



# Financial literacy and financial inclusion of Mongolian migrants in Japan and their families in Mongolia



Baseline Survey Report

Tokyo, 2021

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Please cite this report as:

Murakami, Enerelt (2021). “Financial Literacy and Financial Inclusion of Mongolian Migrants in Japan and their Families in Mongolia: Baseline Survey Report.” Tokyo: Japan International Cooperation Agency.

## **Acknowledgements**

This work was supported by JSPS KAKENHI Grant number 19K13713 “The impact of financial literacy on remittance decisions in transnational households: The case of Mongolian migrants in Japan.”

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## Abbreviations

COVID-19	Coronavirus disease 2019
GDP	Gross Domestic Product
INFE	International Network on Financial Education
JLPT	Japanese Language Proficiency Test
JPY	Japanese Yen
MNT	Mongolian Tugrug
OECD	Organization for Economic Cooperation and Development
SNS	Social Networking System
USD	United States Dollar
WHO	World Health Organization

## **Executive summary**

This report provides an overview of the main results of the baseline survey on financial literacy and inclusion of Mongolian migrants in Japan and their families who remain behind in Mongolia. The baseline survey is the first phase of a three-phase research project designed to quantify the impacts of financial literacy competencies on financial decision-making in transnational households. Within this broader objective, the baseline survey serves to build a database of information necessary to gauge the financial literacy and financial decision-making behaviors of Mongolian migrants in Japan and their families in Mongolia.

The survey was implemented through an online survey platform using SNS to recruit the target participants. As a sampling frame for the Mongolian migrants in Japan does not exist, the survey opted for non-probability sampling, in which sampling bias is alleviated using a post-stratification weighting technique based on the official statistics of Japan. The data collection of Mongolian migrants in Japan was implemented in May–June 2020, and that of their families in Mongolia was conducted from August to December 2020. The total matched migrant-family sample size is 112 migrants plus their family members. Although the sampling bias is reduced, it is acknowledged throughout the report that the results are representative of the survey participants rather than the whole Mongolian migrant population in Japan and their families in Mongolia.

The main results of the survey are analyzed in Chapters 4–6, which focus on remittances, financial literacy, and financial inclusion. Remittances are a specific feature of many transnational households. In the case of Mongolia-Japan transnational households, 87% of migrants in Japan send monetary remittances to Mongolia, while only 9% of families in Mongolia send monetary remittances to their migrant household members. The remittances sent by the migrants make up a quarter of the total income of their families in Mongolia. Most remittances are sent through international money transfer services, although a significant percentage (27%) of the migrants still send money through strangers. In terms of in-kind remittances, 35% of family members send such remittances to Japan, while 26% of the migrants send them to Mongolia. Additionally, the survey results reveal some notable differences between the migrants' perspective on how their families in Mongolia use the remittances and the actual consumption of the families.

Chapter 5 measures and analyzes the financial literacy level of the migrants and their families. To construct financial literacy indicators, the survey adopts the OECD/INFE 2018 toolkit with modifications to fit with financial systems in Mongolia and Japan. The overall financial competency is defined as the sum of financial knowledge, behavior, and attitudes. By this definition, the overall financial literacy score for the migrants is 15.4 out of 21 or 73%, while the score for their family members is 16.5/21 or 78%. In all three components of financial literacy, the migrants consistently underperform in comparison to their families in

Mongolia. Both the migrants and their families have relatively good financial behavior and a positive attitude toward long-term financial matters. The weakest point appears to be financial knowledge, where general numeracy knowledge and practical application of numeracy skills are important.

Chapter 6 discusses the financial inclusion of the respondents, which is closely associated with financial literacy. Research shows that financially more literate individuals are more financially included. As with financial literacy, the migrants underperform in financial inclusion in terms of product holding and product awareness compared to their families in Mongolia. With the exception of investment products, the migrants hold fewer financial products than their families in Mongolia. Moreover, they are aware of fewer financial products than their family members, which could reflect their lack of familiarity with the foreign financial system.

As the implementation of the baseline survey took place amid the COVID-19 pandemic, the survey added an additional module related to COVID-19 for informational purposes. More than 60% of the migrants and almost half of the families report that their income has been reduced during the pandemic. Further, 73% of the migrants reduced the amount of money sent in remittances to Mongolia, and 2% of them reported that they had become unable to send money back home.

Based on the main results on financial literacy and inclusion, the report offers several policy recommendations. First, there is a need to strengthen the financial knowledge of both migrants and their families. Applied numeracy is an important part of both formal education and financial knowledge. Consequently, teaching the practical application of numeracy skills to daily financial problems in school could help young people to develop the skills necessary to achieve financial wellbeing. Second, gender differences need to be taken into account when amplifying the financial literacy of the population. Among the migrants, women constantly underperformed in financial literacy. As their income stream and employment opportunities are different from those of men, especially in a foreign country, their financial literacy needs should be addressed separately. Finally, pre-departure financial literacy training focusing on the host country's financial system could be beneficial for the migrants, as they consistently underperformed in financial literacy and inclusion compared to their families in Mongolia. For migrants who come to Japan on inter-governmental or organizational contracts in particular, there is a good opportunity to provide such trainings. Care needs to be taken when generalizing the findings and recommendations of this research.

## 1. Aims and objectives of the survey

This baseline survey is the first phase of a three-phase study designed to measure and improve the financial literacy of Mongolian migrants in Japan and their households who remain behind in Mongolia. The overall objective of this research is to study the impact of financial literacy on the remittance-sending decisions and the remittance use of the non-migrant household members remaining at home. The key question that the research seeks to answer is “How does financial literacy affect remittance and financial decision-making behavior among migrants and their families?” By answering this question, the research will shed light on whether financial literacy trainings can improve financial decision-making in transnational households and increase their savings and investments.

The three phases of the study are as follows:

**Figure 1 Research phases**



Source: Author’s illustration

Within the overall objective of the research plan, the baseline survey aims to achieve the following two goals.

1. Baseline measurement of financial literacy and financial inclusion of Mongolian migrants in Japan and their respective households in Mongolia; and
2. Identification of remittance behaviors of the migrants and the use of remittances by their households in Mongolia.

Financial literacy is primarily measured based on the OECD/International Network for Financial Education (OECD/INFE) 2018 Toolkit<sup>1</sup> (OECD 2018) for Measuring Financial Literacy and Financial Inclusion with modifications to suit the Mongolian and Japanese

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<sup>1</sup> <https://www.oecd.org/financial/education/2018-INFE-FinLit-Measurement-Toolkit.pdf> (accessed on 01/11/2021)

financial systems. The OECD/INFE methodology is suitable for capturing the financial literacy levels of adults over 18 years old from different educational and cultural backgrounds. Accordingly, the definition of financial literacy used in this report corresponds to the OECD/INFE methodology, which defines financial literacy as “a combination of awareness, knowledge, skills, attitudes, and behaviors necessary to make sound financial decisions and ultimately achieve individual financial wellbeing.” Thus, financial literacy is measured by the combination of three core competencies: financial knowledge, financial behavior, and financial attitudes. The survey questionnaire includes sets of questions designed to measure each of these three core competencies. The financial knowledge component measures whether an individual has a basic understanding of inflation, interest rates, and risk. Financial behavior competency measures whether an individual is prudent in saving, long-term planning, keeping track of cash flow, and making considered purchases. Lastly, the financial attitude competency assesses whether an individual demonstrates a long-term attitude to money and affinity towards saving.

Financial inclusion refers to the access to useful and affordable formal financial products and services that meet individuals’ and businesses’ needs. Financial inclusion is also closely related to financial literacy because people need to know how holding financial products will benefit them and have the competency to choose appropriate products and make informed decisions to benefit them. Following the OECD/INFE methodology, this baseline survey looks at the following measures of financial inclusion: awareness of financial products, recent product choice, product holding, and the extent to which people are relying on family and friends to provide alternatives to formal financial services (that is, financial exclusion).

The advantage of adopting the OECD/INFE methodology in the present survey is twofold. First, the methodology is designed to produce internationally comparable statistics on financial literacy and financial inclusion of adults aged between 18 and 79. Second, the Government of Mongolia has launched a national strategy for financial education to improve the level of financial literacy competencies among its population. Under the national strategy for financial education, the Government of Mongolia has adopted the OECD/INFE methodology to define financial literacy and inclusion. Although Mongolia has not conducted a nationally representative survey on financial literacy and inclusion since adopting the methodology, it has been actively promoting financial education and providing free-of-charge financial education trainings targeting various target groups such as school children, youth, and rural residents (Bank of Mongolia 2016). Therefore, applying the OECD/INFE methodology in the present survey will not only produce internationally comparable statistics but is also compatible with the national strategy for financial education.

In addition to building baseline measures for financial literacy and financial inclusion, the survey also aims to ascertain the remittance behavior of Mongolian migrants in Japan and the use of the remittances by families in Mongolia. The survey looks at different aspects of

remittance behavior, including the amount, frequency, mode, and purpose of the remittances.

## 2. Sample design and the implementation of the survey

This section describes the survey implementation, including the questionnaire development and sampling design to collect the baseline data.

### 2.1 Baseline survey instruments

The baseline survey data were collected from separate questionnaires, one for migrants and one for families, as the living conditions and financial markets they face are different. However, the main components for determining financial literacy and financial inclusion are the same. Table 1 shows the structure of each questionnaire.

**Table 1 Questionnaire forms**

<i>Questionnaire for migrants in Japan</i>	<i>Questionnaire for families in Mongolia</i>
0. Consent to participate in the survey (terminate if consent not given)	0. Consent to participate in the survey (terminate if consent not given)
1. General information including age, gender, marital status, educational level, and employment status in Japan	1. General information on household including the household size, household head's age, gender, marital status, educational level, and employment status.
2. Remittance behavior: receiving and sending	2. General information about the respondent (if different from the household head)
3. Financial behavior	3. Remittance behavior: receiving and sending
4. Financial inclusion	4. The use of remittances
5. Financial attitudes	5. Financial behavior
6. Financial knowledge	6. Financial inclusion
7. COVID-19 crisis	7. Financial attitudes
	8. Financial knowledge
	9. COVID-19 crisis

### 2.2 Sampling design

The probability sampling method that makes the most accurate inferences about a target population involves selecting the samples at random, with each unit of the sample having a known probability of selection. In order to implement probability sampling method, a sampling frame that accurately captures the complete list of the target population is required. Unfortunately, such sampling frames often do not exist, especially for hard-to-reach

populations such as migrants. Even if sampling frames exist, they are frequently inaccessible to researchers due to the confidential information included in them. Therefore, probability sampling is often not feasible, despite being the preferred method to produce inferences representative of the target population. This is true for the current survey as there is no sampling frame for Mongolian migrants in Japan. As a result, the survey opts for non-probability sampling in which the survey participants are selected based on their accessibility and proximity to the research.

