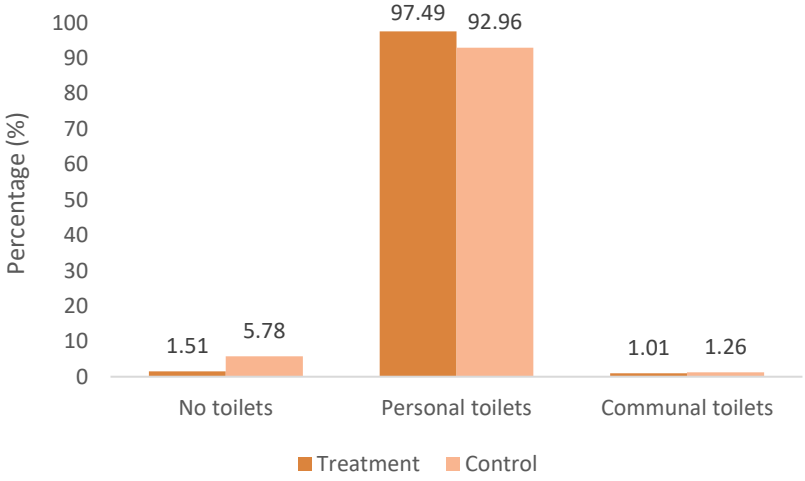
Figure 46. Condition of Water from the Water Sources Used by Households



Source: SMERU's survey, 2022

Regarding sanitation, more than 90% of the households in the treatment and control areas have private toilets (Figure 47). In other words, the proportion of access to good sanitation in both study areas is high, albeit not 100%.

Figure 47. Household Toilet Ownership



Source: SMERU's survey, 2022

In 2021, the treatment area declared itself as a *kabupaten* that has fully enforced the five pillars of the community-based total sanitation. Meanwhile, in 2022 the control area declared itself as an open-defecation free *kabupaten*. These achievements are reflected in the ownership of households' sanitation facility; on average, households use the toilet and have a septic tank at home.

Box 2
Lagging Behind in the Provision of Basic Sanitation and Clean Water Infrastructure

This study finds that access to improved drinking water and proper sanitation has been quite high. However, some limitations persist, as experienced by the communities, including the Sumba community who live in one of the *dusun* in Kecamatan A (KSB). Most of the people in the community came to work as odd laborers even though some of the younger members of the community are currently working in the formal sector. They built a nonpermanent housing complex on an unused land with the landowner's permission, which came with the task of looking after the land. They usually live in groups according to the land they are to guard or take care of. In the middle of this complex, they built a nonpermanent church. Mrs. Hermina [not her real name] is one of the members of the Sumba community. She and her family live together with some other Sumba households on a plot of land. Mrs. Hermina's husband—along with some other Sumba people—went to KSB in 2002 to work and later were followed their family members, including Mrs. Hermina. Administratively, they are registered as KSB residents (having KSB ID cards).

According to Mrs. Hermina, the community members access clean water to wash, cook, and take a bath from a dug well near their home. The water from the well is used jointly by several households in the community. Sometimes, Mrs. Hermina has to stand in line to fetch the water from the well. Even though the well water is always available, it usually becomes cloudy in the rainy season. They access drinking water from the pipelines available at the entrance of the mining area for free. Because her son works at the mine, it is not difficult for him to bring home some water after work. In fact, their neighbors sometimes ask him to bring home some water for them. Mrs. Hermina's son would use a 25-liter jerrican to carry the water. Mrs. Hermina believes that it is not necessary to boil the water first because it is clean and clear.

Mrs. Hermina's household uses a communal bathroom and toilet, which they share with the neighbors. The communal toilet is a nonpermanent structure made of corrugated iron sheets and unused clothes without a roof. They use a squat toilet without a septic tank, built 10 meters apart from the well. According to Mrs. Hermina, some households have their own bathrooms/toilets, but the condition is pretty much similar—a semi-open nonpermanent structure. She reported that until now there has been no clean water and sanitation program reaching their housing complex.

Source: SMERU's interview, 2022

3.6 Health

3.6.1 Access to Health Insurance and Health Facilities

The quantitative survey shows that the health insurance ownership in the treatment area has been very high, namely 83.2%. This figure is far higher than the health insurance

ownership in the control area (60.1%)[24]. The high coverage of health insurance is the main foundation for achieving more resilient population health. Thus, the high coverage of health insurance in the treatment area needs to be appreciated as this means that people can access health services when they are ill without financial worries.

Nevertheless, the data collected by the quantitative team shows that in both the treatment and control areas, only about a quarter of the population access health facilities when they have a health problem (Figure 48). This phenomenon is observable in every group of the community, regardless of educational attainment, gender, age, and employment status. However, 56.9% of the population in the treatment area and 41% of the population in the control area use health insurance when accessing a healthcare facility.

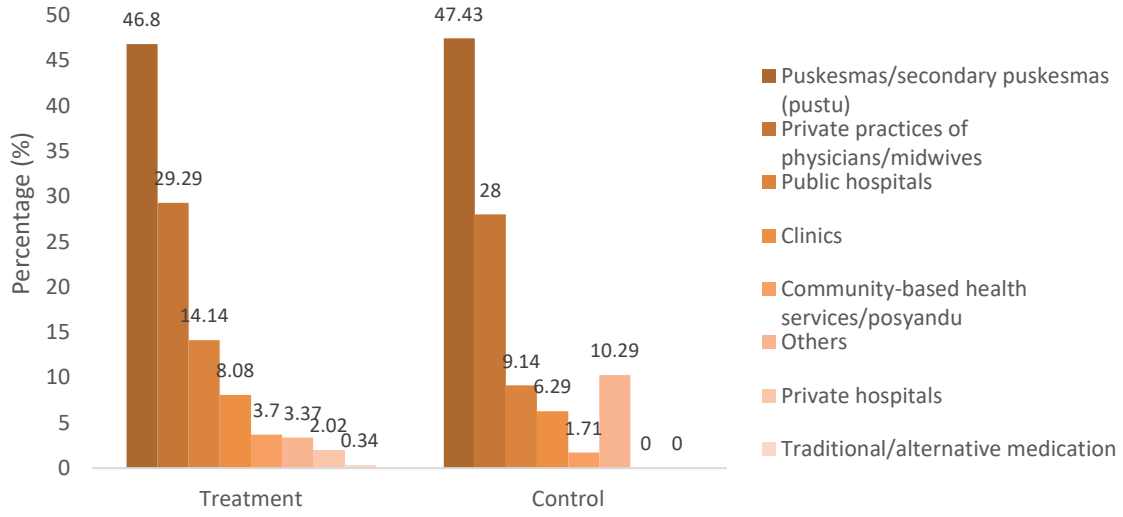
With such a high coverage and utilization of health insurance, we can assume that the health service system in the treatment area has been quite inclusive. This is supported by qualitative findings that people have health insurance, both as premium assistance beneficiaries (PBI) and as independent participants. The Government of KSB seems keen on achieving Universal Health Coverage (UHC) by improving people's participation in the National Health Insurance (JKN)-Healthy Indonesia Card (KIS) program, which reached 96.3% in 2017 (Badan Penyelenggara Jaminan Sosial Kesehatan, 2017). The Government of KSB is committed to registering (i) all the people categorized as nonwage recipient workers and nonworkers with the KSB ID card that have not been registered as JKN participants, and (ii) those with the KSB ID card who were previously registered whose participation status has been changed to nonwage recipient workers dan nonworkers by the government.[25] However, the qualitative finding reveals that, in practice, a patient with the KSB ID card but not yet registered as a participant can still receive a free health service. At the same time, the patient will be encouraged and assisted to register for JKN, as this will make it easier for the person to access healthcare services in the future.

Of all the available healthcare facilities, *puskesmas* and (independent) physician's/midwife's/nurse's practices are the two most preferred healthcare facilities and this is evident in both the treatment and control areas (Figure 48). This shows that first-level health facilities play an important role in the effort to improve healthcare services for the communities.

[24]Health insurance ownership refers to the percentage of the people who have health insurance, either the Social Security Implementing Agency (BPJS)-PBI, BPJS Independent, Regional Health Insurance (Jamkesda), private health insurance, or health insurance provided by the office/company.

[25]Regulation of Bupati KSB No. 11 of 2022 on the Registration of Nonwage Recipient Workers and Nonworkers by the Regional Government to Become the Participants of Health Insurance

Figure 48. Types of Healthcare Facilities People Access When Sick



Source: SMERU's survey, 2022

To further improve people's access to healthcare facilities, mobile *puskesmas* and home visit services have been made available. These services have eased people's access to healthcare facilities, especially for the vulnerable group with mobility limitation, such as older people and people with disability.

> To bring health services closer to the community, there have been mobile *puskesmas* dan home visit [services], especially designed for the detection and dissemination of information about sexually transmitted diseases [STD] [if there are reports from the family, the village administration, or the community]. This mobile service is especially designed for older people and people with disability, as it is not easy for them to go to *puskesmas*. (*Puskesmas* staff member, male, Kecamatan C, KSB, 22 November 2022)

Despite good coverage of health insurance, there are challenges in term of the infrastructure to support healthcare services. The qualitative informants emphasized the difficulties village administration's staff faced in supporting people who need to access healthcare facilities in the city. This issue arose because there was no supporting facility/infrastructure, such as village operational vehicles.

Box 3
Lack of Supporting Health Facilities in Villages

Firman (not his real name) is the head of one of the villages in the study area who frequently discusses the socioeconomic situation in the village, especially regarding the availability of supporting infrastructure. One of the things that Firman highlighted was the lack of an operational (four-wheeled) vehicle in the village. He said that a village needs an operational vehicle to help people who need to access healthcare services, especially in the city. The people in Village X (the village's name is disguised) usually ask their neighbors' help when they are ill and borrow their car to access healthcare services. Firman often lends his own car to someone who needs to access a healthcare facility in the city, such as Taliwang. Besides his car, the villagers quite rely on the village secretary's car to access a healthcare facility in the city. He lamented over this issue because the village should have had an operational vehicle that caters to people's needs. Firman cited an example of a villager who had bowel cancer and had to go back and forth to Sumbawa to get medication using his car.

> Like today, my car is still in Taliwang, borrowed by a villager to get medical treatment, so I can't use it to get to work. They just fill the gas when they borrow the car. If we have a village car, villagers can use it. Those who can help us provide an operational car can actually be from the company [Amman] or can also be from the regional government. (Staff at a village office, male, Kecamatan A, KSB, 21 November 2022)

Source: SMERU's interview, 2022

Another issue related to the health sector lamented by some qualitative informants was the limited number of medical specialists at *puskesmas*. The medical specialists not yet available are, among others, the ear, nose, and throat (ENT) specialists; ophthalmologists; pediatricians; and surgeons. This finding was confirmed by some informants at the *kecamatan* to *kabupaten* level who complained about the limited availability of healthcare workers, including nurses and dentists. This caused delays in patients' treatment because they had to seek healthcare facilities or doctors outside their place of residence and this usually means that they have to go to the city. Aside from the ineffective process of seeking treatment, another implication is that patients have to bear the extra costs to access medical treatment in the city, either in a hospital or in a private physician's practice.

Even though people can use the Social Security Implementing Agency (BPJS) insurance scheme when seeking medical treatment in the city using a referral system, patients still have to bear the extra burden of distance, time, and cost to travel to the city. To ease these burdens, the lack of medical specialists at the *puskesmas* level must first be addressed, which will eventually ease the workload of the existing health workers.

> ENT specialists are available in Taliwang, in the regional public hospital or doctors' private practices. If the villagers need to consult a specialist, they must go to Taliwang. The problems are distance and time. For the transportation, they usually use their own vehicle or use an ambulance from *puskesmas*. It takes about an hour to get to Taliwang. (Elementary school teacher, male, Kecamatan A, KSB, 21 November 2022)

> At the moment, we are two dentists short to be assigned in Kecamatan D. The lack of healthcare workers in Sumbawa Barat may be caused by Regulation of the Minister for State Apparatus Empowerment and Bureaucratic Reform regarding the prohibition of hiring

> workers[26] receiving honorarium and because there hasn't been any new civil servant recruitment so far. (Staff member at the Health Agency of KSB, female, Kecamatan D, KSB, 23 November 2022)

> For one examination and the medicine at a physician's practice, we'll need to pay [Rp]200.000–[Rp]250.000, depending on the type of the medicine. (Trader, male, Kecamatan C, KSB, 23 November 2022)

The large number of people not accessing healthcare facilities occurs primarily because they do not feel the need to go to a healthcare facility and prefer self-medication (Figure 49). People still think that there is no urgency to take their family member to a health facility if self-medication suffices, usually by taking over-the-counter or herbal medicines. The practice of self-medicating can harm one's health especially if the medicines are consumed without doctors' supervision.

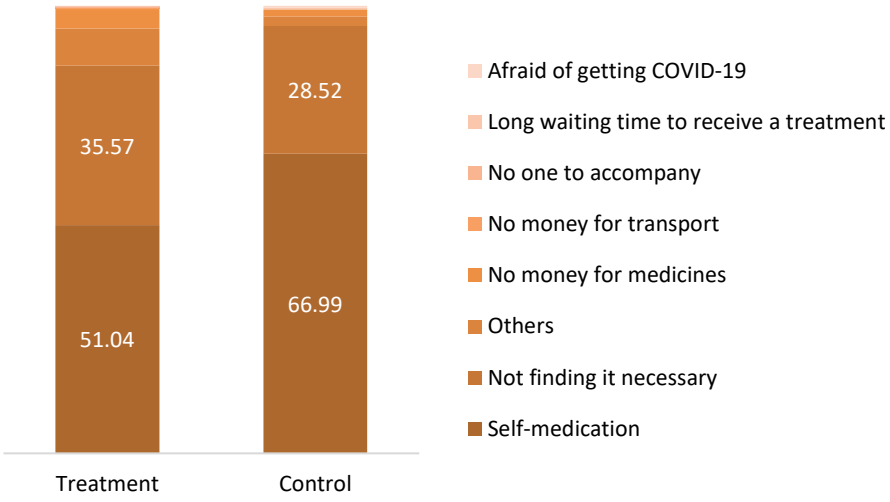
The qualitative findings show that one factor causing people to not go to a healthcare facility is their distrust of healthcare institutions. Qualitative informants reported that there are fears of the chemicals contained in the medicines administered by healthcare workers. Another reason reported by the informants is people's distrust of doctor's diagnosis, which leads to their resorting to herbal medicines. Self-treatment and self-medication are also deemed easier, but they may harm people's health if not done properly. Self-medication can lead to incorrect diagnosis, a delay in treatment, worsening side effects, dangerous interactions between medicines, wrong dosages and therapy, and risk of dependence on and abuse of drugs (Ruiz, 2010).