Despite being simpler to execute and more efficient for collecting data in a short period of time compared to probability sampling, non-probability sampling lacks the capacity to produce generalizable results for the target population. The sampling bias from non-probability sampling could extend to estimates of the total population effects and subpopulation differences. Driven by the need to collect data efficiently and cost-effectively, methodologies to correct the sampling bias from non-probability sampling have advanced in recent years. One such sampling bias correction method is the post-stratification weighting technique, in which the survey data are compared with existing data such as population surveys and administrative registration data. Research has shown that using the post-stratification technique is effective in correcting sampling bias even in surveys with low response rates (Zahgeni and Weber 2015).

In the baseline survey, the post-stratification technique is used to re-weight the survey data using the administrative data on the Mongolian migrants in Japan obtained from the Portal Site of Official Statistics of Japan<sup>2</sup> as a benchmark. We used age and gender data to construct post-stratification weight, as these demographic data have low non-response rates with little error in the survey. In this case, the population data are broken down by age and gender for each stratum. The benchmark data and survey data are categorized into five age groups (18–24, 25–34, 35–44, 45–55, and above 55) and two gender groups (male and female). Then, the post-stratification weights are calculated as follows:

$$w_{ij} = \frac{P_{ij}/P}{S_{ij}/S}$$

$$w_{ij}^{post} = w^{ipw} \cdot w_{ij}$$

where  $P$  is the total target population,  $P_{ij}$  and  $S_{ij}$  are the population and sample size in age group  $i$  and gender group  $j$ , and  $w^{ipw}$  is the inverse probability weight of the sample which is defined as  $w^{ipw} = 1/S/P = \frac{P}{S}$ . The post-stratification weight used to correct the sampling

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<sup>2</sup> <https://www.e-stat.go.jp/en> (accessed on 01/12/2021).

bias is  $w_{ij}^{post}$ .

Table 2 shows a comparison of the unweighted distribution of Mongolian migrants in Japan across age and gender, respectively. A simple comparison of the official benchmark statistics with our survey sample reveals that the survey oversampled women in the 25–34 age group and men in the 35–44 age group and under-sampled both men and women in the other age groups.

**Table 2 Distribution of Mongolian migrants in Japan across age and gender: Official statistics versus the survey sample, unweighted**

Age groups	Official statistics			Survey sample		
	Men	Women	Total	Men	Women	Total
18–24	18.6	15.2	33.7	0.9	0.9	1.8
25–34	21.3	23.8	45.2	17.9	47.3	65.2
35–44	5.2	11.1	16.3	24.1	5.4	29.5
45–54	1.1	3.0	4.1	1.8	0.9	2.7
55+	0.1	0.6	0.7	0.0	0.9	0.9
Total	46.3	53.7	100.0	44.6	55.4	100.0

Source: Author’s calculations based on Official Statistics of Japan and the Baseline survey

Table 3 shows the distribution of the population across age groups and gender after applying the post-stratification weighting technique. The comparison between the benchmark population distribution and the sample distribution shows that the over- and under-sampling bias have been corrected substantially. Therefore, weighted survey estimates for totals and gender and age-specific statistics will be reported.

**Table 3 Distribution of Mongolian migrants in Japan across age and gender: Official statistics versus the survey sample, weighted**

Age groups	Official statistics			Survey sample, weight adjusted		
	Men	Women	Total	Men	Women	Total
18–24	18.6	15.2	33.7	18.6	15.2	33.8
25–34	21.3	23.8	45.2	21.4	23.8	45.2
35–44	5.2	11.1	16.3	5.2	11.2	16.3
45–54	1.1	3.0	4.1	1.1	3.0	4.1
55+	0.1	0.6	0.7	0.0	0.6	0.6
Total	46.3	53.7	100.0	46.3	53.7	100.0

Source: Author’s calculations based on Official Statistics of Japan and the Baseline survey

As our post-stratification weighting is based on stratification on age and gender, it is likely to produce ungeneralizable inferences for higher-order stratifications such as age-gender-geographical location, age-gender-education, and the like. Therefore, we do not apply

the post-stratification weights to any higher-order stratifications, and for such cases, we report the results only for the sampled population and not as representative results of the total target population.

### **2.3 Data collection**

The data collection for the survey was implemented in two phases: (1) the data collection of migrants; and (2) the data collection of their families. As there is no sampling frame available, we tried to recruit as many Mongolian migrants in Japan as possible through Social Networking Systems (SNS). To ensure that privacy and the data security are protected, we contracted an online survey provider called QuestionPro to collect data.

The first phase of the survey was implemented in May and June 2020. The online survey form via QuestionPro was uploaded to a number of Facebook groups for Mongolians in Japan to recruit migrants. There are many Facebook groups;<sup>3</sup> however, not all members are currently living in Japan. While the purpose of the groups is mainly to share information and provide a network for Mongolians living in Japan, the group members include returned and intended migrants in addition to current migrants in Japan. Therefore, a screening test is included in the online questionnaire to ensure that the respondent is currently living in Japan and above 18 years old. To confirm that the participants are actually accessing the survey from Japan, we checked that the IP addresses were within Japan and excluded those who were not in Japan. Additionally, we allowed the survey to be taken only once by each participant to avoid duplicate participation. To ensure this, we restricted each IP address, email address, and device accessing the survey to ensure that each response was unique.

During May and June 2020, the survey recruited 260 Mongolian migrants in Japan via SNS. Each participant had to consent before proceeding to the online survey. The consent form was provided online and participants needed to indicate their agreement to launch the survey. Through the migrant participants, the survey recruited their family members who had remained in Mongolia. The second phase of the survey was implemented from August to December 2020. The implementation of the second phase of the survey took relatively longer than the first phase because of difficulties of reaching and tracking the target respondents through email addresses provided by migrants in Japan. Ideally, the survey targeted household heads or someone responsible for family finances. In some cases, even though the migrants consented to participate in the survey, their families in Mongolia declined to participate. For these reasons, the final matched migrant-family sample comprises 112 migrants and their families. The rest of the report presents results for the final matched migrant-family sample.

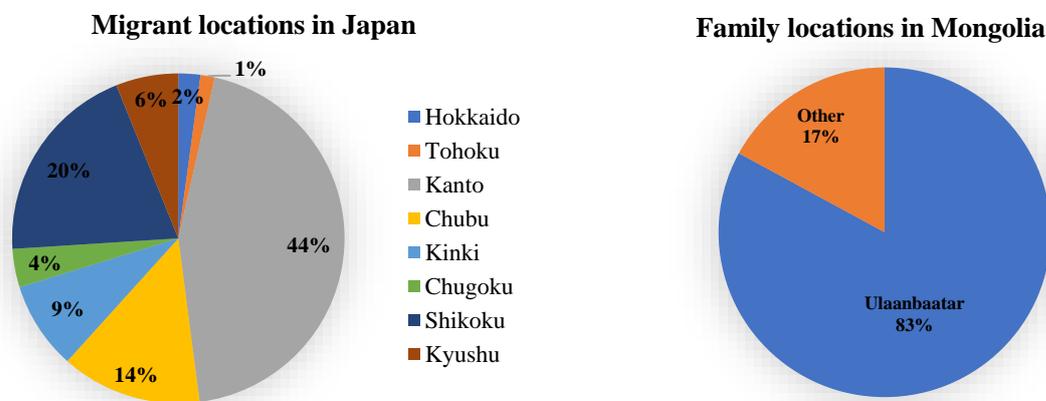
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<sup>3</sup> Our survey team found nearly 50 Facebook groups dedicated to Mongolians in Japan with various membership sizes starting from a couple of hundred to tens of thousands of members. Most of the groups are for advertising, sales, bartering, and information sharing among Mongolians in Japan.

### 3. General characteristics of the respondents

This section describes the general characteristics of the survey respondents, including their location, marital, education, and employment status. For statistics on general characteristics, weighted averages are reported unless stated otherwise. Figure 2 presents locations in Japan and Mongolia where the survey respondents participated in the survey. The results show that the majority of the respondents are living in the Kanto region in Japan, while their families are living in Ulaanbaatar city in Mongolia.

**Figure 2 Distribution of Mongolian migrants across regions in Japan and their family locations in Mongolia, percent of totals**



Source: Author’s calculations

By marital status, the majority of the migrants in Japan are never married (63%) and not living with any family members (64%) in Japan (Tables 4–5). On the other hand, Table 6 shows that their family members in Mongolia who responded to the survey are mostly their parents and siblings. This may reflect that the migrant respondents to our survey are mostly young men and women aged 25–34 who have never married.

**Table 4 Marital status of Mongolian migrants in Japan, percent**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
Never married	0.63	0.10	0.43	0.83
Married	0.30	0.09	0.13	0.47
Living together	0.06	0.03	0.01	0.11
Separated	0.01	0.01	0.00	0.02
Widowed	0.01	0.01	-0.01	0.02

Source: Author’s calculations

**Table 5 Share of migrants living together with family members in Japan, percent**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
Living together	0.36	0.10	0.17	0.55
Not living together	0.64	0.10	0.45	0.83

Source: Author's calculations

In terms of the purpose of migrating to Japan, 74% of the migrant participants responded that their main purpose was to work, 16 percent replied that they had come to study in Japan, while the remainder said that their purpose was to reunite with family or other reasons (Table 7). This is reflected in the residence status of the migrants in Japan, in which more than half of the respondents hold some type of employment residence status (Table 8). However, it should be noted that the inferences by residence status cannot be generalized to the target population or the total Mongolian migrants in Japan. This is because post-stratification weighting is only at the level of age and gender of the migrant respondents in our survey. Therefore, we consider this result only applies to the survey sample that we obtained.

**Table 6 Relationship of the respondent in Mongolia to the migrant in Japan, percent**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
Spouse	0.12	0.04	0.04	0.19
Son, daughter	0.02	0.01	-0.01	0.04
Parent	0.53	0.13	0.27	0.78
Sibling	0.15	0.06	0.04	0.27
Other relative	0.19	0.16	-0.12	0.49

Source: Author's calculations

**Table 7 Main reasons for migration to Japan**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
To work	0.74	0.08	0.59	0.89
To unite with family	0.07	0.04	-0.01	0.14
To study	0.18	0.06	0.07	0.30
Other	0.01	0.01	-0.01	0.02

Source: Author's calculations

As the majority of the migrants migrated to Japan to work or to study, they have a relatively high level of Japanese language proficiency. Of the migrants, 44% responded that they are highly fluent in both daily life and professional settings, and 41% of the migrants had already passed the Japanese Language Proficiency Test (JLPT) N1 level<sup>4</sup> (Tables 9–10). On

<sup>4</sup> The JLPT is a test to measure and certify the Japanese-language proficiency of those whose native language is not Japanese. There are five levels (N1, N2, N3, N4, and N5) in the JLPT. The easiest

the other hand, only 2% stated that they know very little or no Japanese.

**Table 8 Residence status of Mongolian migrants in Japan, percent of the survey respondents**

Residence status	Number	Percent
Skilled labor	33	29.5
Engineers/Specialists in Humanities/International services	16	14.3
Specific skilled labor	16	14.3
Spouses or children of permanent residents	5	4.5
Students	5	4.5
Technical intern training	4	3.6
Other	33	29.5
Total	112	100.0

Source: Author's calculations

**Table 9 Japanese language proficiency of Mongolian migrants, percent**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
None/very little	0.02	0.02	-0.02	0.06
Able to communicate daily conversations, but can't read or write	0.05	0.03	-0.01	0.11
Able to communicate daily conversation and read and write a few kanji	0.28	0.14	0.00	0.57
Know terms and kanji only related to work/profession/specialty	0.20	0.06	0.08	0.32
Highly fluent in both daily life and professional settings	0.44	0.12	0.19	0.69

Source: Author's calculations

**Table 10 Take-up and pass rates of the JLPT by Mongolian migrants in Japan, percent**

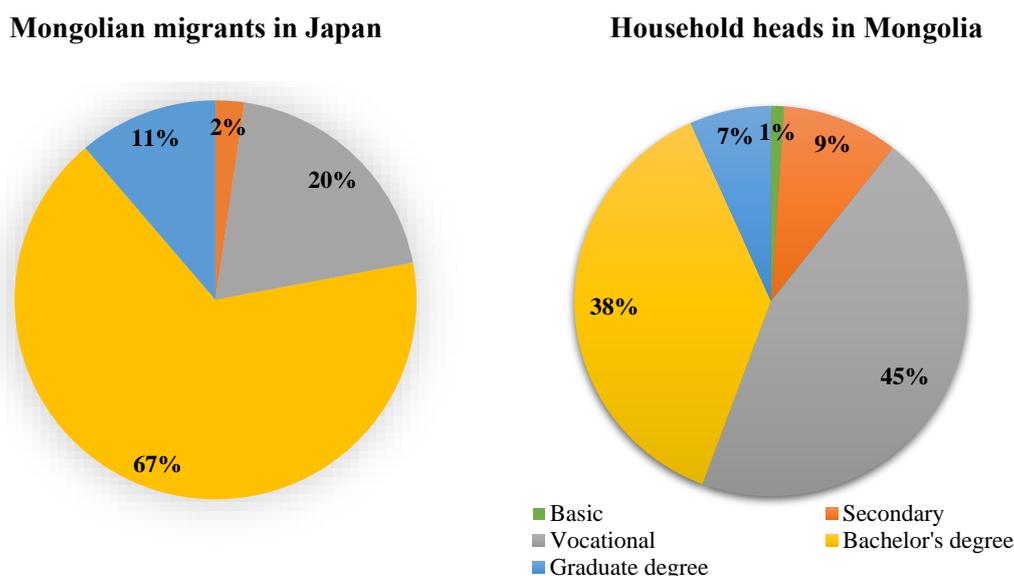
	Mean	Standard error	95% Confidence interval	
			Lower	Upper
Have never taken the JLPT	0.15	0.06	0.04	0.26
Passed the N1 level	0.41	0.12	0.16	0.66
Passed the N2 level	0.17	0.05	0.06	0.27
Passed the N3 level	0.06	0.02	0.01	0.11
Passed the N4 level	0.19	0.15	-0.11	0.50
Passed the N5 level	0.02	0.02	-0.02	0.06

Source: Author's calculations

level is N5 and the most difficult level is N1. The N1 level measures the ability to understand Japanese used in a variety of circumstances, both in professional and daily settings.

By educational levels, Mongolian migrants in Japan have a relatively higher level of education than their families (household heads) in Mongolia. Of the migrants who participated in the survey, 67% have a bachelor’s degree, and 11% have a graduate degree, while 38% of their family member respondents have a university degree, and only 7% have a graduate degree. The majority of the household heads in Mongolia have vocational and technical education.

**Figure 3 Educational levels of migrants and their families, percent**

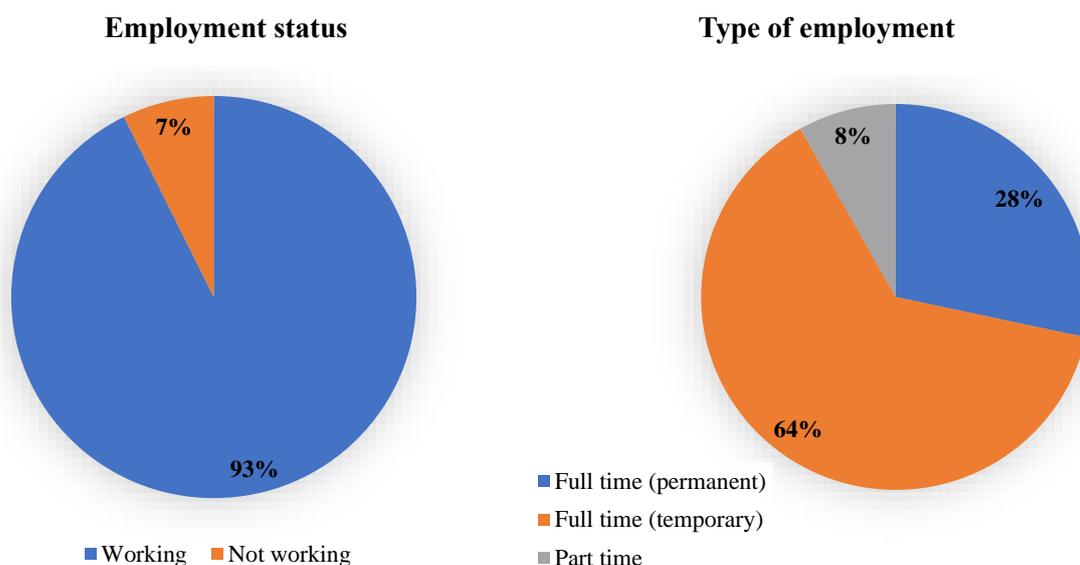


Source: Author’s calculations

By employment status, most of the migrants participating in the survey are working full-time on temporary contracts (Figure 4). Of the employed migrants, more than 90% work full time and only 8% work part-time. Among all migrant respondents, only 7% do not work.

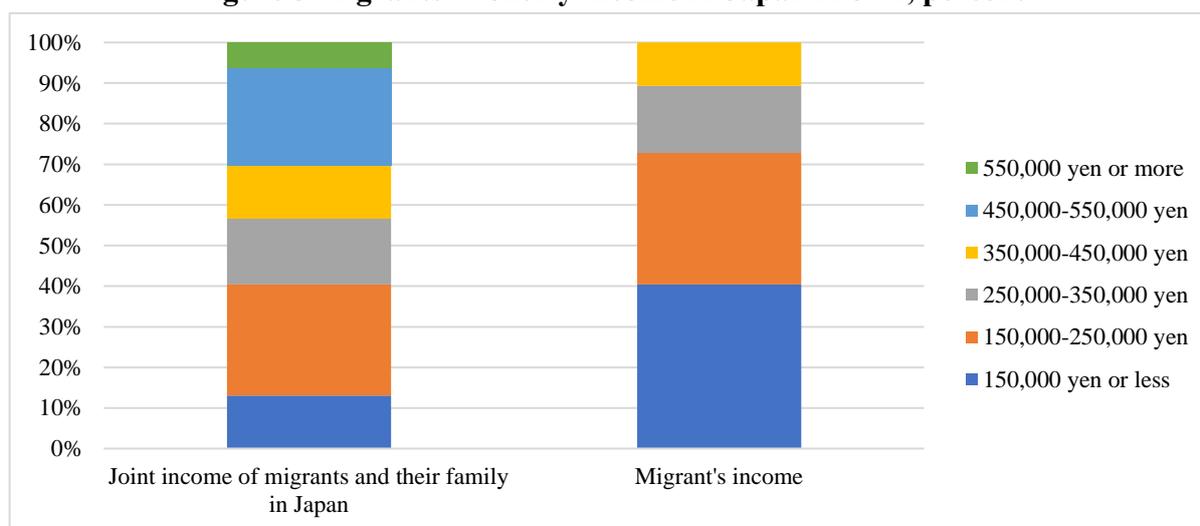
More than 70% of Mongolian migrants in Japan earn up to 250,000 JPY a month. If the migrants live together with another family member in Japan and pool their incomes together, their joint monthly income averages about 350,000 JPY. Figure 5 presents migrants’ monthly income in Japan.

**Figure 4 Employment status and type of migrants, percent**



Source: Author's calculations

**Figure 5 Migrants' monthly income in Japan in JPY, percent**

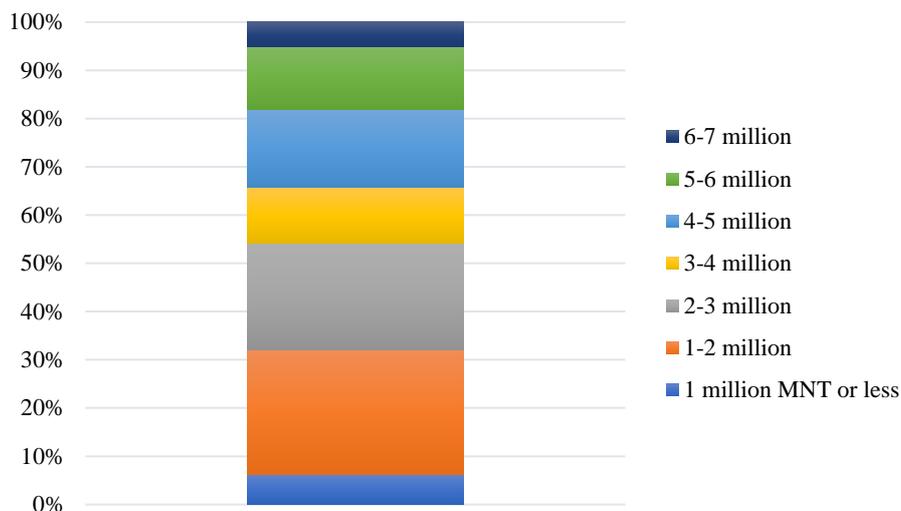


Source: Author's calculations

By comparison, the migrants' households in Mongolia have an average monthly income of 3.1 million MNT<sup>5</sup>. About half of the households have a monthly income of 2–5 million MNT. Figure 6 shows the monthly income of households of migrants in Mongolia.

<sup>5</sup> The average monthly income of families in Mongolia is approximately 119,737 JPY converted using the official daily exchange rate (1 JPY = 25.89 MNT) announced by the Bank of Mongolia as of June 16, 2021 at <https://www.mongolbank.mn/eng/dblistofficialdailyrate.aspx> (accessed on 06/16/2021).