> When our children are sick, we don't take them to the doctor; we just use natural oil. For example, when they have a fever, we just apply a mixture of *kutus-kutus* oil [a kind of aromatic oil] and shallots. We don't want to take them to the doctor because we don't like chemical medicines. (Village Consultative Body [BPD] member, female, Kecamatan A, KSB, 21 November 2022)

> In 2013, I was told that I had cervical cancer, but maybe the doctor made a wrong diagnosis. Thank God, after consuming herbal medicines, I'm well until today. (Farmer and trader, female, Kecamatan A, KSB, 21 November 2022)

[26]Letter of the Minister of State Apparatus Empowerment and Bureaucratic Reform No. B/185/M.SM.02.03/2022 on the Employment Status within the Agencies in the Central and Regional Governments

Figure 49. Reasons for Not Going to a Healthcare Facility When Sick

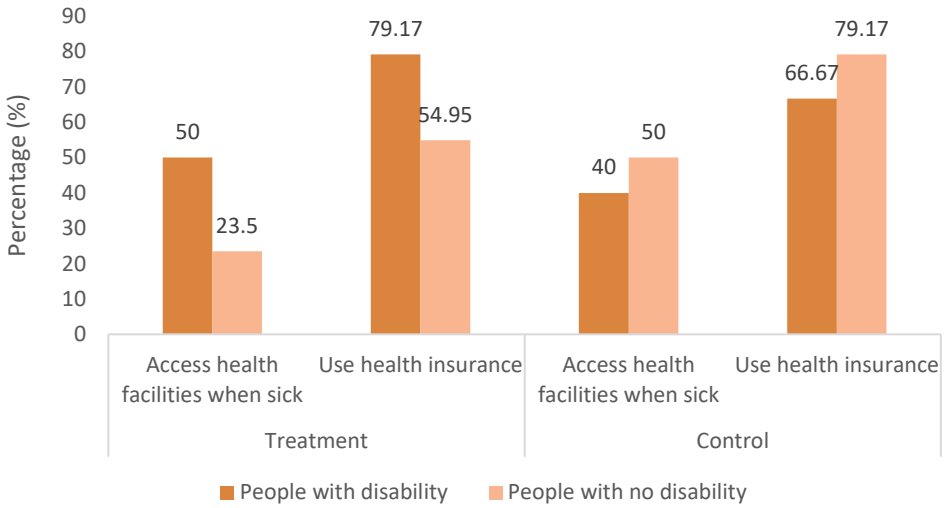


Source: SMERU's survey, 2022

There are some interesting findings in the treatment area about the access to health facilities for people with disability who have fallen ill. Of all the people with disability who have a health problem, exactly half access health facilities and 79% use health insurance when accessing medical assistance (Figure 50). Through the statistical significance test, we learn that the percentage of people with disability who access a healthcare facility when ill is higher than that of people with no disability. This shows that (i) the health insurance in the treatment area is indeed inclusive particularly for marginalized groups and (ii) health services in the treatment area are disability friendly.

The good access to healthcare services for people with disability shows the Government of KSB's commitment to realizing inclusive development, as stipulated in its Regional Regulation No. 6 of 2020 on the Protection and Fulfillment of the Rights of People with Disability. The right to health for people with disability is one of the foci in the regulation, which states that all healthcare service providers are required to accept patients with disability without discrimination and all healthcare service providers should not refuse to provide care for people with disability. This regulation reflects the government's recognition of the people with disability and its effort to enforce their rights as a part of inclusive development. Realizing inclusive development is a process that requires long-term intervention for people with disability and those with no disability to create disability-friendly environments and relationships (Hastuti et al., 2020). The regulation is also seen as a strategic first step in realizing inclusive development as a form of respect and recognition of people with disability in KSB.

Figure 50. Access to Healthcare Facilities and Utilization of Health Insurance by People with Disability



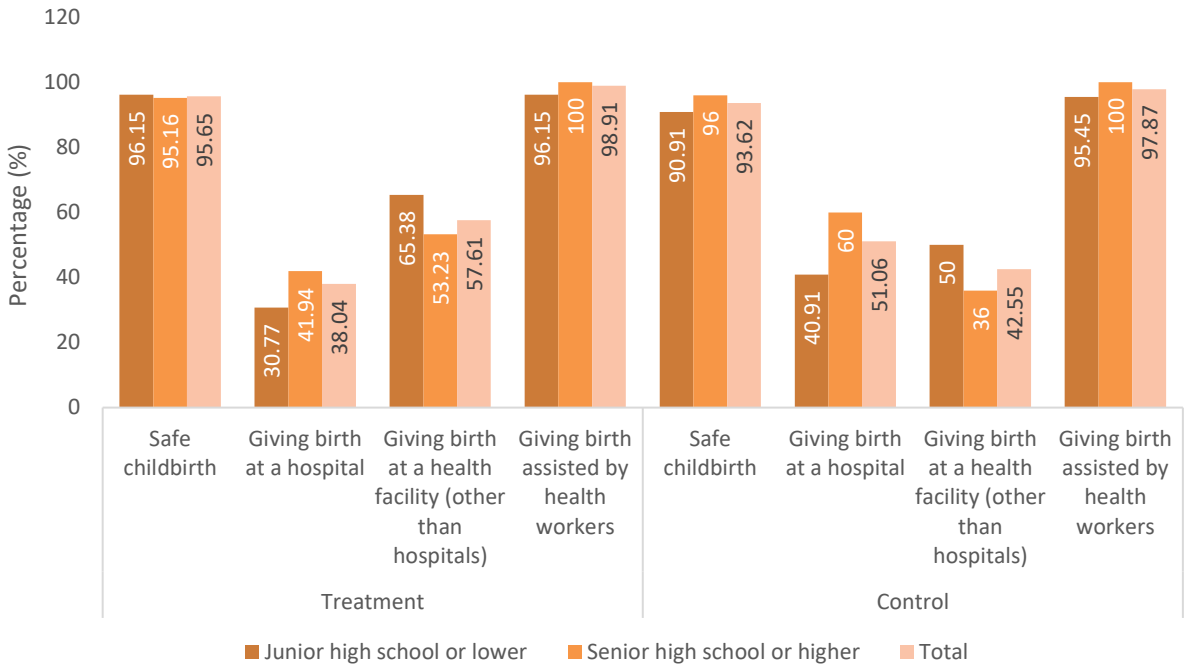
Source: SMERU's survey, 2022

3.6.2 Safe Childbirth

One of the indicators to measure the achievement of women's health as well as maternal and child health (MCH) is safe childbirth. Data from the quantitative survey in both study areas show that the percentage of safe childbirth[27] is already high (Figure 51). Around 95.7% of women aged 15–49 years in the treatment area within the last two years have given birth at a healthcare facility, such as hospitals, clinics, or *puskesmas*, and they received help from professional or trained healthcare workers. In the control area, the same indicator reached 93.6%. Even though less-educated women tend to go through a less-than-safe labor process, the difference between educational levels is not statistically significant. Particularly in the treatment area, there are fewer women with higher educational levels who opt for an unsafe labor process. Despite not giving birth at a healthcare facility, the women still receive help from trained healthcare workers. A hundred percent of these women with high educational levels go through a labor process with the help of trained healthcare workers. On the contrary, less-educated women tend to go into labor without the help of professional healthcare workers.

[27]Safe childbirth in this report refers to the percentage of women aged between 15 and 49 years who have given birth at a health facility within the last 2 years and were assisted by professional health workers.

Figure 51. Percentage of Safe Childbirth



Source: SMERU's survey, 2022

Data shows that in both study areas most childbirths happen at healthcare facilities other than hospitals. These facilities include *puskesmas*, village maternity centers (*polindes*), *pustu*, or midwives' practices (Figure 51). This happened with both less-educated women and highly educated ones in the treatment area. On the other hand, in the control area, most highly educated women went into labor at a hospital. This indicates that (i) the primary healthcare facilities (other than hospitals) in the treatment area have been well equipped, so they can provide maternity services; and (ii) many women have accessed them.

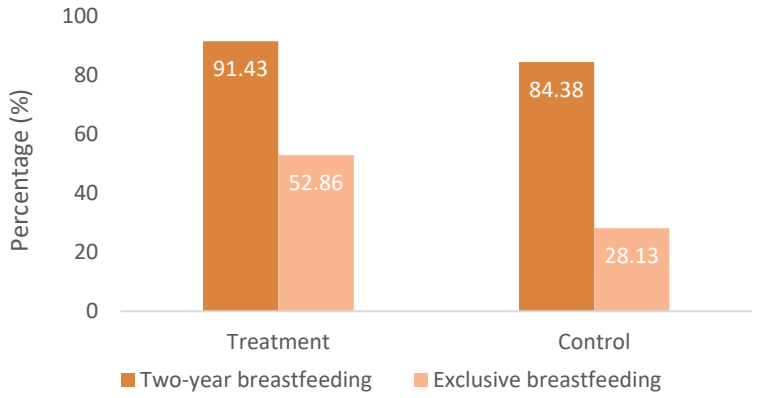
3.6.3 Breastfeeding and *Posyandu* Activities

Children's health is closely related to their nutritional intake and the monitoring of their growth and development. Breastfeeding for two years is an effort to provide children with good nutrition and a way of fulfilling their right, as stipulated in Law No. 36 of 2009 on Health. In both study areas, the two-year breastfeeding rate is high, 91.4% in the treatment area and 84.4% in the control area[28] (Figure 52). On the other hand, the exclusive breastfeeding[29] rate is still quite low, especially in the control area. In the treatment area, more than half of children under two years old have received exclusive breastfeeding.

[28]The interpretation of the indicator related to children under two years old should be done carefully, considering a quite small number of samples (70 children in the treatment area and 32 children in the control area) and the sample frame that did not take into account the composition of children under two years old and those under five years old.

[29]Exclusive breastfeeding is breastfeeding given to a child since they are born until the age of six months without any complementary foods or drinks.

Figure 52. Breastfeeding and Exclusive Breastfeeding Rates

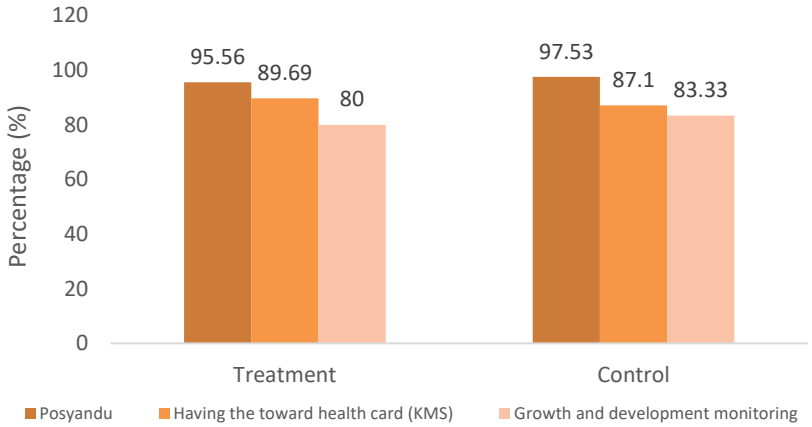


Source: SMERU's survey, 2022

The low exclusive breastfeeding rate in the control area indicates mothers' low awareness of the importance of exclusive breastfeeding, which is the first important step in providing nutrition to children under five years old. Undernutrition is strongly correlated with lower outcomes, such as height, schooling, and economic productivity, as an adult (Victoria et al., 2008). These outcomes are the measures of human resources capacity. Therefore, proper nutritional intake is paramount in improving human resources in a region.

Besides the breastfeeding rate, the percentage of children under five years old routinely taken to *posyandu* is also very high (Figure 53). *Posyandu* activities can serve as the starting point in the eradication of malnutrition among children under five years old because their nutritional status and development are monitored; they also provide early measures of malnutrition cases. In addition, *posyandu* activities can contribute to stunting[30] prevention and mitigation programs. However, it is important to ensure that the capacity of the *posyandu* cadres meets the standard of healthcare services.

Figure 53. Percentage of Children under Five Years Old Taken to *Posyandu*



Source: SMERU's survey, 2022

[30]Stunting is characterized by having a shorter body height/length relative to the child's age. It is caused by long-term/chronic nutritional issues (Kementerian Kesehatan, 2019). Its value is expressed in height-for-age z-score (HAZ). A child is defined as stunted when the standard deviation of the HAZ is less than -2 (WHO, 2006).

Box 4
Intervention to Reduce Stunting Has Been the Priority of KSB Government

The Government of KSB declared stunting as one of the prioritized issues in the health sector. The percentage of stunting cases in KSB rose from 15.09% in 2019 to 15.8% in 2020 (Dinas Kesehatan KSB, n.d.; *Bidikankameranews.com*, 2021). Stunting among children under five years of age is a multidimensional issue that requires multisectoral handling.

Some informants of the qualitative study reported that stunting happened because of improper parenting, lack of nutritional intake, and households' limited knowledge about children's health. These factors are actually the impacts of the problems that have been left unaddressed. The Ministry of Health (2018) stated that the root causes of stunting are (i) low financial and human resources capacity resulting in families being unable to ensure good nutrition intake, (ii) sociocultural practices associated with less-than-good parenting, and (iii) inadequate health services leading to suboptimal interventions to reduce stunting. Therefore, interventions to reduce stunting should be conducted not only in the form of case mitigation but also efforts to address the root cause of stunting.