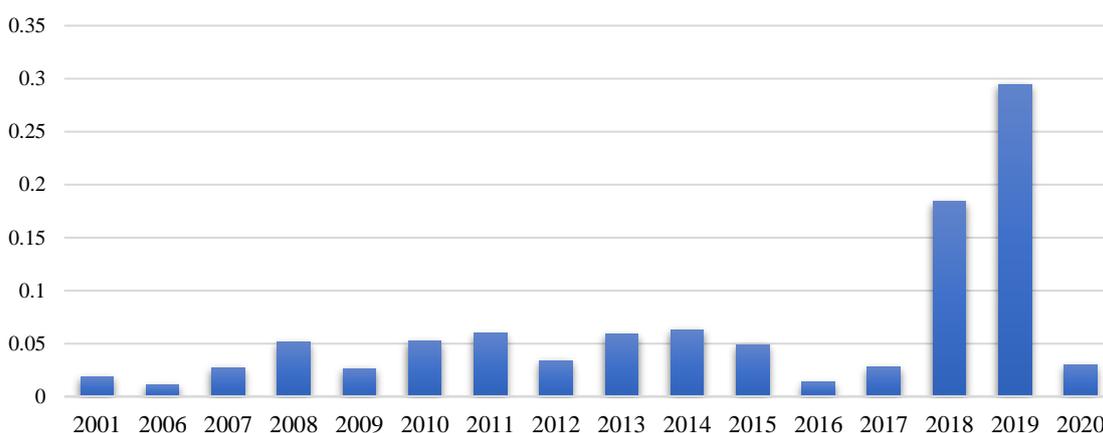
**Figure 6 Monthly household income in MNT, percent**



Source: Author's calculations

The survey also collected data on when the migrants first migrate to Japan and how long they intend to stay in Japan, as the research intends to conduct a follow-up survey within a year. Among the participants in the survey, almost half had first migrated to Japan in 2018 and 2019. Perhaps due to the COVID-19 pandemic and associated mobility restrictions across borders, less than 3% of the migrants had migrated to Japan in 2020. The earliest migrants in our sample migrated to Japan in 2001 and about 10% of migrants came to Japan before 2008. Figure 7 shows the year of arrivals in Japan by Mongolian migrants currently living in Japan.

**Figure 7 Mongolian migrants by the year of arrival in Japan, percent of respondents**

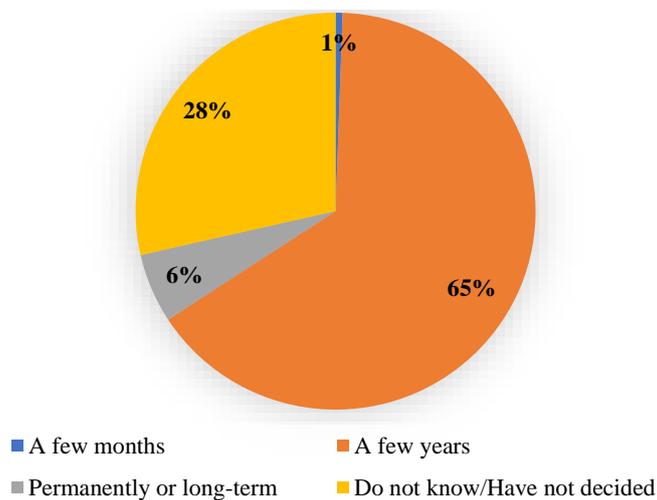


Source: Author's calculations

While the earliest migrants in our sample have been living in Japan for almost 20 years, the majority of the migrants are planning to live in Japan for a few more years. Among

the migrants, 28% have not decided how long they will stay in Japan. Only about 1% of the migrants are planning to leave Japan in the next few months, while 6% have decided to live in Japan permanently or for a long period of time. Figure 8 presents the migrants’ intended period of stay in Japan.

**Figure 8 Intended period of stay in Japan, percent of migrants**



Source: Author’s calculations

#### 4. Remittances: monetary and in-kind

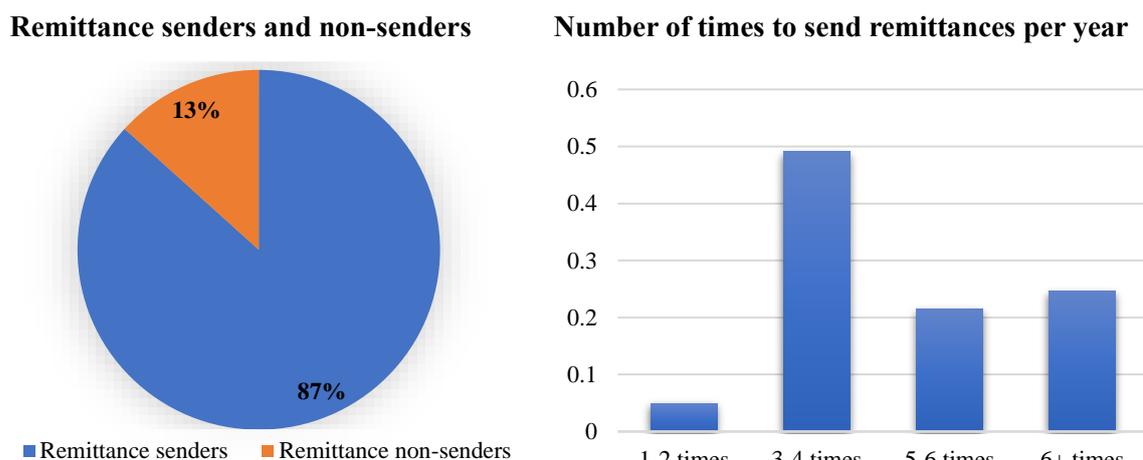
The remittance inflows into Mongolia have been increasing steadily in recent years and reached 549 million USD or 4% of the country’s GDP in 2020 despite the COVID-19 pandemic.<sup>6</sup> While the largest remittance source countries continue to be China and Russia, remittances from Japan are the seventh-largest source and make up about 2% of the total remittance inflows (World Bank 2021).

##### 4.1 Remittances from Japan to Mongolia

Among the survey participants, 87% of migrants responded that they send remittances to their families in Mongolia. Almost half of the remittance senders responded that they send money back home 3–4 times a year (Figure 9).

<sup>6</sup> World Bank Migration and Remittances Data <https://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-remittances-data> (accessed on 05/20/2021).

**Figure 9 Remittance senders and non-senders, percent**



Source: Author's calculations

**Table 11 Remittance amounts sent each time period, JPY**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
Every month	38,874	8,806	21,401	56,346
Every two months	201,827	21,957	158,258	245,395
Every three months	347,125	18,485	310,445	383,804
Every 6 months	248,028	150,328	-50,257	546,312
Other frequency	97,231	3,268	90,747	103,715

Source: Author's calculations

The migrants tend to send remittances at different frequencies. Some migrants send remittances every month, while others send remittances once or twice a year. The amount of each remittance sent likely depends on the frequency that the migrants choose to send remittances. Table 11 shows the amount and frequency of remittances.

There is a big difference between the average monthly amount sent for those who send remittances every month and those that send them every two months. The monthly average remittance amount increases even further if the migrant sends remittances every three months. This may reflect the different types of remitters. For example, those who remit every month might have family members back home who are in urgent need of money for daily living costs or debt repayments. On the other hand, those who send money every 2–3 months accumulate remittances, perhaps because they know that the cost of sending remittances is lower than sending small amounts more frequently. When the frequency of sending remittances is reduced to once every 6 months, the average monthly amount of remittances is almost the same as those sent every month. There are also migrants who do not have a set

frequency for sending money back home. These migrants often responded that they send money back home when they can afford it, or when someone from their family back home asks them to send money for financial assistance, among other reasons.

**Table 12 Mode used for sending remittances from Japan to Mongolia, percent**

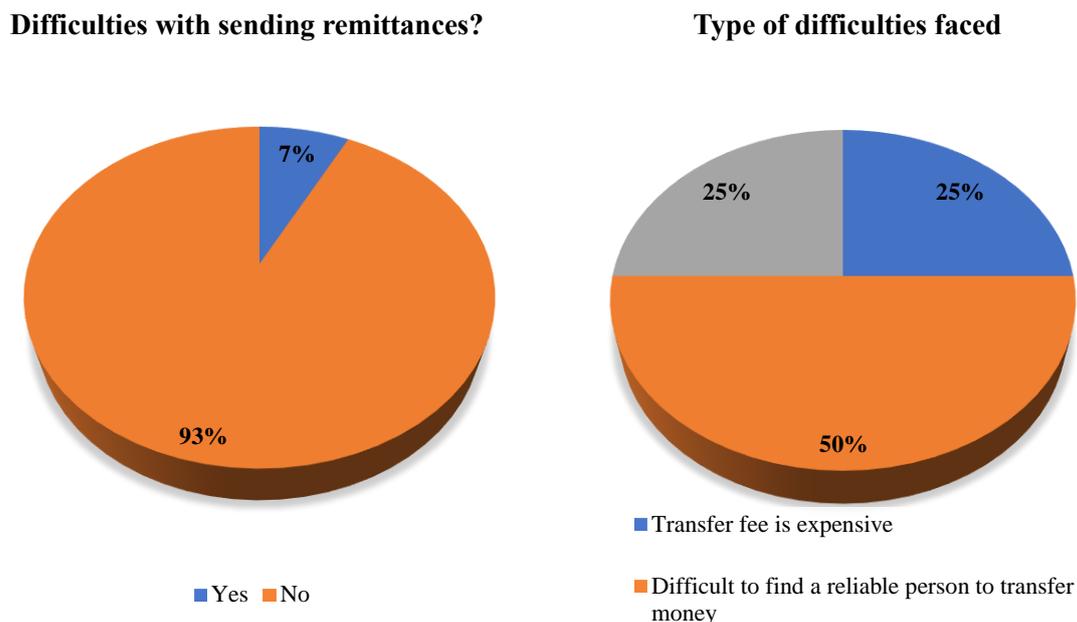
	Mean	Standard error	95% Confidence interval	
			Lower	Upper
MoneyGram	0.19	0.06	0.07	0.31
Western Union	0.24	0.08	0.09	0.39
Deposit in a shared bank account	0.02	0.02	-0.01	0.05
Send through friends/relatives	0.08	0.04	0.01	0.15
Send through a stranger	0.27	0.17	-0.06	0.60
Self-carry when returning to Mongolia	0.01	0.01	-0.01	0.02
Others	0.19	0.15	-0.11	0.48

Source: Author's calculations

Table 12 presents the mode of remittances used for sending money from Japan to Mongolia. More than 40% of senders use international money transfer services such as MoneyGram and Western Union. However, no one responded using a bank transfer, although 2% of the senders use deposits in a shared bank account as a mode of remittances. This may indicate that international bank transfers are more expensive and less time-efficient than the money-transfer services. On the other hand, more than one-third of the senders carry remittances by themselves, through friends and relatives, or even through strangers. Among these, 27% send money through strangers, something that could be extremely risky for them.

The survey also collected information on the difficulties encountered when sending money from Japan to Mongolia. Figure 10 shows the share of senders who encountered problems and the type of difficulties they faced. Among the senders, only 7% have encountered some type of difficulties when sending money from Japan to Mongolia. By type of difficulties, 50% responded that it is difficult to find a reliable person to transfer money. This could reflect that 27% of the senders send money through strangers, of which most put up an advertisement on Social Networking Sites to find a person to carry remittances for them. Besides finding a reliable person to transfer money, 25% responded that the remittance transfer fee is expensive, while the remaining 25% responded that they lose money due to exchange rate fluctuations.

**Figure 10 Difficulties encountered when sending remittances, percent**



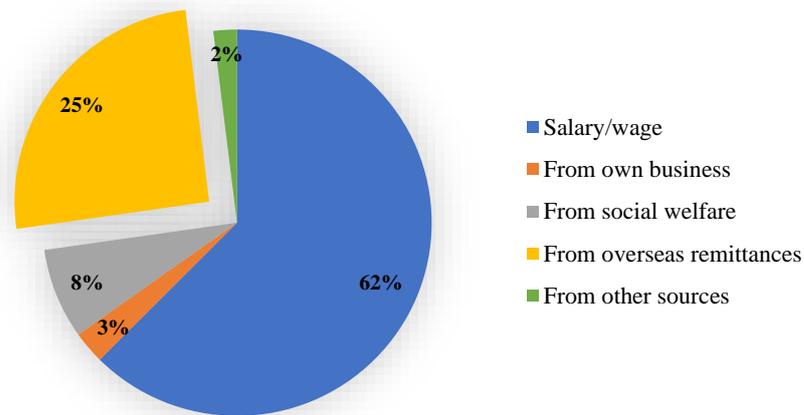
Source: Author’s calculations

#### 4.2 The use of remittances

This sub-section discusses how remittances sent from Mongolian migrants in Japan are spent by their families remaining in Mongolia. The survey results show that the remittances are an important source of income, making up a quarter of the total monthly income of the households in Mongolia (Figure 11).

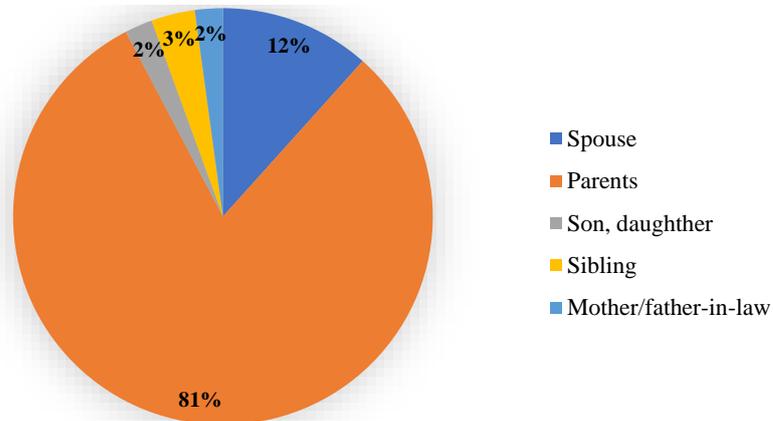
These remittances are often received by the migrants’ parents who have remained in Mongolia, as most of the migrant participants in our survey are never married (Figure 12). In the majority of cases, decisions regarding the use of the remittances are then made mutually by the senders and the receivers. Figure 13 shows that about a quarter of the decisions on using the remittances are made by the sender alone, while only 7% of the decisions are made by the receiver alone. However, it should be noted that these responses are from the perspective of the sender and the receivers might have a different perspective.

**Figure 11 Composition of household income in Mongolia**



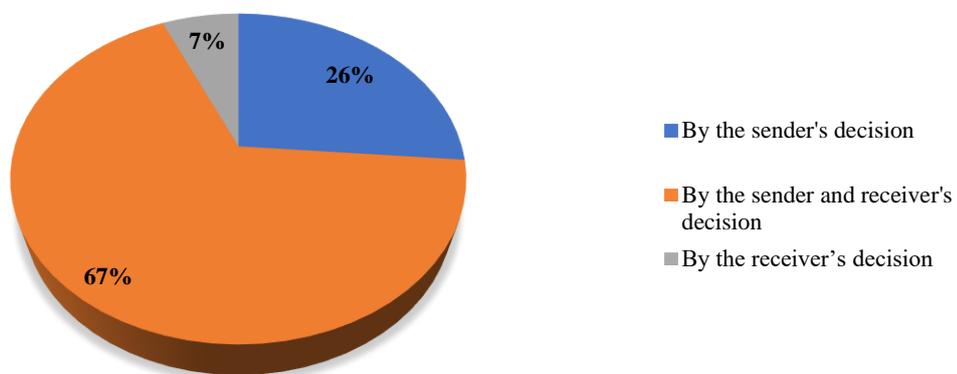
Source: Author's calculations

**Figure 12 The relationship of the remittance receivers to the senders**



Source: Author's calculations

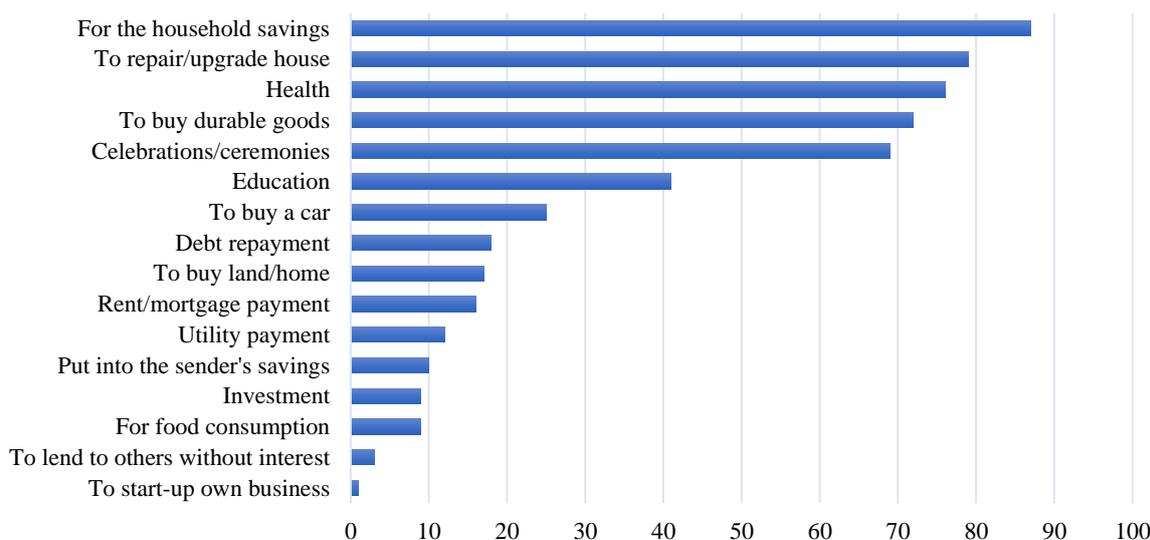
**Figure 13 The main decision-maker on how remittances are spent**



Source: Author's calculations

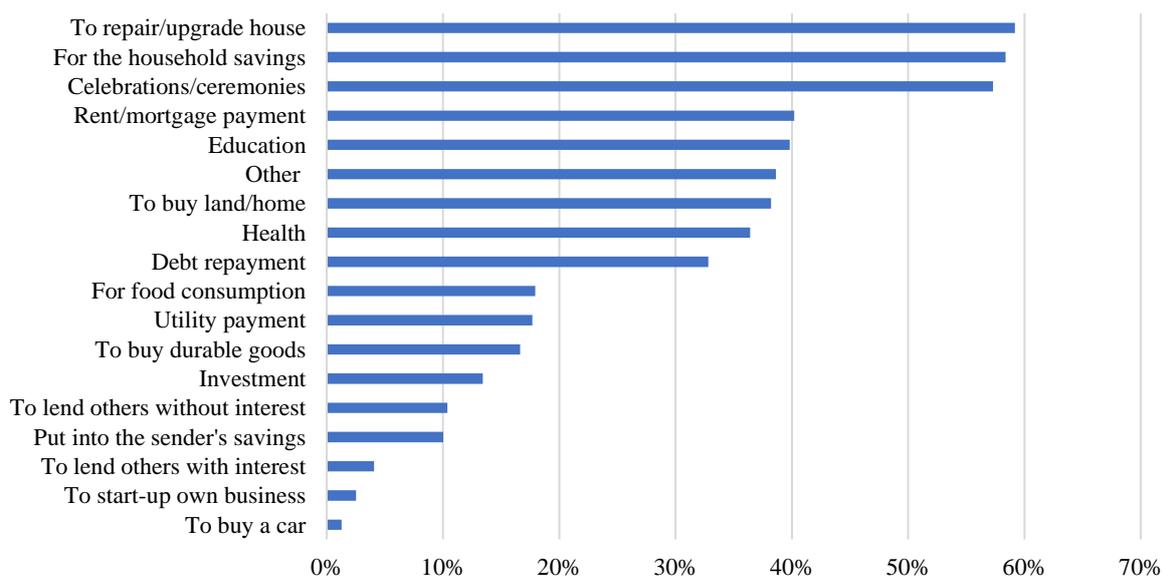
Therefore, the survey collects data on both the remittance-senders' perspectives on how the remittances are used and the actual spending by the family members in Mongolia. A simple comparison of Figures 14 and 15 reveals a notable difference between the senders' perspectives on remittance spending and the actual spending of remittances by the receivers. The migrants largely responded that the remittances are put into household savings.

**Figure 14 Migrant's perspective on the usual usage of remittances by family members in Mongolia**



Source: Author's calculations

**Figure 15 The usual usage of remittances by family members in Mongolia**



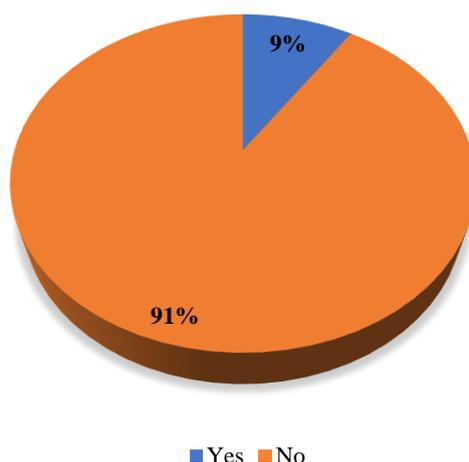
Source: Author's calculations

### 4.3 Remittances from Mongolia to Japan

Remittances do not only go one-way within a transnational household. Families in Mongolia also send remittances to their migrant household members living in Japan. Those who migrate to Japan to study rather than to work are much more likely to be dependent on their families' finance from Mongolia.

Figure 16 shows that 9% of the respondents send remittances from Mongolia to Japan, compared to the 87% of migrants in Japan who send remittances back home. These data may reflect that the majority of the survey respondents are in Japan to work or find work with the purpose of obtaining higher earnings. On the other hand, there were some people among the respondents who come to Japan as international students, who may continue to need their families' financial support.