> There are parents who work as civil servants, but their child is stunted. Their child is almost three years old, but mine is taller. I heard that their child often eats snacks; maybe that's why the child lacks nutrition. (BPD member, female, Kecamatan A, KSB, 21 November 2022)

> Stunting is when a child doesn't get enough nutrition. I got the information from the cadres. They usually talk about stunting here. [When] children don't get complete nutrition, their physical and mental growth slows down. To anticipate this, we pay attention to their food intake, give them nutritious foods, and give them supplements. I give [my child] spinach [and] eggs. He has a big appetite for fish. (Staff member at a village office, female, Kecamatan C, KSB, 23 November 2022)

The Government of KSB has a program called Program Rembuk Stunting (Stunting Discussion Program) to prevent and reduce stunting. This program becomes an intersectoral medium where related agencies talk and formulate preventive, curative, and promotive strategies (initial steps in stunting prevention). In the study areas, there is also a pregnancy class program, run by the local *puskesmas* to disseminate information about MCH. Various efforts to reduce stunting need to be directed toward addressing the root causes of stunting and should be made multidimensional. Stunting should be seen not only as a health issue but also as a socioeconomic one.

Interventions to reduce stunting need to be linked with programs to reduce poverty, improve education, abolish child marriage, strengthen first-level healthcare services, and even foster regional-level food security. Moreover, sociocultural interventions to encourage good parenting will be the key to eradicating stunting among children under five years of age.

Source: SMERU's interviews, 2022

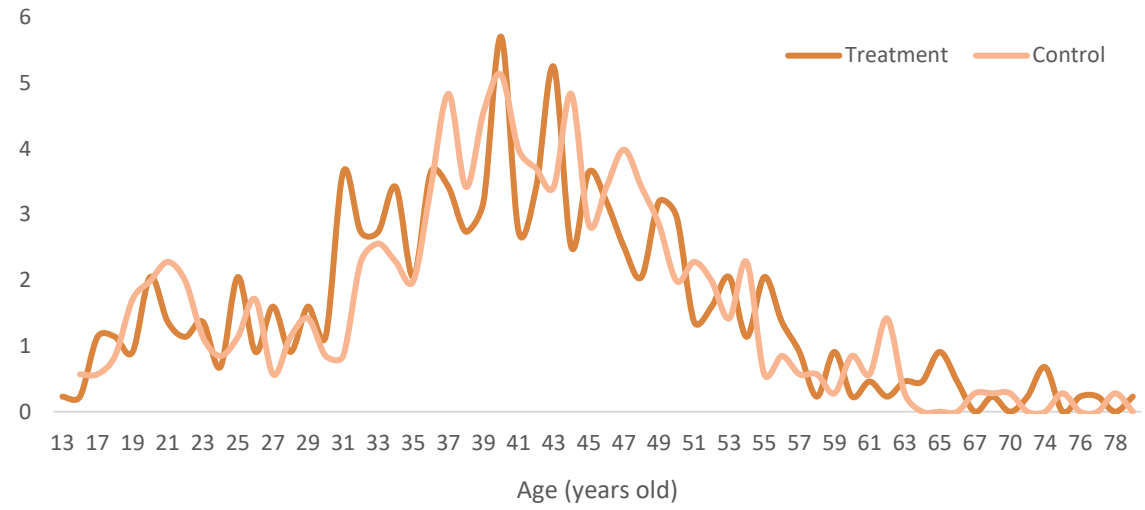
3.6.4 Smoking Habit

Around 18% of the population in the treatment area and 23% of the population in the control area have a smoking habit. More than one-third of the adult population[31] are smokers. However, the proportion of children (those under 15 and 18 years old) who

[31]Adult population refers to people aged 31 years and over.

smoke is very small, namely less than 1%. The proportion of smokers is larger among the 31–50 age group (productive age) (Figure 54).

Figure 54. Percentage of Smokers by Age



Source: SMERU's survey, 2022

Although the percentage of children who smoke is low, once they become adults and enter the working age, they will start to pick up this habit and it will be hard for them to stop it. This hypothesis is supported by the data showing that the proportion of people in the workforce who smoke is higher than that of people who are not in the workforce (Figure 55) and the difference is statistically significant in both study areas[32].

The high percentage of smokers in the productive age is linked to work-related issues. In both the treatment and control areas, the qualitative findings show that adult population smoke to lessen the stress caused by work pressure. Increased workload has an implication on increased daily consumption of cigarettes. Another reason is also related to peer influence at work. Scientifically, nicotine in cigarettes creates an immediate sense of relaxation; although the feeling is temporary, people smoke to lessen their stress and anxiety (Mental Health Foundation, n.d).

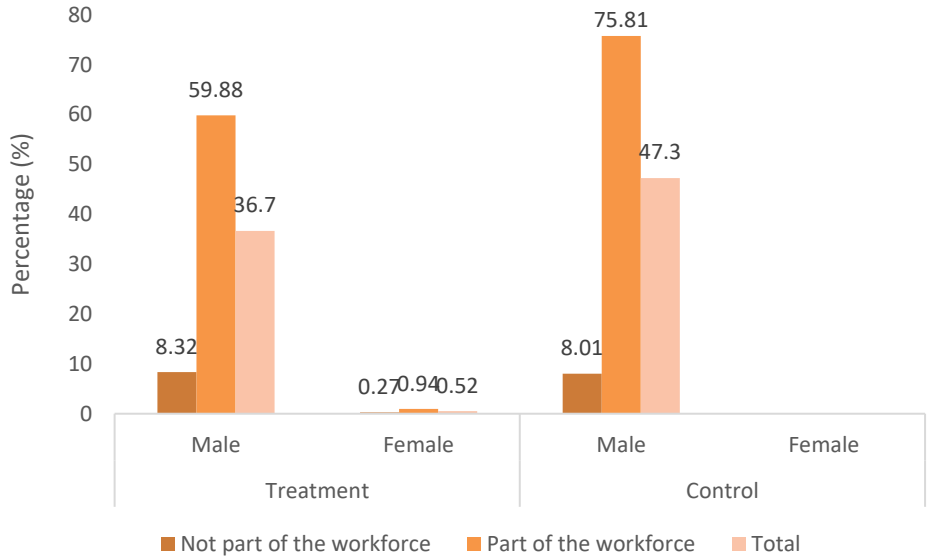
> The reason for smoking is for when there is heavy workload. Every day, [I smoke] up to two packs of cigarettes. (Cooperative treasurer, male, Kecamatan H, Sumbawa, 25 November 2022)

> My husband has been smoking maybe because of his environment [peer influence] when he was young. Other reasons are to ward off tiredness and stress. Smoking has even become like food; if he doesn't smoke, it will feel strange to him. (Elementary school teacher, female, Kecamatan A, KSB, 21 November 2022)

[32]Significant at 1% based on the t-statistic test

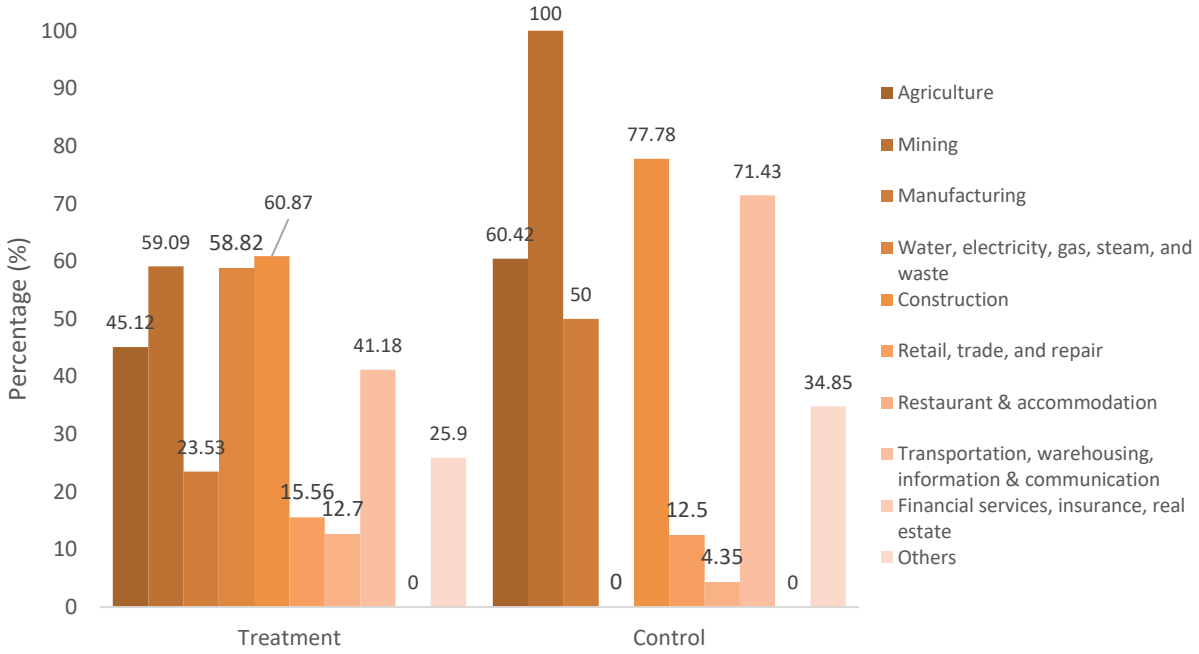
My husband works at the mine, so there is a high tendency to smoke because of the environment. (Agent of the Mutual Cooperation Empowerment Regional Program and online seller, female, Kecamatan C, KSB, 22 November 2022)

Figure 55. Percentage of Smoking Population by Workforce Participation



Source: SMERU's survey, 2022

Figure 56. Percentage of Smoking Population by Employment Sector



Source: SMERU's survey, 2022

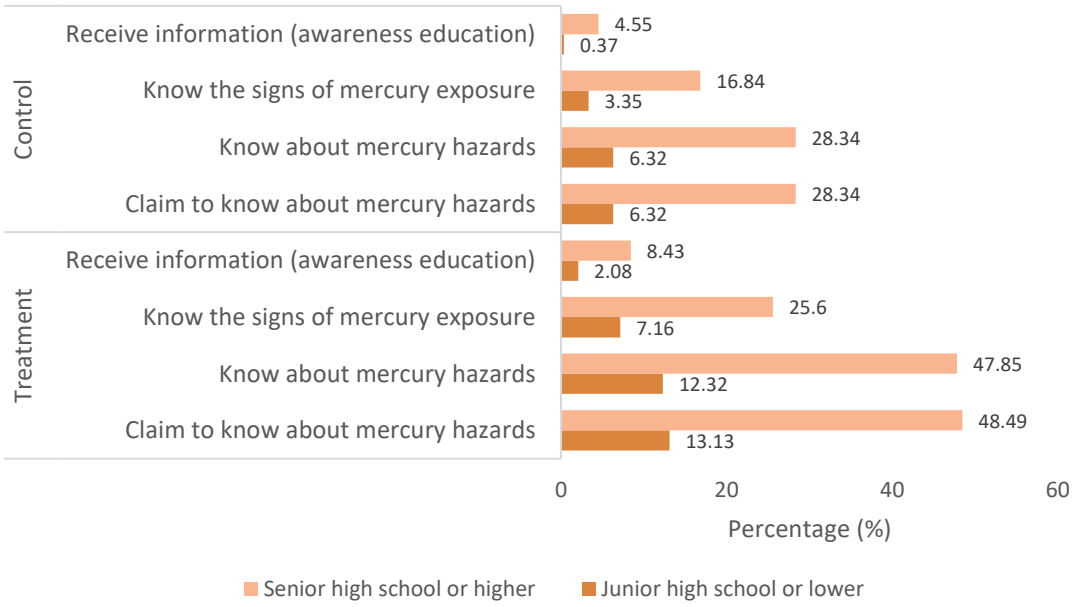
Based on the employment sector, male-dominated sectors, such as mining; construction; transportation, warehousing, and information and communication; and farming, have a higher percentage of smokers (Figure 56). In these sectors, peer pressure and the pressure to look more masculine can be high. In some cases, smoking habit serves as an expression

of masculinity and a proof of solidarity so that, for some people, it is not easy to refrain from it.

3.6.5 Mercury Hazards

In the quantitative survey, we also collected information about people's knowledge of the dangers of mercury[33]. The data shows that not many people are aware of mercury hazards or have knowledge about them. Moreover, only a very small number of people have ever received information or dissemination about this issue (Figure 57). Therefore, to raise awareness of mercury hazards, there needs to be a massive and periodic dissemination program targeting the entire population, especially those with high risk of mercury exposure.

Figure 57. Knowledge about Mercury Hazards of by Educational Attainment



Source: SMERU's survey, 2022

One of the factors influencing people's knowledge and awareness of mercury hazards is education. The proportion of highly educated population who are aware of mercury hazards[34] is higher than that of less-educated population and the difference is statistically significant. Gender also correlates with the knowledge of mercury hazards. The proportion of women knowing about mercury hazards is higher. Nevertheless, the concept of mercury hazards that these women understand are the hazards from cosmetics, not from the illegal mining. Some qualitative informants also reported that they received information about mercury from people-run gold mines. However, they do not have further information about its impact on health.