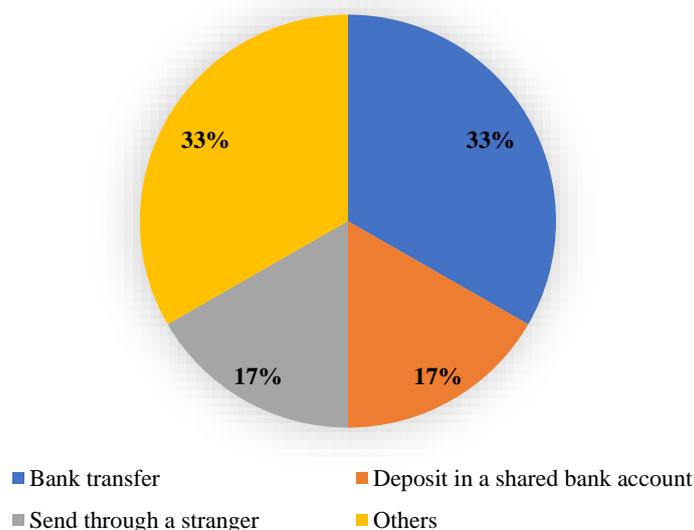
**Figure 16 Sending remittances from Mongolia to Japan, percent**



Source: Author's calculations

The remittance senders from Mongolia to Japan send money through bank transfers, unlike the remittance senders from Japan to Mongolia, who often use international money transfer services. Figure 17 shows that 33% of the senders from Mongolia use bank transfers, and another 33% use other methods to send money, which could not be clarified in the online survey. Compared to the senders from Japan, a relatively higher share of the senders from Mongolia uses deposits into a shared bank account (17% vs 2%) while a smaller group of respondents send remittances through strangers (17% vs 27%).

**Figure 17 Modes for sending remittances from Mongolia to Japan**



Source: Author's calculations

#### 4.4 In-kind remittances

This sub-section describes in-kind remittances between Mongolia and Japan. The transnational households participated in the survey send in-kind remittances both ways, Mongolia-Japan and Japan-Mongolia. Compared to the share of participants in each country who send monetary transfers, a smaller number of migrants in Japan sends in-kind remittances back home, while more family members in Mongolia send in-kind remittances to their migrant household members. In-kind remittances of goods<sup>7</sup> are often sent through the international parcel post or carried by friends or relatives.

Figure 18 shows the share of in-kind remittance senders from Japan to Mongolia and the frequency of the in-kind remittances per year. Only about 26% of the migrants send in-kind remittances to Mongolia. Of the senders, 82% send in-kind remittances twice a year and 9% send them four times a year.

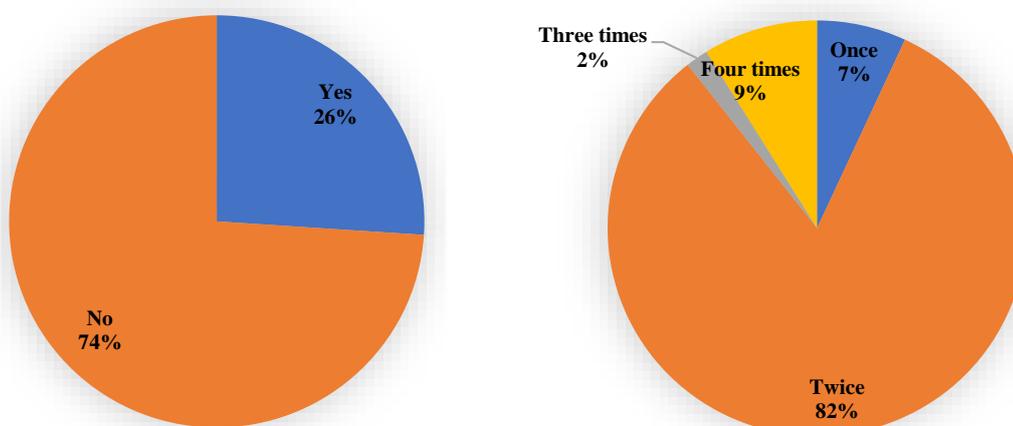
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<sup>7</sup> In-kind remittances from Japan to Mongolia often include souvenirs, wearing apparels, and household appliances, while those from Mongolia to Japan include food and wearing apparels.

**Figure 18 In-kind remittance senders from Japan to Mongolia**

**In-kind remittance senders, percent**

**Number of times in-kind remittances sent a year**



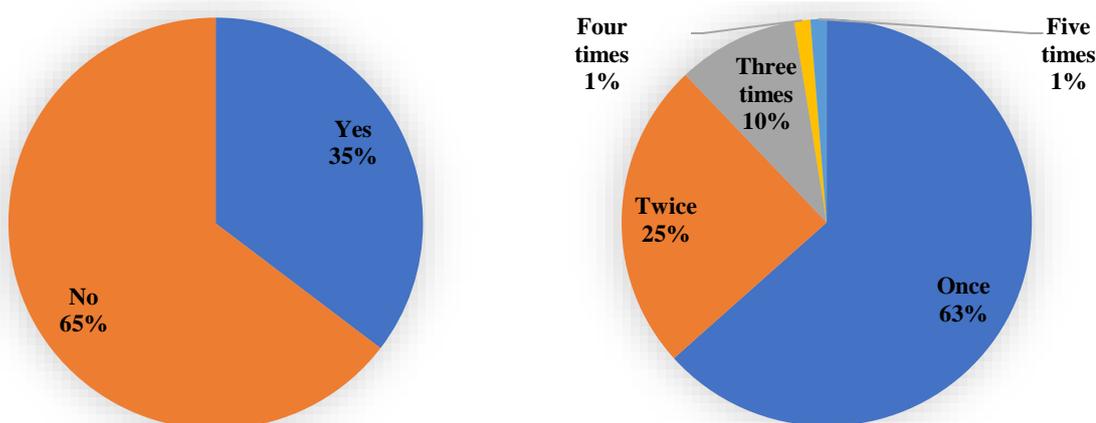
Source: Author's calculations

In comparison, 35% of the migrants' families in Mongolia send in-kind remittances to their migrant household members in Japan. The majority of the senders (63%) send in-kind remittances once a year, while a quarter of them send in-kind remittances twice a year. The senders from Mongolia ship in-kind remittances at most 5 times a year, with about 1% doing so at this rate. Figure 19 shows the share of in-kind remittance senders from Mongolia and the frequency of their remittances.

**Figure 19 In-kind remittance senders from Mongolia to Japan**

**In-kind remittance senders**

**Number of times in-kind remittances sent a year**



Source: Author's calculations

## 5. Financial literacy

This section provides the results of the survey on financial literacy, focusing on the aspects of financial knowledge, behavior, and attitudes. For each of the three aspects of financial literacy, competency scores are constructed based on the “correct” responses. The overall financial literacy score is then constructed by combining the scores on financial knowledge, behavior, and attitudes.

### 5.1 Financial knowledge

Financial knowledge is an important aspect of financial literacy for individuals. Financial knowledge helps individuals to compare financial products and services, and make sound and well-informed financial decisions. Knowing the basic concepts of finance and applying simple numeracy skills in a financial context are essential for individuals as consumers to manage their financial matters and take appropriate actions in events that may have implications for their financial wellbeing. Research shows that a higher level of financial knowledge is linked to better financial management and financial inclusion, such as participation in stock markets, planning for retirement, and less debt accumulation (Hastings, Madrian, and Skimmyhorn 2013; Mahdzan and Tabiani 2013).

To measure the financial knowledge of the survey participants, the survey adopted seven questions from the OECD/INFE 2018 toolkit. These questions, their responses, and what they measure are provided in Table 13.

**Table 13 Financial knowledge questions**

Questions	Responses	Purposes
1. Imagine you are given a gift of 100,000 MNT. But you have to wait for one year to get that money, and inflation stays at 10%. In one year’s time, will you be able to buy?	<ol style="list-style-type: none"> <li>1. more than you could today</li> <li>2. the same amount</li> <li>3. less than you could buy today</li> <li>4. it depends on the types of things that they want to buy</li> <li>5. do not know</li> </ol>	To measure the ability to understand how inflation can affect the purchasing power of money.
2. You lend 50,000 MNT to a friend one evening and he gives you 50,000 MNT back the next day. How much is the interest on this loan?	Open response	To measure the understanding of a simple interest rate without any arithmetic skills.

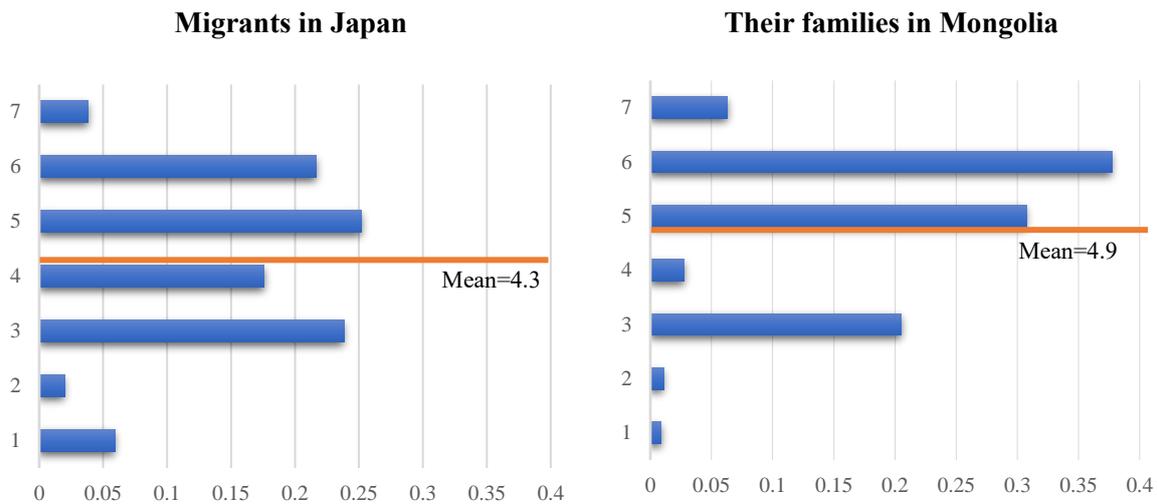
3. Suppose you put 100,000 MNT yen into a no fee, tax free savings account with a guaranteed interest rate of 2% per year. You don't make any deposits into this account and you do not withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made?	Open response	To test the ability to calculate a simple interest rate on savings.
4. How much would be in the account mentioned in the previous question at the end of 5 years?	<ol style="list-style-type: none"> <li>1. More than 110,000 MNT</li> <li>2. Exactly 110,000 MNT</li> <li>3. Less than 110,000 MNT</li> <li>4. It is impossible to tell from the information given</li> <li>5. Do not know</li> </ol>	To measure if the respondent knows compound interest rate and its benefit.
5. I would like to know whether you think the following statements are true or false.  5.1 “An investment with a high return is likely to be high risk.”	True False Do not know	To test if the respondent understands the simple relationship between risk and return.
5.2 “High inflation means that the cost of living is increasing rapidly”	True False Do not know	To test if the respondent understands the meaning of the term 'inflation'.
5.3 “It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares.”	True False Do not know	To measure if the respondent understands the importance of diversification.

Source: OECD (2018)

The financial knowledge score is calculated by counting the number of correct responses to the questions in Table 13. Each correct response gets a score of 1, and therefore, the total score of the financial knowledge component is 7. Figure 20 presents the mean financial knowledge score and its distribution for the migrants and their families, respectively.

The mean financial knowledge score for the migrants is 4.3, while that for their families in Mongolia is 4.9. Although the migrants have, in general, a higher level of education than their family members in Mongolia, their financial knowledge is somehow lower than that of their family members. Almost 75% of participants from Mongolia scored above 5, compared to only half of the migrants. About 6% of family members earned a perfect score in financial knowledge competency, while only 3% of migrants got full scores of 7.

**Figure 20 Financial knowledge mean scores and distribution**



Source: Author's calculations

Table 14 compares the share of correct responses by each component of financial literacy for migrants and their families. A simple comparison reveals that the family members in Mongolia scored higher in all components except for the interest rate compounding than the migrants. Both migrants and their families have a good understanding of the time value of money, simple interest payments and the relationship between the risk and return. However, their understanding of compound interest rates, benefits of diversification, and definition of interest is somehow lower.

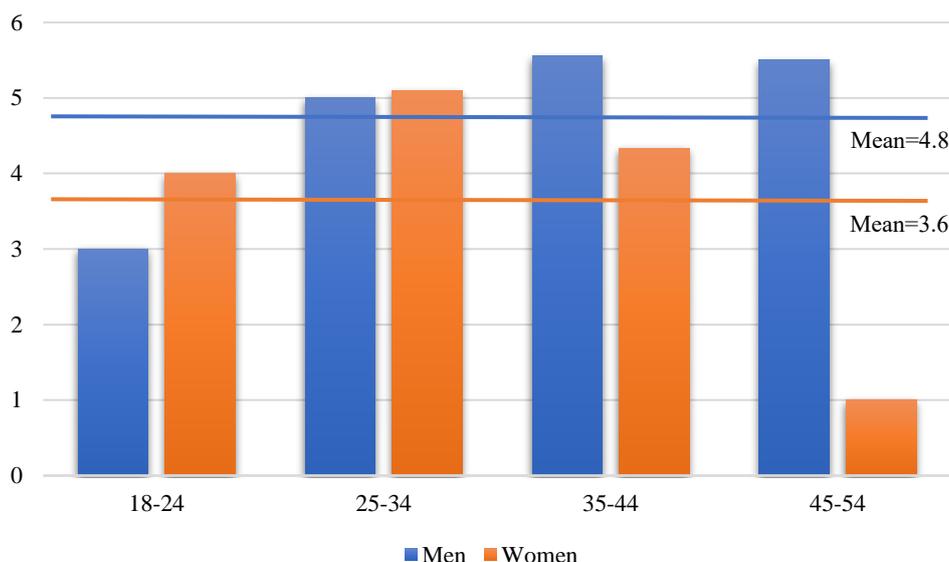
**Table 14 Financial knowledge score components, percent of correct responses**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>Migrants in Japan</b>				
Time value of money	0.84	0.06	0.72	0.96
Interest paid on time	0.76	0.15	0.46	1.05
Calculation of interest plus principal	0.70	0.14	0.42	0.98
Compounding over 5 years	0.48	0.13	0.21	0.74
Risk and return	0.75	0.13	0.49	1.00
Definition of inflation	0.53	0.13	0.26	0.79
Diversification	0.30	0.08	0.13	0.46
<b>Families in Mongolia</b>				
Time value of money	0.90	0.04	0.82	0.99
Interest paid on time	1.00	0.00	0.99	1.00
Calculation of interest plus principal	0.79	0.13	0.54	1.05
Compounding over 5 years	0.33	0.13	0.08	0.58
Risk and return	0.77	0.13	0.51	1.03
Definition of inflation	0.75	0.13	0.50	1.00
Diversification	0.45	0.13	0.20	0.71

Source: Author's calculations

When comparing across age and gender of the migrants, men generally scored higher than women, with the exception of younger age groups up to 34 years old. Figure 21 shows the migrants’ mean financial knowledge scores by age and gender. The financial knowledge of women over the age of 35 is much lower than their male counterparts. This is even prominent for the 45–54 age group. The mean financial knowledge score for men is 4.8, compared to 3.6 for women.

**Figure 21 Migrants’ financial knowledge scores by age and gender**

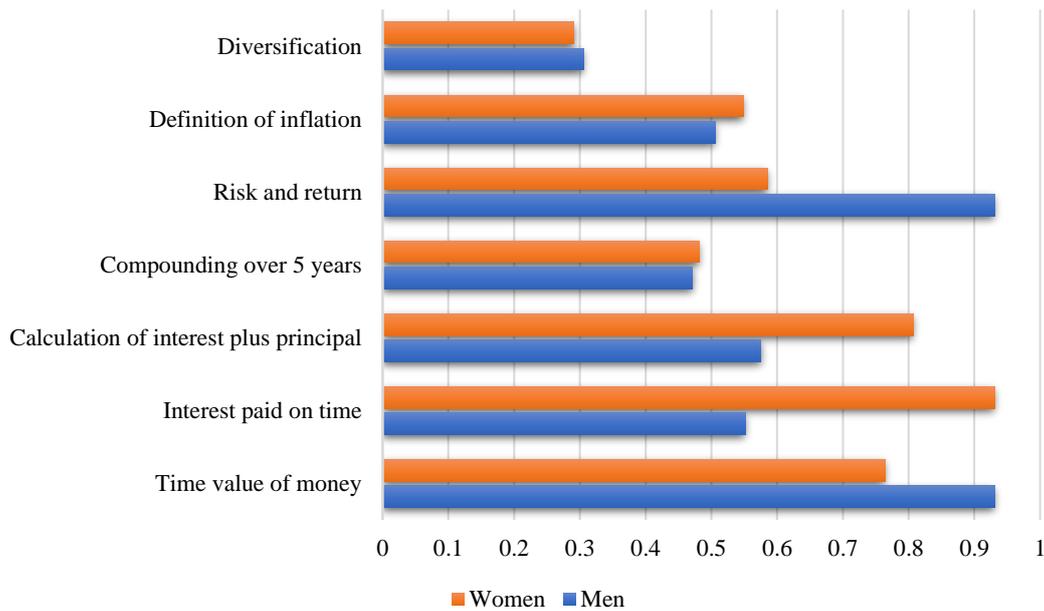


Source: Author’s calculations

Looking at the financial knowledge score components by migrants’ gender, men scored higher on the time value of money, the link between risk and return, and diversification, while women scored higher on calculating simple and compound interest payments, calculating interest plus principal, and the definition of inflation. Figure 22 shows the components of the financial score for migrants by gender.

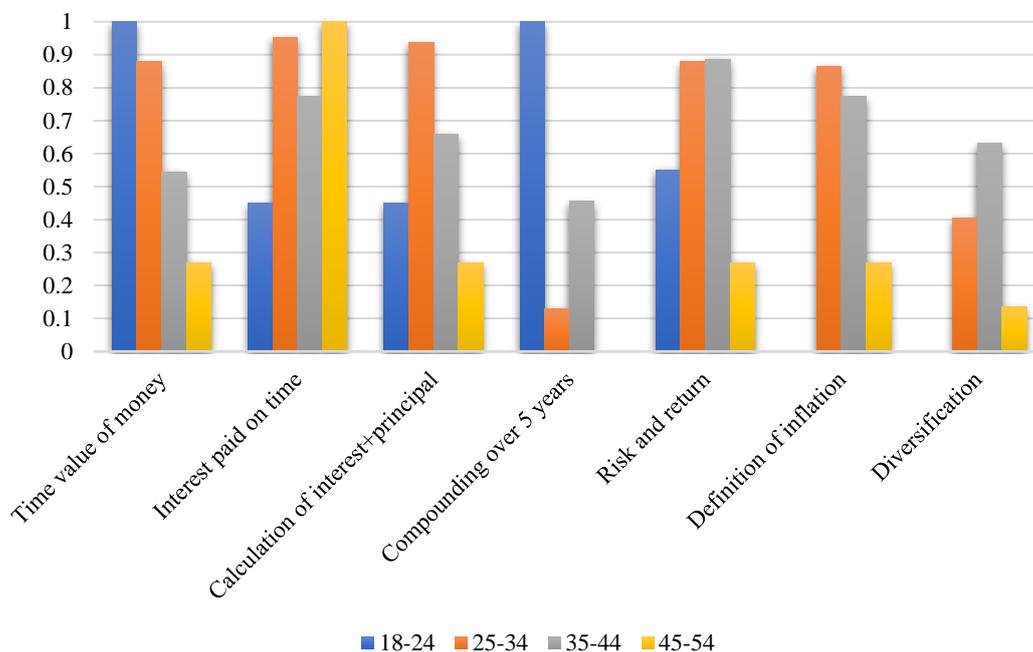
Figure 23 displays the financial knowledge score components by migrants’ age. The results show that younger migrants have a better understanding of the time value of money than their older counterparts. The youngest migrants of ages 18–24 are best at calculating compound interest, with all participants from the age group correctly calculated the compound interest rate over five years. On the other hand, the oldest migrants of ages 45–54 are worst at calculating the compound rate, with no one among this group calculating it correctly. While the youngest migrants are good at compound interest calculation, they do not do well on calculations of simple interest paid on time and payment of interest plus principal. For these simple interest calculations, migrants of ages 25–34 do better.

**Figure 22 Migrants' financial knowledge by gender, percent of correct responses**



Source: Author's calculations

**Figure 23 Migrants' financial knowledge by age group, percent of correct responses**



Source: Author's calculations

Generally, migrants of ages 25–34 scored relatively evenly on all components of the financial knowledge score, except for interest rate compounding and diversification. Migrants of ages 25–34 and 35–44 are the groups that provided the most correct responses on risk and

return, definition of inflation, and diversification. By contrast, the youngest and the oldest groups do not have a solid understanding of these components. The youngest migrants, in particular, do not understand what inflation is or how diversification can be beneficial in avoiding risks, as none of them provided correct responses to these questions.

The results show notable differences in financial knowledge scores between migrants and their families. Even among the migrants, there are differences by age and gender. In order to understand these differences and their reasons, more in-depth studies are necessary. Our sample survey is by no means representative of the whole Mongolian migrant population in Japan nor their families in Mongolia, although we attempt to correct the sampling bias by using post-stratification weighting. Therefore, it should be noted that more surveys and empirical studies are needed to understand further about financial knowledge and financial literacy as a whole.