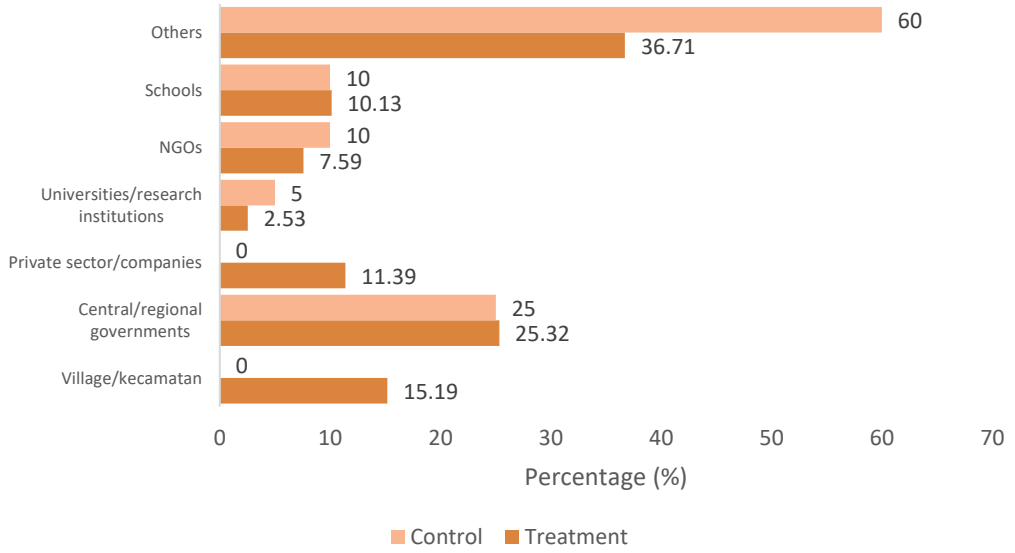
[33]asked to respondents above 10 years old

[34]concluded from various indicators of awareness of mercury hazards: (i) claiming to know mercury hazards, (ii) knowing mercury hazards correctly, and (iii) knowing the characteristics of people exposed to mercury

> I know that mercury is dangerous for the body, skin, and environment. I heard the word mercury in Taliwang because the water there is polluted with mercury. I also heard that mercury is used in the cream [for facial treatment], but it can damage your skin, damage your face. (Staff at the village office, female, Kecamatan C, KSB, 23 November 2022)
>
> Mercury is a poison usually found in some cosmetic products and in the gold panning area [at people-run gold mines]. In Kecamatan C, there used to be a panning machine, but I forget what year it was. As for the effect of mercury, I have no idea. (Trader, male, Kecamatan C, KSB, 23 November 2022)

Based on the survey conducted to the 99 people (79 in the treatment area and 20 in the control area) who received information about mercury hazards, their main sources of knowledge about mercury hazards were the internet, friend/family, and other institutions with no special tasks to disseminate information on mercury hazards (Figure 58).

Figure 58. Sources of Information about Mercury Hazards



Source: SMERU's survey, 2022

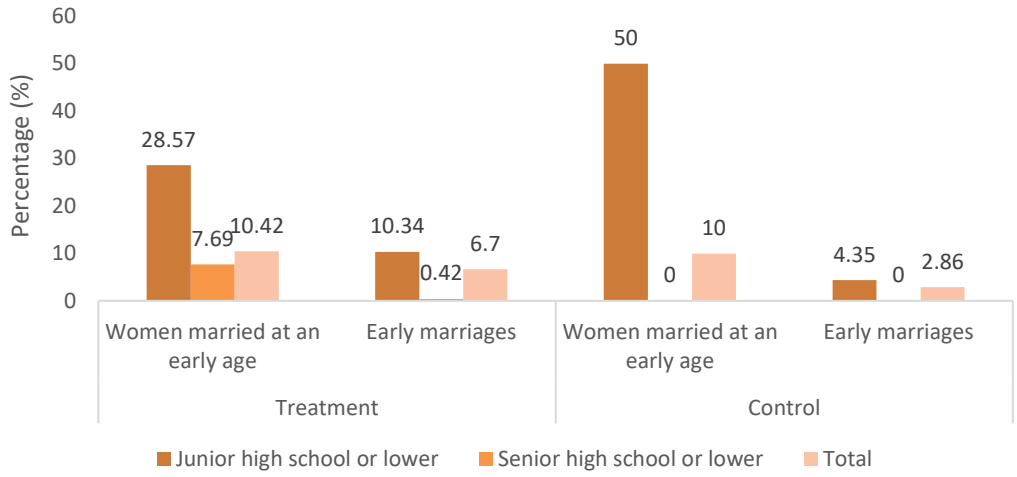
3.7 Social and Environmental Vulnerability

3.7.1 Child Marriage

Child marriage is one of the causes of socioeconomic vulnerability, especially for women.[35] Women who were married at an early age tend to find it difficult to pursue higher education and ultimately earn lower returns from their employment.

[35]Child marriage discussed in this report uses two indicators: women married at an early age and early marriage. Child marriage and early marriage in this report are used interchangeably and refer to the same thing.

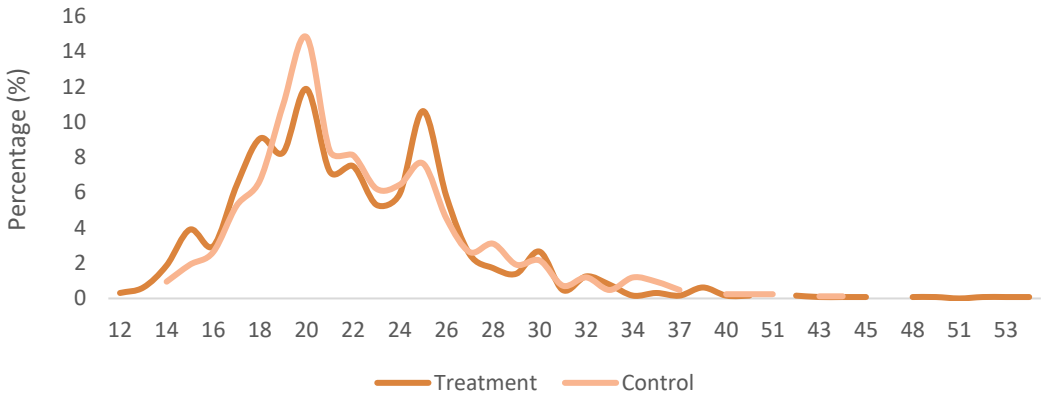
Figure 59. Percentage of Women Married at an Early Age and Percentage of Early Marriages



Source: SMERU's survey, 2022

The survey results show that there are women who were married at a very young age in the study areas.[36] The proportion of women aged 20–24 years who were married before the age of 18 is 10.4% in the treatment area and 10% in the control area (Figure 60). Most early marriages are found among women with relatively low educational levels. Looking at other indicator of early marriage[37], the percentage of women who were married at a very young age is 6.7% in the treatment area and 2.9% in the control area. Like the previous indicator, the percentage of early marriage is higher among less-educated women. Very rarely did we find highly educated women married at an early age. Therefore, it is reasonable to say that the key to eliminating early marriages is by improving women's access to higher education.

Figure 60. Women's Age When They Were First Married



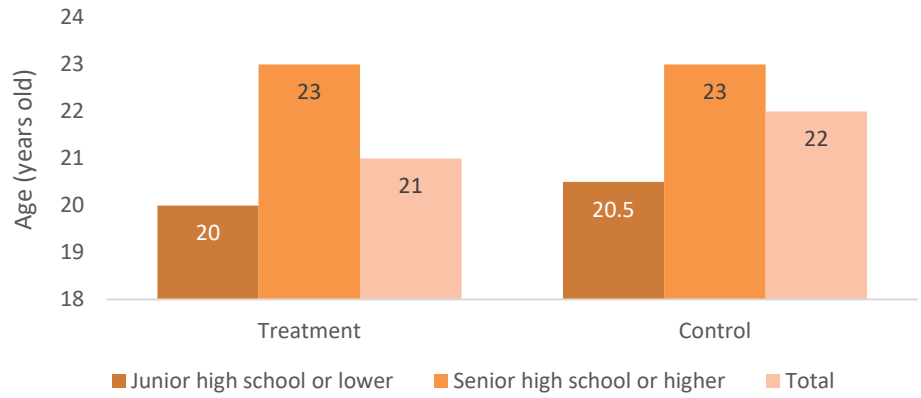
Source: SMERU's survey, 2022

[36]Women married at an early age: women aged 20–24 years who were first married or in union before age 18 (as per indicator 5.3.1* of the SDGs)

[37]Early marriage: proportion of women aged 10 years and over who were first married before age 16 (BPS indicator)

This study finds that the youngest marriage occurred at the age of 12 years in the treatment area and 14 years in the control area (Figure 60). Most women were married at the age of 18–26 years. The median age of the first marriage for women[38] is over 18 years, namely 21 years in the treatment area and 22 years in the control area (Figure 61). This shows a progress in the study areas although in that age bracket women can still pursue higher education (the 18–24 age bracket is still within the school-age group). The lower one's educational level is, the more likely they are to be married at an early age.

Figure 61. Median Age of Marriage among Women



Source: SMERU's survey, 2022

These quantitative findings align with and are corroborated by the data from informants (qualitative data) who confirmed early marriage practices in their surroundings. Early marriages—which occur because of unplanned pregnancy—are one of the causes of the community's vulnerability in the treatment area. The qualitative finding shows that most young people experiencing an unplanned pregnancy were still in junior or senior high school. Among all the factors reported by the informants, promiscuity/premarital sexual relationships and misuse of social media are considered the main factors driving an unplanned pregnancy.

> There are many [early marriages]. Sometimes, they happen because of 'an accident' [unplanned pregnancy]. Those [children] are still in junior high school. It's too bad that they have to drop out of school. There is still a high prevalence [of early marriages]. They happen because of promiscuity [and] lack of parental control. Young people can easily communicate with each other using their gadget; they can freely access negative contents. (Staff member at a village office, female, Kecamatan C, KSB, 23 November 2022)

Early marriages—many of which occur because of an unplanned pregnancy according to the qualitative data—pose risks to women's physical and mental health as well as their children's growth and development in the future. From the health perspective, women giving birth at an early age have a higher risk of dying during childbirth or experiencing a miscarriage, which can negatively impact their reproductive health. From the socioeconomic perspective, women married at an early age have a smaller chance of finishing tertiary education because they will spend most of their time taking care of their

[38]Median age of women at first marriage: median age of first marriage for women aged 25–49 years who have been married or in union (as per indicator 5.3.1.(a) of the SDGs)

children and household. Consequently, women's economic contribution is lower than men's, as discussed in Subchapter 3.2. In the long run, early marriages will have adverse effects on children's health and educational attainment. Ultimately, the family units of the people married at an early age will be socially and economically more vulnerable. Health risks experienced by women becoming pregnant at a very young age are confirmed by the qualitative finding. In a very vulnerable pregnancy, there are risks during childbirth which harm mothers and their neonate. All risks, be they small or major, that lead to maternal and neonatal deaths need to be handled seriously. At the same time, preventive actions need to be strengthened to address the root cause of early marriages.

> We have handled some cases resulting from early marriages, such as a high-risk parturition and pregnancy because of young age, miscarriage, and underweight infants. (Staff member at a *puskesmas*, male, Kecamatan C, KSB, 22 November 2022)

Child marriage prevention has been a concern especially among schools, health workers, and local public figures. At the school level, teaching staff have contributed to giving information about early marriage and encourage the students to avoid doing anything that will only harm themselves. Local public figures have also made similar efforts by informing parents about the risks of early marriage and its future socioeconomic impact. Additionally, local *puskesmas* have made a serious effort by giving counselling about reproductive health as well as disseminating information about the dangers of premarital sexual relationships and STD through the Youth Care Health Service (PKPR[39]) at schools and youth *posyandu*.

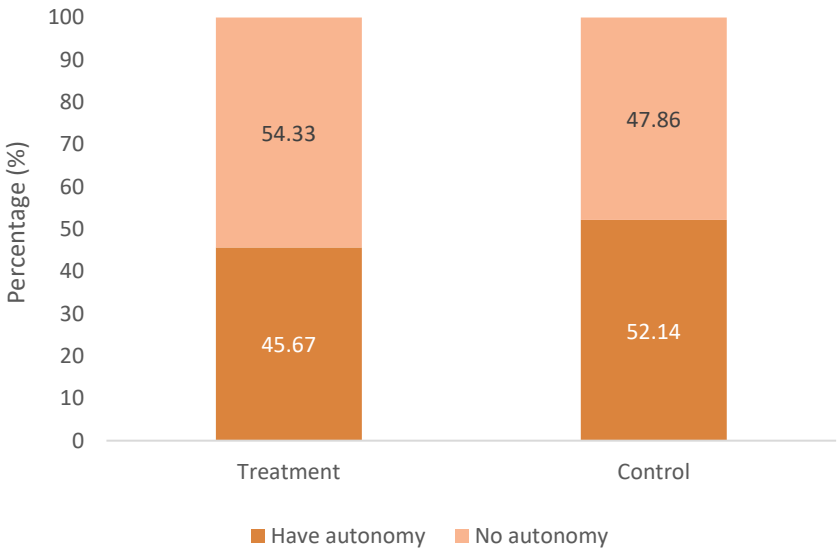
3.7.2 Women's Voices in Decision-Making

The issue of gender equity carries wide-ranging aspects, from both economic and social perspectives. In this report, the aspect of gender equity is under the umbrella of social vulnerability, as women who experience discrimination or lack autonomy belong to the socially vulnerable group. In this discussion, the issue of gender equity only includes the following indicators: the proportion of women who can make autonomous decisions on sexual relations, contraceptive use, and reproductive healthcare.[40]

[39]Pelayanan Kesehatan Peduli Remaja

[40]This indicator aligns with indicator 5.6.1* of the SDGs: proportion of women in their reproductive age (15–49 years old) who make autonomous decisions on sexual relation, contraceptive use, and reproductive healthcare.

Figure 62. Percentage of Women with the Autonomy in Decision-Making and Reproductive Affairs



Source: SMERU's survey, 2022

The results of the household survey show that women still have little autonomy in determining private matters concerning themselves (Figure 62). In the treatment area, more than half of women have no autonomy or latitude in decision-making regarding their own reproductive health. Meanwhile, in the control area, the percentage of women with little autonomy is higher. Using this indicator, women are considered having autonomy if these three indicators are present: (i) can say no to their husband/partner when they do not want to have sexual intercourse, (ii) decide on the use of contraceptives for themselves by themselves or jointly with their husband/partner, and (iii) decide on their own healthcare by themselves or jointly with their husband/relatives. Of the three indicators, most women have been able to make decisions about the use of contraceptives and reproductive healthcare (such as childbirth and medication). However, quite a lot of women still cannot say no to their husband's/partner's request for sexual intercourse when they do not want to.

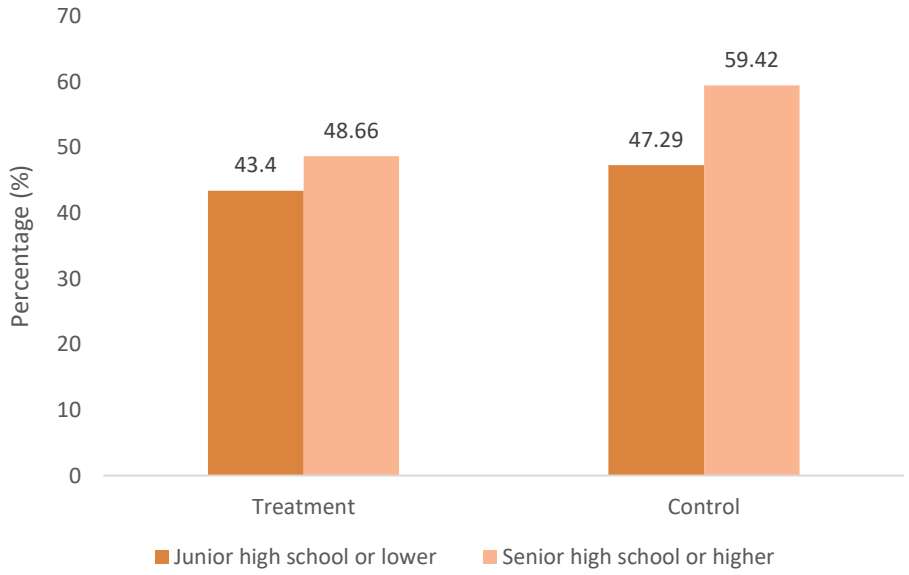
Decisions about the use of contraceptives are usually made jointly after two-way communication between the husband and wife. This indicates that in making an important decision, the positions of the husband and wife in the family have become more equal. The qualitative finding shows that the husband and wife decide on the use of contraceptives through an open dialogue, where the wife tends to control the topic of the discussion, informing about the advantages and disadvantages of using contraceptives. In some cases, women make final decisions about the use of contraceptives. For these women, the use of contraceptives is not only to control pregnancy but also to strengthen their rights in deciding the time of and readiness for a pregnancy.

> Using a contraceptive to manage the age gap of our children. My wife makes the decision. (Trader, male, Kecamatan C, KSB, 23 November 2022)

Even though many women could voice their opinions in decision-making regarding contraceptive use and healthcare, the majority still cannot say no to their husband when

they do not want to have sexual intercourse. This may be because of a strong patriarchal culture especially regarding sexual intercourse between the husband and wife. In such culture, it is not common for the wife to turn down sexual advance from her husband. However, there is a statistically significant difference between highly educated women and less-educated ones regarding autonomy on this matter.[41] The higher women's educational attainment is, the more likely they are to say no to their husband when they do not want to have sexual intercourse and the more likely they are to make decisions about their reproductive healthcare (Figure 63).

Figure 63. Percentage of Women with Autonomy by Educational Attainment



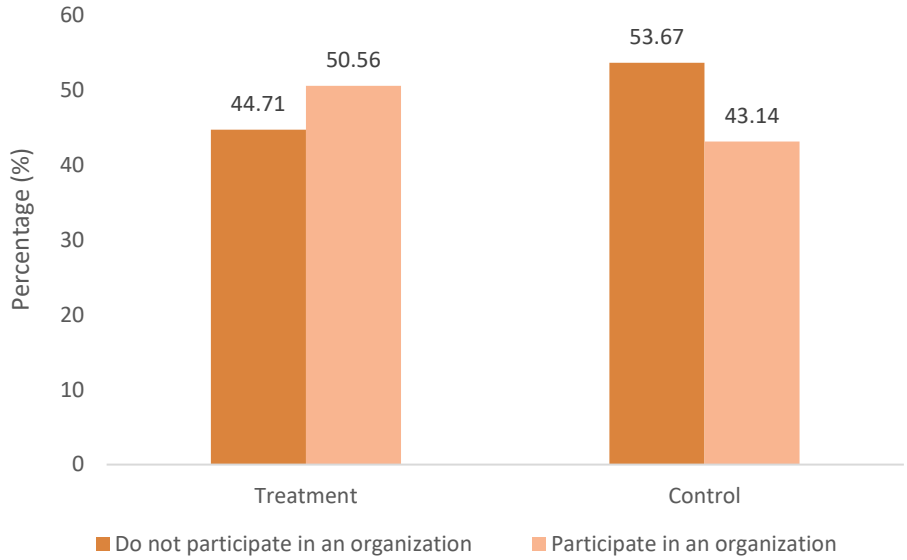
Source: SMERU's survey, 2022

The issue of women's autonomy comprises two things: the ability to voice opinions and the ability to make decisions. In practice, the issue of autonomy among women, especially the middle-aged ones, cannot be addressed simply by improving their access to education. Women's autonomy is closely related to their empowerment and the initial step to empower women is by giving them space to voice their opinions. For example, they can participate in an organization which will help them boost their confidence. Once they can voice their opinions, the next step is to provide them with the space and opportunities to make decisions. A study by Migunani (2017) shows that women's collective actions can act as the main gateway to achieving women's empowerment. An example of these collective actions is forming an association, be it formal or informal, with local social activities acting as a springboard. In such an association, women have an opportunity to express their opinions, develop their organizational skills, and improve their interpersonal relations. Such a collective action can positively affect the quality of women's human resources as well as their social and financial assets, which will ultimately allow them to actively

[41]The t-statistic test was conducted in the treatment and control areas to assess the difference in women's autonomy based on their educational level and the significant result (significant at 5%) was found in the control area. In the treatment area, there is no statistically significant difference in the educational levels regarding women's autonomy.

participate in decision-making. In the study areas, the percentage of women with autonomy is found higher among women participating in an organization (Figure 64).

Figure 64. Women's Autonomy by Participation in an Organization



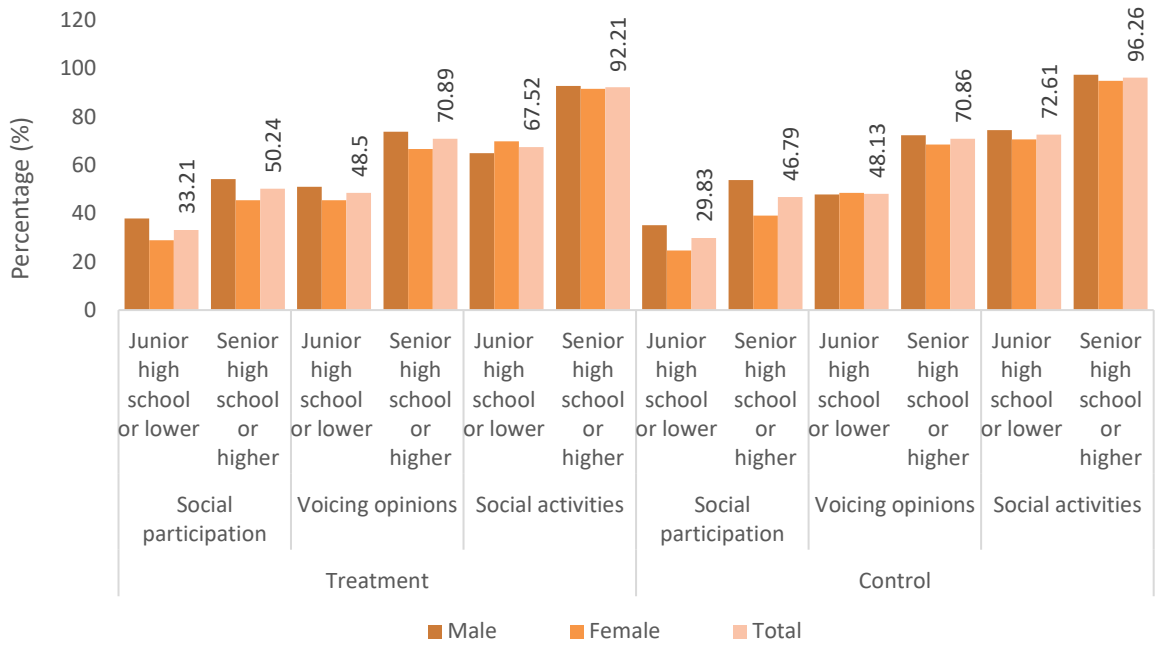
Source: SMERU's survey, 2022

3.7.3 Social Participation

Social participation, including participation in community's social activities and organizations, is one of the indicators that an individual can perform their social function. Such an active social participation can reflect the collective effort of individuals as social beings to address issues that are present in their surroundings so that they can escape social and economic vulnerability.

This study finds that the level of social participation in the study areas is relatively low. However, the level of participation in actively voicing opinions is quite high. In terms of social participation in community meetings, men's participation is found higher than women's both in the treatment and control areas. Similarly, the percentage of men who actively voice their opinions in community meetings is higher than that of women. For social participation concerning religious activities, *gotong royong* (communal work), *arisan* (social gathering in which members operate a rotating savings scheme), or death rituals/ceremonies in the neighborhood, women's participation is found higher than men's, especially in the treatment area (Figure 65).

Figure 65. Social Participation and Community's Activities by Educational Attainment and Gender



Source: SMERU's survey, 2022

Besides gender, social participation levels also vary by educational attainment and age. The higher one's educational level is, the more likely they are to participate in social activities, either actively or passively. This hypothesis is statistically proven, i.e., people with higher levels of educational attainment and are in the older-age groups have higher social participation levels, are more capable of voicing opinions, and have higher levels of participation in social activities. This is found in both the treatment and control areas (Table 14). People with higher levels of educational attainment seem to be more aware of social issues and more confident to participate in social activities. This allows them to actively participate in community meetings and other social activities. Regarding age, young people seem less interested in participating in community meetings or other social activities and one of the possible causes is their work. On the other hand, older community members may have more time that allows them to participate in social activities more actively than their younger counterparts.

Table 14. Results of the Statistical Significance Test on Social Participation (T-statistic)

	Indicator	Group	Number of People Observed	Difference	Standard Error	t	Pr (|T| > |t|)
Treatment	Social participation	Sex	1,839	10.66	2.27	4.70	0.000*
		Education	1,734	-17.03	2.41	-7.07	0.000*
		Age	1,839	-39.00	2.12	-18.41	0.000*
	Voicing opinions	Sex	728	7.20	3.69	1.95	0.052***
		Education	683	-22.38	3.68	-6.08	0.000*
		Age	728	-9.76	4.68	-2.09	0.037**
	Social activities	Sex	2,346	-3.04	1.91	-1.59	0.111
		Education	2,033	-24.69	2.00	-12.34	0.000*
		Age	2,346	-46.66	1.66	-28.09	0.000*
Control	Social participation	Sex	1,224	12.56	2.71	4.64	0.000*
		Education	1,182	-16.96	2.95	-5.75	0.000*
		Age	1,224	-38.86	2.55	-15.23	0.000*
	Voicing opinions	Sex	431	2.01	4.85	0.41	0.679
		Education	416	-22.72	4.79	-4.74	0.000*
		Age	431	-11.24	6.86	-1.64	0.102
	Social activities	Sex	1,482	4.66	2.27	2.05	0.041**
		Education	1,338	-23.64	2.39	-9.90	0.000*
		Age	1,482	-46.07	1.94	-23.77	0.000*

Source: SMERU's survey, 2022

Note:

Difference is the mean difference of each variable: (i) sex (mean difference between men and women), (ii) education (mean difference between individuals with junior high school education or lower and individuals with senior high school education or higher, and (iii) age (mean difference between younger individuals [30 years old or younger] and older individuals [over 30 years old]).

*significant at 1%

**significant at 5%

***significant at 10%

If there is no asterisk, the difference between groups is not significant.

The qualitative finding also shows that there are some ethnic-based groups whose activities are used as the social capital by their members to be able to survive and adapt in a new environment. The existence of these groups is closely linked to the heterogeneity of the migrants who look for work in the study areas. These ethnic-based groups, such as Ikatan Warga Sumba (Sumbanese Community Association) and Kerukunan Keluarga Sulawesi Selatan (South Sulawesi Family Association), are quite well known among the qualitative informants. The existence of these groups is part of the social capital, as inside

these groups are interconnected networks of resources, both actual and potential resources, which group members can leverage. Most of these groups' activities are social ones, such as collecting donations to help group members who have fallen ill or whose family member passes away. Livelihood strategies, such as information on job vacancies, are often discussed and shared among group members.

> There is an effort to collect donations to help those who are sick or if someone passes away. In addition, [we] talk about job vacancies. In a meeting, adults and young people will usually gather. They will talk about social issues, such as collecting donations for Sumbanese who are sick. Each household may donate Rp50,000 and if someone passes away, the memorial donation is Rp100,000 for each household. (Homemaker, female, Kecamatan A, KSB, 21 November 2022)

The fact that the number of women participating in community meetings is smaller than that of men has given rise to an assumption of a strong patriarchal culture in both the treatment and control areas. People in a strong patriarchal culture leave decisions related to economy or politics to men, while women manage social activities with no direct impact on the economy or politics. Community meetings are usually done to make decisions regarding economic and political matters, such as the permits to open businesses or conduct political campaigns in the village. Social activities, on the other hand, are usually carried out in the form of religious activities, such as Quran recitation/study groups, congregational prayers, and attending the funeral or weddings of community members, as well as activities which reflect social harmony, such as communal work.

The qualitative finding shows that women are more likely to participate in empowerment activities, such as becoming community social workers, *posyandu* cadres, and Family Welfare and Empowerment (PKK) cadres. Women are also found to be more active in social gatherings, such as Quran recitation/study groups, *gawe desa* (a local wisdom referring to the atmosphere and spirit of collaboration between villagers), *besiru* (mutual assistance in community activities), and death ceremonies. Women's participation in social activities is driven mainly by their aspiration to positively contribute to their surroundings (Zid, Casmana, dan Hijrawadi 2020). In this study, the positive contributions that women have made include the aspiration to help vulnerable groups, such as older people and people with disability, because these groups are considered receiving not enough attention from the community. In addition, this study finds that social gatherings serve as a forum where women can broaden their horizon about household issues through religious teachings. The qualitative finding shows that most women who are active in social activities are working, both in the formal and informal sectors. For working women, social activities are considered complementary.

> I participated in a community's social worker program where I volunteered to help older people and people with disability. The program was organized by the social affairs agency. We were recruited by the social affairs agency. I was the only one from this village. There was one person from every village. I would receive transport money when I went out to help. (Staff member at a village office, female, Kecamatan C, KSB, 23 November 2022)

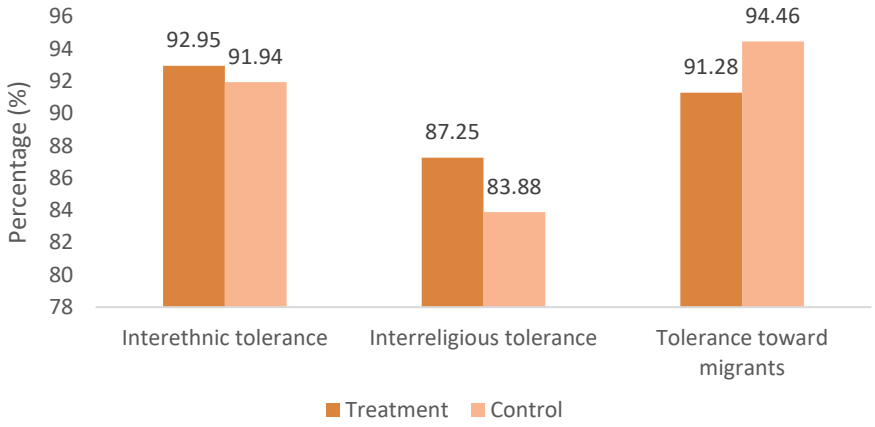
> [I join] the Quran recital/study group every Friday afternoon [the Quran recitation/study group in the evening is for men). In the Quran study group, we listen to sermons from the *ustaz* [religious teacher] with topics about children-related issues, husband-related issues,

and household affairs. (Meatball seller and owner of a room-renting business, female, Kecamatan C, KSB, 23 November 2022)

3.7.4 Tolerance

Another source of social vulnerability is conflicts within the communities. They can happen because of ethnic/racial/religious issues or economic inequality. In this report, three issues of tolerance are discussed, as they are seen as the reflections of social vulnerability. These issues are interethnic tolerance, interreligious tolerance, and migrant tolerance. The survey about tolerance was conducted to households and comprised questions whether the respondents agree or disagree if (i) there are activities done by people of other ethnic groups/religions in the neighborhood; (ii) a household member makes friends with people from other ethnic groups/religions; and (iii) people from other *kabupaten* (migrants) live in the respondent's neighborhood (Figure 66).

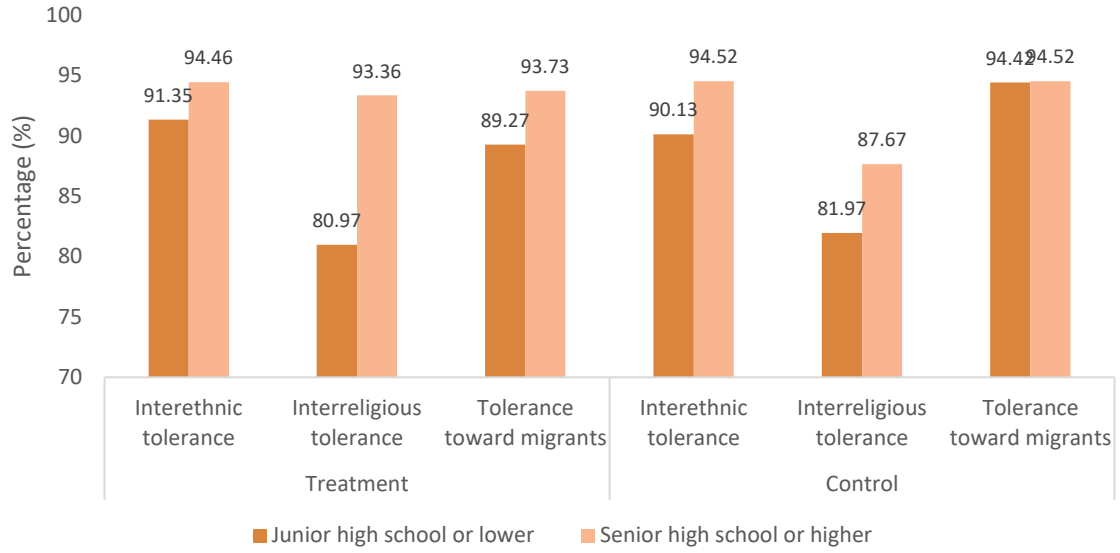
Figure 66. Percentage of Households with Tolerance by Tolerance Type



Source: SMERU's survey, 2022

The quantitative finding shows that the tolerance levels in the study areas for all the three tolerance types are very high (Figure 66). This shows harmonious social relationships in the study areas and the small likelihood of social conflicts driven by racial/religious/ethnic differences or migrant status. Despite being lower than the percentage of interethnic tolerance and tolerance toward migrants, the percentage of interreligious tolerance is still high. Almost nine of ten people in the treatment and control areas have no problem with activities conducted by people from other religions or having family members who make friends with people from other religions.

Figure 67. Tolerance Levels by Household Heads' Educational Attainment



Source: SMERU's survey, 2022

Education plays an important role in shaping a tolerant community. Households where the head has attained a lower level of education seem to be less tolerant toward other ethnic groups, other religions, and migrants and the difference is statistically significant (Figure 67).[42] To explain this, we can hypothesize that people with lower levels of educational attainment are rarely exposed and socialize with people from other religions. Elementary school and junior high school buildings are normally located near the students' residential area, where the community is religiously and culturally quite homogenous. On the contrary, education at higher levels is commonly only available outside students' residential areas, such as outside the *kabupaten* or even outside the province. People pursuing higher levels of education will be more likely to be exposed to other cultures and religions. Such an exposure can lead to a welcoming attitude and tolerance toward people from other religions.

This high level of tolerance is supported by statements from some of the qualitative informants. They reported that the condition in the study areas was relatively safe. There have never been open conflicts between groups or feelings of contention between ethnic groups. In this heterogenous society, such a high level of tolerance shows that people in the study areas can accept people with different beliefs, cultures, and places of origin.

> Village A3 is considered the safest region. In Village A3, 99% of the time, there have been no ethnic-related conflicts or conflicts between different groups. (Entrepreneur, female, Kecamatan A, KSB, 21 November 2022)

[42]T-statistic test was done for the treatment and control areas. The results show that there is a significant difference between household heads' educational attainment for interreligious tolerance (significant at 1%) and for tolerance toward migrants (significant at 10%). However, the difference for interethnic tolerance is not significant. The result of the t-statistic test in the control area shows insignificant differences for the three tolerance indicators.

> In Kecamatan C, there have never been any interreligious, interethnic, or other conflicts. What we have is the criticism to the government and that is normal. Conflicts usually occur at the individual level. (Agent of Mutual Cooperation Empowerment Regional Program and online seller, female, Kecamatan C, KSB, 22 November 2022)

An interesting phenomenon is observed about tolerance toward people from outside the *kabupaten*, especially in the treatment area. There is a difference in the level of tolerance toward migrants between highly educated households and less-educated ones[43]. This happens maybe because less-educated people harbor a certain feeling of envy and fear that migrants will make them lose an opportunity of securing a job especially in the mining sector. The treatment area has indeed become a destination for migrants looking for work and long-term residence because of the large scale of the mining sector. It is not surprising that many people from other regions come and look for employment there. However, certainly not everyone meets the qualifications to work in the mining sector or other available sectors. When they finally have settled and become the residents in the area but fail to find work, they are anxious about the new migrants who might have higher qualifications and take the job opportunities in the region. This, however, does not happen in the control area, which explains why the level of tolerance toward migrants is higher than that in the treatment area. The many migrants who came and have settled for a long period in the treatment area (other than the Samawa ethnic group) also explain the heterogenous community and high tolerance.

Social Tensions in the Communities

Social vulnerability issues reported by some informants are related to the tensions within the communities. They might affect social relations between individuals, the community, and the mining company. Nevertheless, these tensions did not become so amplified that they turned into an open violent conflict.

a) Tensions with the Company

Some informants are quite aware of the tensions between the communities and the mining company. The most reported issue is related to the construction of a smelter. There was a misunderstanding about the boundaries of the land used for the construction and people's aspiration to be involved in the smelter construction. An informant said that people's resentment and protests were usually delivered through the village administration.

> Once, people even blocked the roads because of the smelter case. They didn't accept the fact that they were left out of the smelter project. They wanted to be recruited. They also demanded that access to their lands be opened. There was a mistake in road markings. There was a misunderstanding there. (Staff member at the village office, female, Kecamatan C, KSB, 23 November 2022)

[43]In this report, (i) a household is said to have a high educational attainment if the household head has attained senior high school education or higher and (ii) a household is said to have a low educational attainment if the household head has only attended junior high school education or lower.

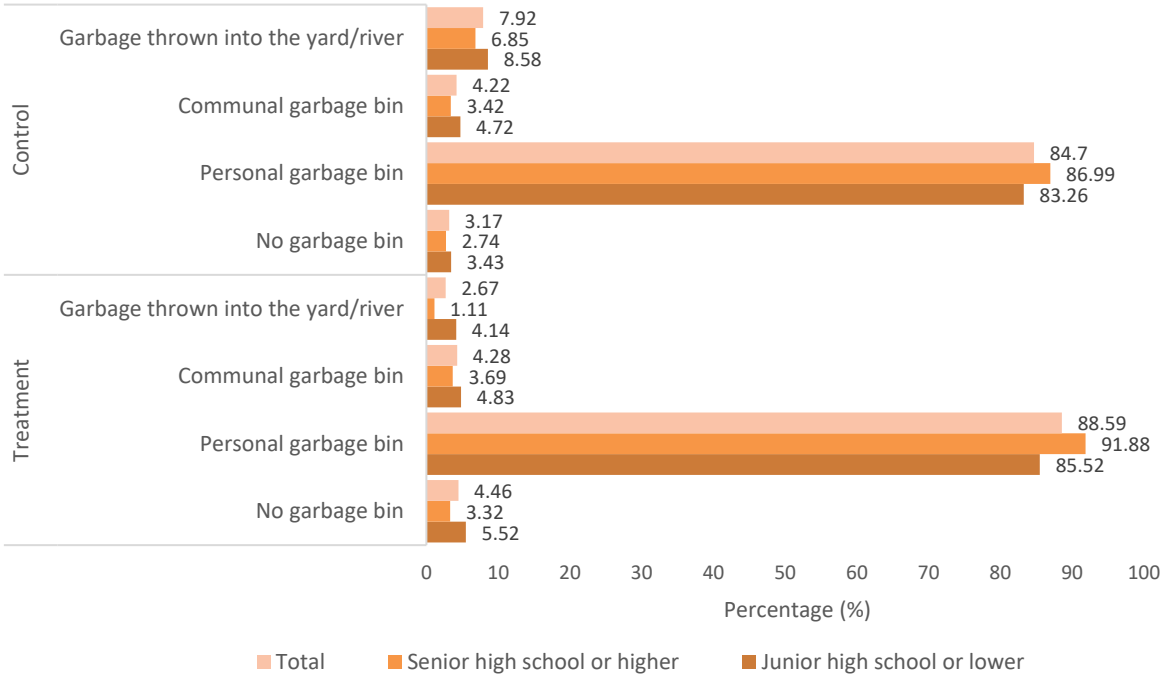
b) Tensions Driven by Political Factors (Village Head Election)

Informants also reported tensions between supporters of village head candidates in Kecamatan A and Kecamatan C. Such tensions can be categorized as social vulnerability, as they can negatively affect the relationships between family members or between people in the neighborhood. The informants said that the disrupted relationships could persist months after the election was over. One example of the disrupted relationship was that family members or community members, who would otherwise live harmoniously, did not greet each other. Despite not causing physical violence, the tensions within the communities should be taken seriously because, if left unaddressed, they might turn into a large-scale open conflict.

3.7.5 Environmental Preservation

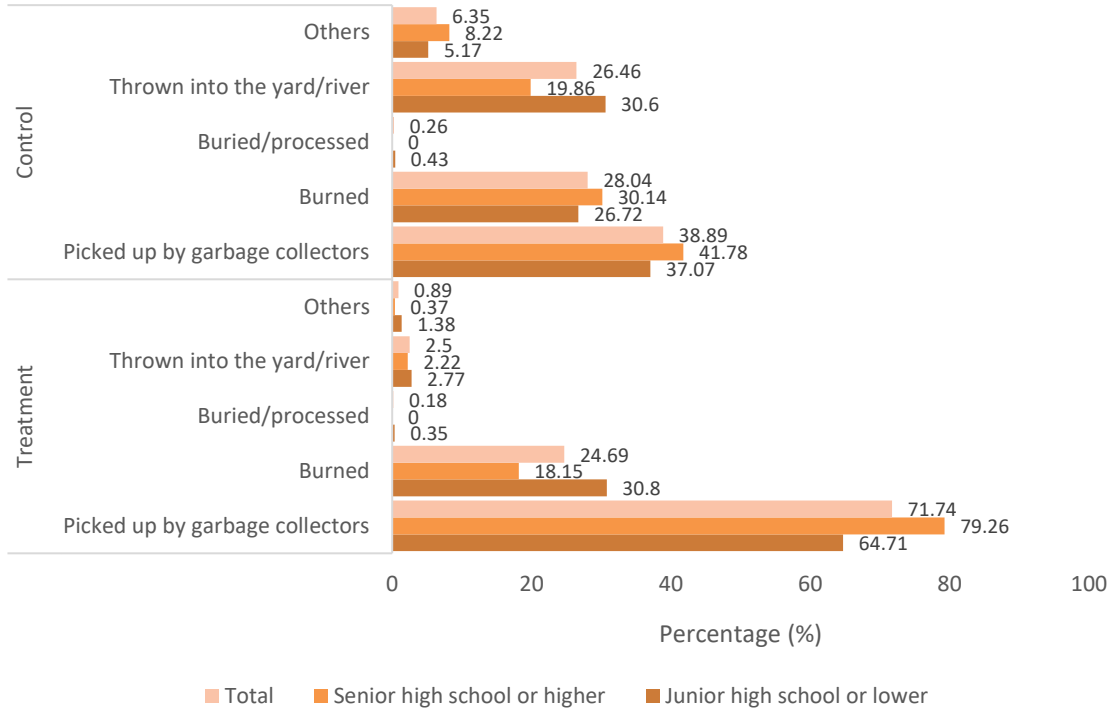
Regarding environmental preservation, 92% of the households in the treatment area and 86% of the households in the control area felt that their environment has already been free of garbage (clean). Most have their own garbage bin and a small number of the households do not have their own garbage bin or still throw their garbage in the yard or into the river (Figure 68). In general, the practice of preserving the environment at the household level is relatively good, especially in the treatment area.

Figure 68. Household Garbage Bin Ownership



Source: SMERU's survey, 2022

Figure 69. Household Waste Management by Household Heads' Educational Attainment



Source: SMERU's survey, 2022

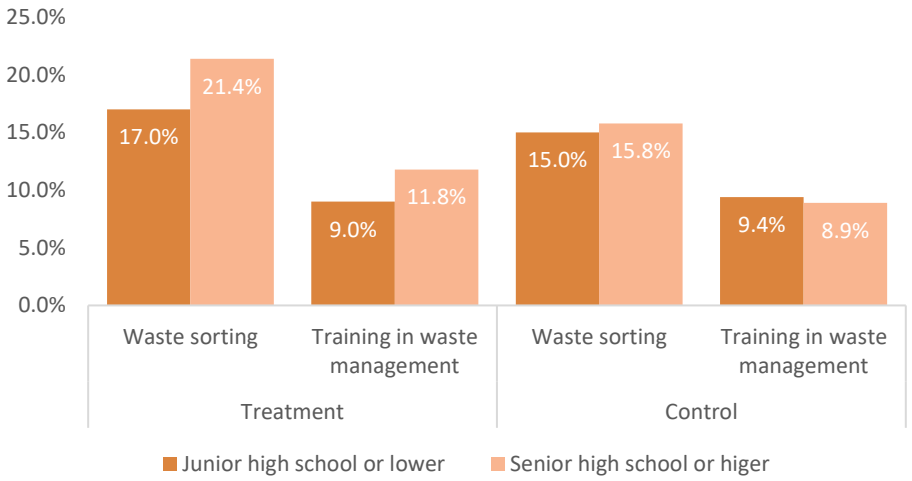
In terms waste management, 71% of the households in the treatment area have garbage collectors operating in their neighborhood, but only 40% of the households in the control area have a garbage collection service in their neighborhood (Figure 69). Quite many households in the control area throw their garbage in the yard or into the river and burn it. Such practice is dangerous not only for the environment but also for the households themselves. Good waste management practice is usually done by households where the head has attained a higher level of education. Education, once again, is a key to sustainable environmental preservation.

In addition to garbage bin ownership and garbage disposal mechanisms, waste management and recycling practices (reduce, reuse, and recycle/3R) are the proper ways to work toward sustainable environment. The 3R practices can start from a simple activity of sorting waste into organic waste and nonorganic one. In the study areas, only a small number of households have already done this and even a lesser number of households have ever received information or been exposed to awareness education/campaigns/training on sorting or recycling waste (Figure 70). By education, there were more highly educated households who sort their waste than their less-educated counterparts. Through the statistical test on the treatment area[44], there is a significant difference between households having received training in waste management and those that have not received one. This means that training activities can effectively raise people's awareness of the importance of working toward sustainable environment. That is why training about household waste and sewage management needs to be

[44]Significant at 5%. The t-statistic test in the control area did not show a significant result.

expanded and held more frequently. In the long run, there needs to be a massive effort to provide training in waste management for elementary school and early childhood education students.

Figure 70. Percentage of the Population Sorting Their Garbage and Having Received Training in Waste Management



Source: SMERU's survey, 2022

There is no community-based waste management in the village. In 2012, there was a group/community focusing on waste management to make compost. However, there are no more community-based waste management until today. Because there was no active administrator, this community-based waste management ended. The current waste management to make compost is done individually, depending on each household. (BPD member, female, Kecamatan A, KSB, 21 November 2022)

I heard about training in waste management, but I never participated in it because nobody asked me to join. About two years ago, there was information about that, but I don't know whether the training was available or not. For garbage disposal in the village, I don't think it's effective, so [we] burn our trash in the yard. The garbage truck that the village pays for comes only once a week. It has been a few weeks since they last came here, so the garbage has been mounting. (Agent of Mutual Cooperation Empowerment Regional Program agent and online seller, female, Kecamatan C, KSB, 22 November 2022)

IV. Closing

4.1 Recommendations

The socioeconomic analysis of the communities in study areas—based on the household survey, qualitative interviews, and secondary data—has presented some findings about their conditions regarding several livelihood aspects. Several indicators have achieved good results, but some issues still need to be addressed to improve the welfare of the communities around the mining area in KSB.

The recommendations in this report have been developed with the target of welfare improvements of the communities around the mining area, which involves social welfare and economic welfare objectives. Considering the results of the socioeconomic analysis and Amman's social responsibilities, we have developed several strategies on the aspects of health, education, employment, tourism, and MSEs to achieve the target and objectives (Figure 71). Each strategy is broken down into practical actions and details about the target stakeholders responsible for the implementation of such actions (Table 15).

Figure 71. Structure of the Recommendations

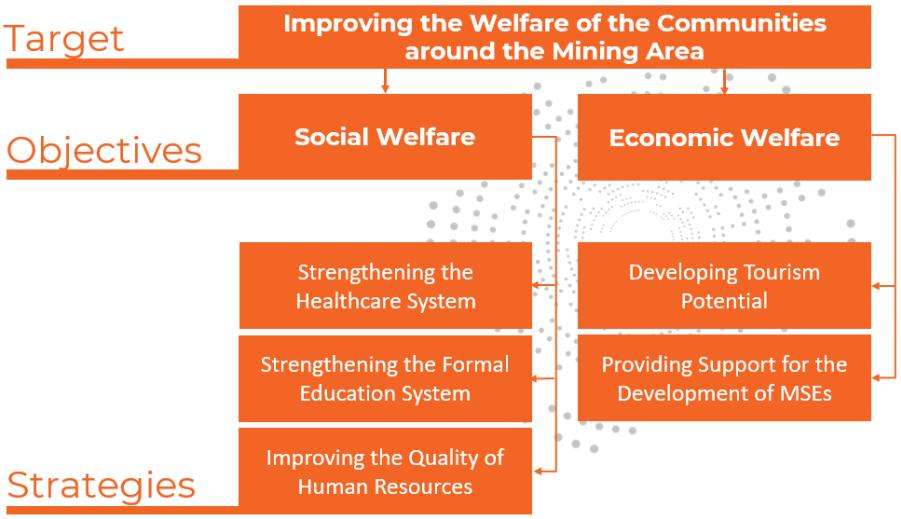


Table 15. Practical Steps and Target Stakeholders of the Recommendations

No.	Practical Steps	Target Stakeholders
A	**Strengthen the healthcare system**	
1	Intensify health promotion to address specific issues, such as reproductive health, MCH, and stunting, as well as the awareness of mercury hazards to improve people's trust in healthcare institutions	• Healthcare institutions (healthcare workers and facilities) • Mothers and children

No.	Practical Steps	Target Stakeholders
		• Teenage population • Population around the mining area
2	Improve the quality and diversity of healthcare services at first-level healthcare facilities	Healthcare institutions (healthcare workers and facilities)
B	**Strengthen the formal education system**	
1	Improve facilities that support learning activities based on the school's needs	Educational institutions (schools)
2	Design the mechanism to recruit productive teachers from practitioners to transfer their knowledge to vocational high school students	Vocational high schools
C	**Improve the quality of human resources**	
1	Improve the community's financial literacy and inclusion	Productive-age population
2	Support women's participation in unions/organizations as the medium to improve their capacity	Productive-age women
D	**Develop the tourism industry's potential**	
1	Improve the capacity of prospective and existing workers in the tourism industry by providing certified training in hospitality	▪ Prospective workers in the tourism industry ▪ Existing workers in the tourism industry
2	Strengthen the capacity of *pokdarwis* as an institution that manages village-level tourism	Residents of the tourism village
3	Reinforce the branding and promotion of tourist destinations and attractions that characterize KSB	▪ Prospective workers in the tourism industry ▪ Existing workers in the tourism industry
4	Improve the capacity of the association of business actors in the tourism sector	The association of business actors in the tourism sector
5	Encourage tourism business actors to obtain various certifications to support their business	Business actors in the tourism sector
E	**Provide support for the development of MSEs**	
1	Improve MSE actors' digital literacy and skills through training and facilitation	MSE actors
2	Facilitate channels that connect MSE actors to potential consumers	MSE actors

4.2 Input and Suggestions for Future Studies

4.2.1 Technical Input: Study Period

The next research should take into account the study period to avoid issues during the primary data collection process. The research team suggests that the study be conducted in the months other than November and December. November is the month in which KSB celebrate its anniversary and the communities' and other stakeholders' attention will be drawn to this special day. December is also not recommended because of the many holidays (including the year-end holiday), which will affect data collection especially at the government level. Conducting the study in months other than November and December is crucial, as data collection depends on the availability of informants/respondents in the field. It is important to ensure that the study is not conducted at the same time as the research/survey from other institutions, be they government or nongovernment institutions, so that that the respondents/informants will not become overwhelmed/bored with the data collection process that directly involves the community. This is important to ensure the quality of the data collected. To determine the study period, we can consult the Regional Research and Innovation Agency (BRIDA).

4.2.2 Substantive Input

Below is the substantive input for the next study. In general, the substantive input includes issues that need be examined further and aspects that needs to be focused on (Table 16).

Table 16. Substantive Input

No	Issues	Study Focus
1	Tourism industry development	Focus of the study on developing the tourism industry needs to include analyses of the supply and demand in the tourism sector in KSB. The analysis of both aspects is important to obtain a holistic picture of the situation of the tourism sector, which is needed to ensure that the formulation of tourism development programs is done in the correct and integrated manner.
2	MSE development	There needs to be a comprehensive study about MSE development to help stakeholders determine the correct direction of relevant policies/programs aimed at developing MSEs. The focus of the study needs to be holistic, taking into account analysis of several aspects, such as human resources readiness, access to financing, technology utilization, and other supporting infrastructure, which can level up MSEs, including home industries.
3	Education	There needs to be a study about learning quality that analyzes several key aspects from various stakeholders involved in child's education: • School leadership, management, and organization (assessment of school principals) • Improving teacher's capacity in teaching and assessment (assessment of teachers) • Student's learning assessment (assessment of students) • parental involvement in the learning process (assessment of parents)

No	Issues	Study Focus
4	Health	A study on the mapping of nutrition status of children under five years old at the village and *kecamatan* levels can use the small area estimation (SAE) method or utilize data, such as electronic community-based nutrition recording and reporting (e-PPBGM), from the local health agency. The SAE method and the e-PPBGM data can give us estimate numbers of several nutrition indicators, such as stunting, wasting, or malnutrition, at the village or *kecamatan* level. Such data can be used as a reference for more accurate program development and evaluation.
5	Regional development	An assessment study on the regional development indicators in the NTB Province can be conducted with KSB as the main focus. The objective of such a study is to analyze regional-level macroeconomic conditions and households' socioeconomic conditions, as well as to compare development achievements between regions in NTB. This comparative analysis will give a macroscopic picture of the socioeconomic conditions of each region in NTB. Findings of this study can serve as a *kabupaten*-level macroscopic assessment to determine each region's development priorities.
6	About the endline study	If Amman plans to conduct an endline study in the future, the research team recommends that the study ask the same respondents as the baseline study. The research team also recommends that the survey instruments used for the endline study be similar to those used in the baseline study. This is to allow a more precise comparison of the community's socioeconomic condition and to see the impacts of multiple community development programs.

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Appendices

Appendix 1
List of Indicators, Definitions, and Figures

No	Aspect	Indicator	Definition	Control	Treatment
1	Basic infrastructure	Percentage of households accessing safe drinking water	Percentage of households with access to safe drinking water	84.92	84.42
2	Basic infrastructure	Percentage of households accessing proper sanitation	Percentage of households with access to proper sanitation	75.71	77.14
3	Economic infrastructure	Percentage of population who access the internet	Percentage of population aged >= 15 years who have accessed the internet within the last three months	57.76	68.29
4	Economic infrastructure	Quality of internet connection being good and very good	Percentage of population aged >= 15 years who have accessed the internet and think that the quality of the internet connection is good or very good	87.75	90.68
5	Economic infrastructure	Surface of the road around the house made of asphalt/concrete	Percentage of households with the roads made of asphalt/concrete around their homes	34.42	53.60
6	Economic infrastructure	Roads around the house being undamaged/lightly damaged	Percentage of households whose roads around their homes are damaged/slightly damaged	85.18	93.8
7	Economic infrastructure	Percentage of population with access to electricity from State-Owned Electricity Company (PLN)	Percentage of households with access to electricity from the PLN	98.24	96.65
8	Economic infrastructure	Quality of electricity	Percentage of households experiencing power blackouts 0–5 times in a week	95.98	89.45
9	Economic infrastructure	Percentage of population using the internet for work	Percentage of workers aged >=15 years who utilize the internet in their main job	19.18	39.73

No	Aspect	Indicator	Definition	Control	Treatment
10	Economic infrastructure	Percentage of population with a savings account from a financial institution	Percentage of population aged >=15 years with access to financial institutions	41.55	52.07
11	Economic infrastructure	Percentage of population having/running a business who access loans from a financial institution	Percentage of entrepreneurs aged >=15 years who have accessed loans (business loans)	62.17	52.16
12	Economic infrastructure	Percentage of population using the internet for financial transactions	Percentage of population aged >= 15 years who access the internet within the last three months for banking-related activities (financial transactions)	15.87	30.2
13	Economic infrastructure	Percentage of population becoming members of a cooperative/village-level financial institution	Percentage of population aged >=15 years who join a cooperative/village-level financial institution	2.45	2.36
14	Economic infrastructure	Percentage of entrepreneurs joining a business-related association both online and offline	Percentage of entrepreneurs aged >=15 years who join a business association	11.74	12.29
15	Social and environmental vulnerability	Proportion of women aged 20–24 years who were married/in union before age 18	Percentage of women aged 20–24 years old who were married or in union before age 18 against the total number of women aged 20 –24 years old	10.00	10.42
16	Social and environmental vulnerability	Median age of the first marriage for women aged 25–49 years	Median age of the first marriage for women aged 25–49 years (years old)	22	21
17	Social and environmental vulnerability	Proportion of women at the reproductive age (15–49 years old) who make their own decision in matters related to sexual relations, contraceptive use, and healthcare	Percentage of women aged between 15 and 49 who have been married and have the autonomy in decision-making; they (i) have the autonomy to decide on the contraceptive use, (ii) have the autonomy to decide on the preferred healthcare,	52.14	45.67

No	Aspect	Indicator	Definition	Control	Treatment
			and iii) can say no to their partner's request for intercourse		
18	Social and environmental vulnerability	Participation in social activities	Percentage of population aged 10 years or above who participate in community meetings against the total number of people aged 10 years or above	0.35	0.40
19	Social and environmental vulnerability	Ability to express opinions in social activities	Percentage of population aged 10 years or above who can express their opinion in community meetings against the total number of people participating in the meetings	0.58	0.58
20	Social and environmental vulnerability	Participation in an organization outside the school/ work	Percentage of population aged 10 years or above who participate in an organization/community outside their school/work	0.14	0.19
21a	Social and environmental vulnerability	Interreligious tolerance	Percentage of households who agree or strongly agree if people from different religions conduct religious activities or any household member making friends with people from different religions	83.92	87.27
21b	Social and environmental vulnerability	Interethnic tolerance	Percentage of households who agree or strongly agree if people from different ethnic groups conduct an activity related to their ethnicity/culture or if any household member	91.96	92.96

No	Aspect	Indicator	Definition	Control	Treatment
			making friends with people from different ethnic groups		
21c	Social and environmental vulnerability	Migrant tolerance	Percentage of households who agree or strongly agree if people from outside the *kabupaten* (migrants) reside in their neighborhood	94.47	91.29
22	Social and environmental vulnerability	Percentage of households who put their waste in the right place	Percentage of households with a garbage disposal facility (private/communal) and whose waste is picked up by a garbage collector or independently processed/buried (recycled) within the last month	40.40	70.76
23	Social and environmental vulnerability	Percentage of households who sort their waste into organic and nonorganic waste	Percentage of households sorting their waste into organic and nonorganic waste within the last month	0.15	0.19
24	Social and environmental vulnerability	Percentage of population who participate in art/cultural activities	Percentage of population who have participated, as players or committee members, in an art performance/activity, such as film, music, fine arts, literature, dance, theater/puppet show, and others, including *kuda lumping*, *reog*, *barongsai*, etc.	5.98	7.71
25	Social and environmental vulnerability	Percentage of population who participate in training about waste sorting or waste management	Percentage of households whose members have ever participated in training about waste sorting or waste management	0.09	0.10
26	Social and environmental vulnerability	Percentage of population who participate in sports activities (exercises)	Percentage of the population who have exercised within the last week	52.41	55.02

No	Aspect	Indicator	Definition	Control	Treatment
27	Health	Percentage of population who practice clean and healthy lifestyle	Percentage of households who practice clean and healthy lifestyle. The clean and healthy lifestyle refers to the practices recommended by the Ministry of Health, namely (i) childbirth assisted by healthcare workers, (ii) exclusive breastfeeding, (iii) visiting *posyandu*, (iv) access to improved water, (v) access to proper sanitation, (vi) controlling mosquitoes at the larval stage, (vii) daily consumption of fruit and vegetables, (viii) doing physical activities every day, and (ix) not smoking (Kementerian Kesehatan, 2016).	91.30	88.75
28	Health	Percentage of population who have been outpatients and visiting a healthcare facility within the last month	Percentage of population who have illness and seek medication at a healthcare facility (not going to a witch doctor or using traditional medication) within the last three months	22.85	24.59
29	Health	Percentage of population who have been inpatients at a healthcare facility within the last year	Percentage of population who have ever become inpatients at a healthcare facility within the last year	96.67	99.16
30a	Health	Types of diseases/illnesses suffered	Diagnosis from a physician/healthcare worker from a number of people who have been outpatients at a healthcare facility		
30b	Health	Cough and cold	Percentage of population who have ever had a cough	66.27	54.45
30c	Health	Pulmonary TB	Percentage of population who have ever suffered pulmonary TB	1.9	0.35
30d	Health	Pneumonia	Percentage of population who have had pneumonia	1.27	0.7

No	Aspect	Indicator	Definition	Control	Treatment
30e	Health	Leprosy	Percentage of population who have leprosy	0.64	0
30f	Health	Tetanus	Percentage of population who have ever had tetanus	0	0
30g	Health	Measles	Percentage of population who have ever had measles	1.91	0.7
30h	Health	Diarrhea	Percentage of population who have ever had diarrhea	2.55	2.1
30i	Health	DHF	Percentage of population who have ever had DHF	0	1.05
30j	Health	Malaria	Percentage of population who have ever had malaria	0	0.7
30k	Health	HIV/AIDS	Percentage of population with HIV/AIDS	0	0
30l	Health	STD	Percentage of population who have ever had sexually transmitted infection	0	0
30m	Health	COVID	Percentage of population who have ever had COVID-19	0	0.35
30n	Health	Others	Percentage of population who have ever suffered other illnesses	39.63	28.37
31	Health	Percentage of health insurance ownership	Percentage of population who have health insurance (BPJS Health or health insurance provided by their place of work or independently)	0.60	0.83
32	Health	Percentage of deliveries assisted by healthcare personnel	Percentage of women aged 15–49 years who were married and have given birth within the	97.87	98.91

No	Aspect	Indicator	Definition	Control	Treatment
			last two years whose deliveries were assisted by trained professional medical personnel		
33	Health	Percentage of deliveries done at a healthcare facility	Percentage of women aged 15–49 years who were married and have given birth within the last two years and who gave birth at a healthcare facility (not at home or using traditional medication)	93.62	95.65
34	Health	Percentage of *posyandu* visits	Percentage of children under five years old who are taken to *posyandu* when there is a *posyandu* schedule against the total number of children under five years old	97.53	95.56
35	Health	Percentage of population aged ≤ 18 years who smoke	Percentage of population aged 18 years or below who smoke against the total number of people aged 18 years or below	1.21	1.23
36	Health	Percentage of population aged ≤ 15 years who smoke	Percentage of population aged 15 years old and below who smoke against the total number of population aged 15 years old and below	0.40	0.23
37	Health	Percentage of exclusive breastfeeding	Percentage of children under two years old who have exclusive breastfeeding within their first six months of life	28.13	52.86
38	Health	Percentage of children (5–17 years old) who are outpatients and have visited a healthcare facility within the last month	Percentage of children (5–17 years old) who are sick and seek treatment at a healthcare facility (not from a witch doctor or using traditional medication) within the last three months	21.83	22.39

No	Aspect	Indicator	Definition	Control	Treatment
39	Health	Percentage of children (5–17 years old) who have been inpatients at a healthcare facility within the last year	Percentage of children (5–17 years old) who have been inpatients at a healthcare facility within the last year	100.00	100.00
40	Health	Percentage of population who are aware of mercury hazards	Percentage of population aged 10 years or above who have good understanding of, or can explain, the dangers of mercury exposure (both from cosmetics which contain mercury and from illegal mining activities)	13.25	24.81
41	Employment	Unemployment rates among young people	Percentage of young population (16–30 years old) who are not employed, but are looking for a job against the total number of young population who are entering the workforce	13.91	14.61
42	Employment	Unemployment rate	Percentage of population in the workforce who are not working, but are looking for a job against the total number of population in the workforce	5.05	6.32
43	Employment	LFPR	Percentage of population entering the workforce, namely those who are currently working or are not employed but are looking for a job, against the total number of population	44.26	45.74
44	Employment	Underemployment rate	Percentage of population working less than 35 hours a week against the total number of population who work	32.26	34.04
45	Employment	Workers with senior high school education and above	Percentage of population who work, with a minimum of senior high school education against the total number of population who work	42.71	49.68

No	Aspect	Indicator	Definition	Control	Treatment
46	Employment	Employees/clerks/laborers/workers with a work contract	Percentage of workers with the status of paid employee/clerk/laborer or freelancer, with a work contract	38.15	60.92
47	Employment	Workers who receive training	Percentage of the working population who have ever participated in certified training	19.68	32.12
48	Employment	Average monthly wage/pay	Average monthly wage received by workers with the status of employee/clerk/laborer (rupiah)	Rp1,868,355	Rp3,332,635
49	Employment	Average income/turnover per month	Average monthly income/turnover/revenue received by workers who run their own business or run a business assisted by a paid or unpaid worker (rupiah)	Rp6,570,690	Rp11,188,800
50	Employment	Average work hours in a week	Workers' average number of workhours in a week	44.08	42.05
51	Employment	Ownership of worker social security insurance	Percentage of workers with worker social security insurance, such as BPJS Employment, pension plan, or old-age insurance	92.58	78.45
52	Education	NER at early childhood education level	Percentage of children aged 5–6 years who go to kindergartens/playgroups against the total number of children aged 5–6 years old	93.75	96.59
53	Education	NER at the elementary school level or its equivalent	Percentage of children aged 7–12 years who are in the elementary school or its equivalent against the total number of children aged 7–12 years	100.00	99.17
54	Education	NER at the junior high school level or its equivalent	Percentage of young people aged 13–15 years old who are in junior high school or its	93.10	99.21

No	Aspect	Indicator	Definition	Control	Treatment
			equivalent against the total number of young people aged 13–15 years		
55	Education	NER at the senior high school level or its equivalent	Percentage of young people aged 16–18 years who are in senior high school or its equivalent against the total number of young people aged 16–18 years	86.84	86.24
56	Education	NER at the higher education level	Percentage of the population aged 19–24 years who are in college against the total number of people aged 19–24 years	8.05	3.51
57	Education	Average score on the cognitive assessment of the population aged 7–24 years	Average score on the cognitive assessment of the population aged 7–24 years	60.88	56.67
58	Education	Mean years of schooling for population aged ≥ 24 years	Average number of years spent by population aged ≥ 24 years to attain all educational levels	9.42	9.39
59	Education	The ratio of women' GER to men' for senior high school level or its equivalent	GER scores of women in senior high school or its equivalent divided by those of men	1.08	1.03
60	Education	The ratio of women's GER to men's for higher education	GER scores of women for university divided by those of men	2.98	1.33
61	Economic development of nonmining sectors	Percentage of population working in the tourism industry	Percentage of population aged >=15 years who work in the tourism industry	4.59	8.42
62	Economic development of nonmining sectors	Percentage of workers in the tourism sector with a minimum of senior high school education	Percentage of workers in the tourism industry aged >=15 years with a minimum of senior high education or its equivalent	42.31	48.72
63	Economic development of nonmining sectors	Percentage of workers in the tourism sector who have ever received training	Percentage of workers in the tourism industry aged >=15 years who have ever received training	10.71	15.85

No	Aspect	Indicator	Definition	Control	Treatment
64	Economic development of nonmining sectors	Average income of population who have their own business and are assisted by workers in the tourism sector	Average income of entrepreneurs aged >=15 years who work in the tourism industry	Rp3,231,250	Rp1,803,378
65	Economic development of nonmining sectors	Average wage of workers with the status of laborer/employee/staff in the tourism sector	Average income of workers aged >=15 years working in the tourism industry	Rp716,666	Rp2,406,818
66	Economic development of nonmining sectors	Percentage of population who are aware of ecotourism	Percentage of population aged >=15 years who are aware of ecotourism	0.41	1.01
67	Economic development of nonmining sectors	Percentage of young people in the labor force who have ever received training	Percentage of population aged 16–30 years who work and have ever received training within the last year	22.22	36.36
68	Economic development of nonmining sectors	Percentage of young people in the labor force who have/run their own business (running it independently or assisted by workers)	Percentage of entrepreneurs aged 16–30 years against workers aged 16–30 years	29.29	17.1
69	Economic development of nonmining sectors	Average of income of young people with the status of running their own business or assisted by workers	Average income of people aged 16–30 years who have their own business	Rp1,012,857	Rp1,129,130
70	Economic development of nonmining sectors	Percentage of businesses which have a business permit or whose products have been certified	Percentage of people aged >=15 years who have a business permit or whose products have undergone the certification process	13.04	21.93

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