## 5.2 Financial behavior

The second aspect of financial literacy is financial behavior, which measures how people behave in financially literate ways to shape their financial wellbeing. Our survey incorporates nine questions on financial behavior adopted from the OECD/INFE 2018 toolkit. These questions cover various characteristics of financial behavior, such as budgeting, paying bills on time, thinking before purchases, purposeful savings, and avoiding debts. Details of the questions are provided in Table 15.

**Table 15 Financial behavior questions**

Questions	Response options	Purposes
1. Who is responsible for making day-to-day decisions about money in your household?	<ol style="list-style-type: none"> <li>1. I make these decisions by myself</li> <li>2. I make these decisions with other family members</li> <li>3. A household member alone makes the decisions</li> <li>4. Other household members other than me make these decisions</li> <li>5. A non-family member makes these decisions</li> </ol>	Budgeting
2. Does your household have a budget plan?	Yes/No	Budgeting
3. Did your household save money in any form in the last 12 months?	<ol style="list-style-type: none"> <li>1. Saving cash at home</li> <li>2. Building up a balance of money in a bank account</li> <li>3. Paying money into a savings account</li> <li>4. Saving money in a non-banking financial institution</li> <li>5. Saving money in credit or savings union</li> <li>6. Buying financial investment products such as bonds, investment trusts, stocks or shares</li> <li>7. Saving in other ways, including remittances, buying livestock, gold, or property</li> <li>8. Saving in other forms not classified above</li> <li>9. Has not been actively saving</li> </ol>	Active saving

4. Would you personally agree with the following statement? “Before I buy something, I carefully consider whether I can afford it.”	Completely agree (1) to Completely disagree (5)	Thinking before purchasing
5. Would you personally agree with the following statement? “I pay my bills on time.”	Completely agree (1) to Completely disagree (5)	Paying bills on time
6. Would you personally agree with the following statement? “I keep a close personal watch on my financial affairs.”	Completely agree (1) to Completely disagree (5)	Keeping watch of financial affairs
7. Would you personally agree with the following statement? “I set long-term financial goals and strive to achieve them.”	Completely agree (1) to Completely disagree (5)	Setting and achieving long-term goals
8. How did you deal with a situation when your income did not cover your living cost last time?	Multiple responses allowed	Avoid borrowing to make ends meet
9. Which of the following statements best describes how you made your choice?	1. I considered several options from different companies before making my decision 2. I considered the various options from one company 1. I did not consider any other options at all 2. I looked around but there were no other options to consider 3. Other	Choosing products
10. Which sources of information do you feel most influenced your decision?	Product-specific information, best-buy guidance, general advice, media coverage, adverts, other	Choosing products

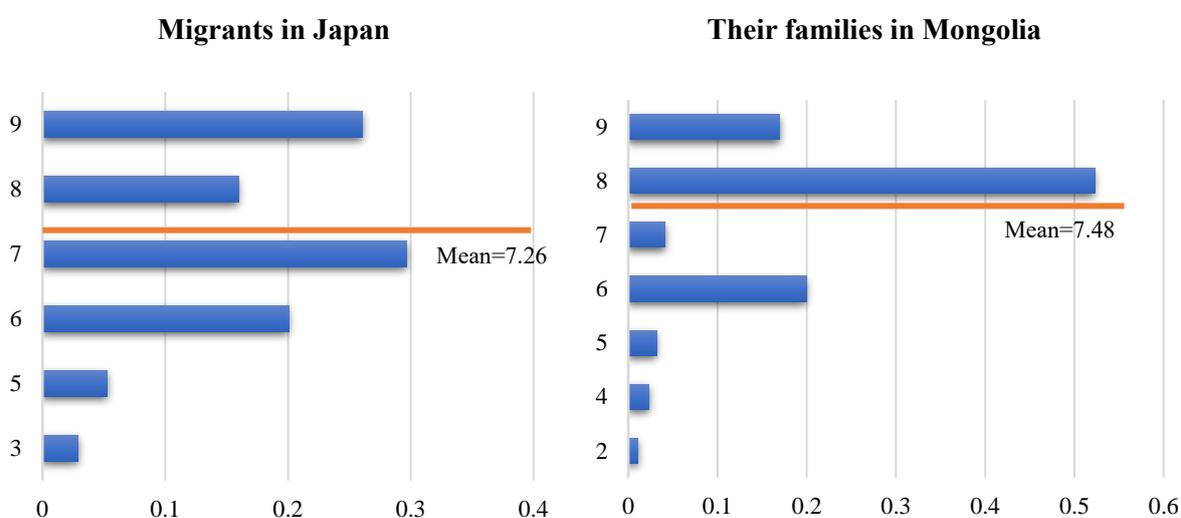
Source: OECD (2018)

The financial behavior score is constructed based on the positive behaviors exhibited in the above questions. The score ranges from 0 to 9, with 9 being the maximum. Figure 24 presents the mean financial behavior scores for migrants and their families, respectively.

The mean financial behavior score for the migrants is 7.26, while that for the family

members is 7.48. Almost 70% of the family members scored 8 and higher. On the other hand, the share of migrants who scored 8 and higher was only about 42%. Like the financial knowledge score, the family members earn higher financial behavior scores, on average. As with the financial knowledge scores, it is difficult to explain the reasons for the differences between the migrants and their family members who remain behind with a simple descriptive analysis. However, it is useful to see the differences across different components of the financial behavior score to highlight the weaknesses and strengths of the migrants and their families, respectively.

**Figure 24 Financial behavior mean scores and distribution**



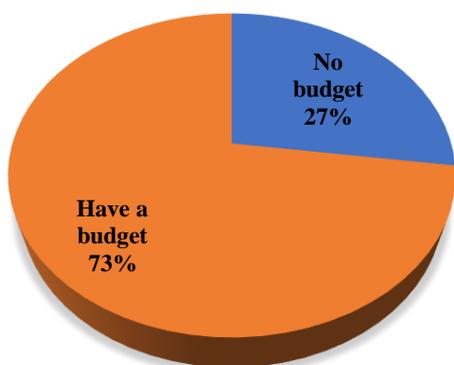
Source: Author’s calculations

Figure 25 shows household or personal budgeting for migrants and their families, respectively. Budgeting is widely considered as a useful tool to manage household or personal finance and be financially responsible. The survey results show that 73% of the migrants in Japan have a budget, while 57% of their families in Mongolia have a household budget. The migrants, as they are away from their families and support network, might find it useful to keep track of their income and expenses more than their families who remain behind.

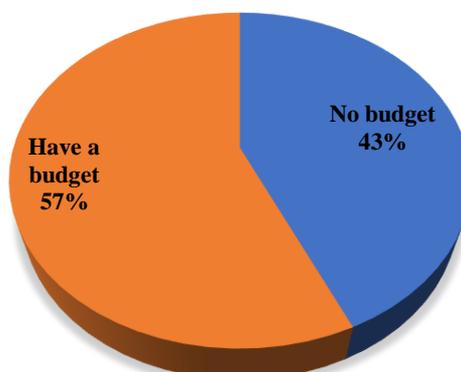
Another important financial behavior is active saving behavior, which helps individuals and households to smooth their income and expenditure flows. The active saving behavior also helps individuals to be more resilient to financial shocks as it helps them smooth their income. The questions directed to capture active saving behaviors are intended to capture behaviors to actively save, rather than to inactively save, such as keeping a monthly balance in a current account. Active saving involves behavior or processes to seek out suitable methods to save. Figure 26 displays the active saving behavior of migrants and their families, respectively.

**Figure 25 Household or personal budgeting**

**Migrants in Japan**



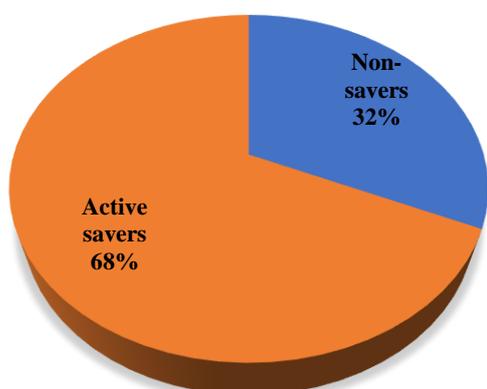
**Their families in Mongolia**



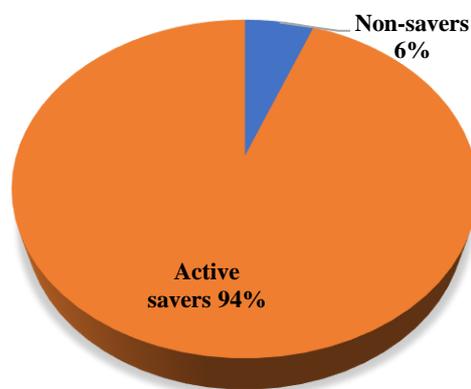
Source: Author's calculations

**Figure 26 Active saving**

**Migrants in Japan**



**Their families in Mongolia**



Source: Author's calculations

The results show that the families in Mongolia are much more active savers than the migrants. Of the families remaining behind, 94% had actively saved in the previous 12 months, while 68% of the migrants in Japan actively saved in the same period.

**Table 16 Keeping watch of financial affairs and striving to achieve long-term goals, percent of positive behavior responses**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>Migrants in Japan</b>				
Carefully consider before purchase	0.97	0.02	0.93	1.01
Pay bills on time	0.98	0.02	0.94	1.02
Closely watch personal financial affairs	0.70	0.13	0.45	0.95
Have long-term financial goals	0.73	0.13	0.48	0.98
<b>Their families in Mongolia</b>				
Carefully consider before purchase	0.97	0.01	0.95	1.00
Pay bills on time	0.99	0.01	0.97	1.01
Closely watch personal financial affairs	0.71	0.13	0.46	0.96
Have long-term financial goals	0.91	0.04	0.82	1.00

Source: Author's calculations

Other behaviors that help people to be resilient to financial shocks include making considered purchases, paying bills on time, keeping watch on personal financial affairs, and having and achieving long-term financial goals. To be useful, these behaviors need to be repeated and habitual. Table 16 presents the shares of responses that agree with these behavioral questions for the migrants and their families, respectively.

Both migrants and their families have similar behaviors toward consideration before making a purchase, paying bills on time, and keeping watch on financial affairs. Both groups appear to have highly positive behavior toward considered purchases and paying bills on time. The difference comes between the two groups when it is about having long-term financial goals. More than 90% of the family members responded they have long-term goals, while only 73% of migrants responded so.

**Table 17 Making ends meet, percent of responses**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>Migrants</b>				
Income did not always cover their living costs	0.12	0.05	0.02	0.21
Of which: Borrowed to make ends meet	0.11	0.04	0.02	0.20
Income always covered their living costs	0.88	0.05	0.79	0.98
<b>Their families in Mongolia</b>				
Income did not always cover their living costs	0.30	0.13	0.05	0.55
Of which: Borrowed to make ends meet	0.27	0.13	0.02	0.52
Income always covered their living costs	0.70	0.13	0.45	0.95

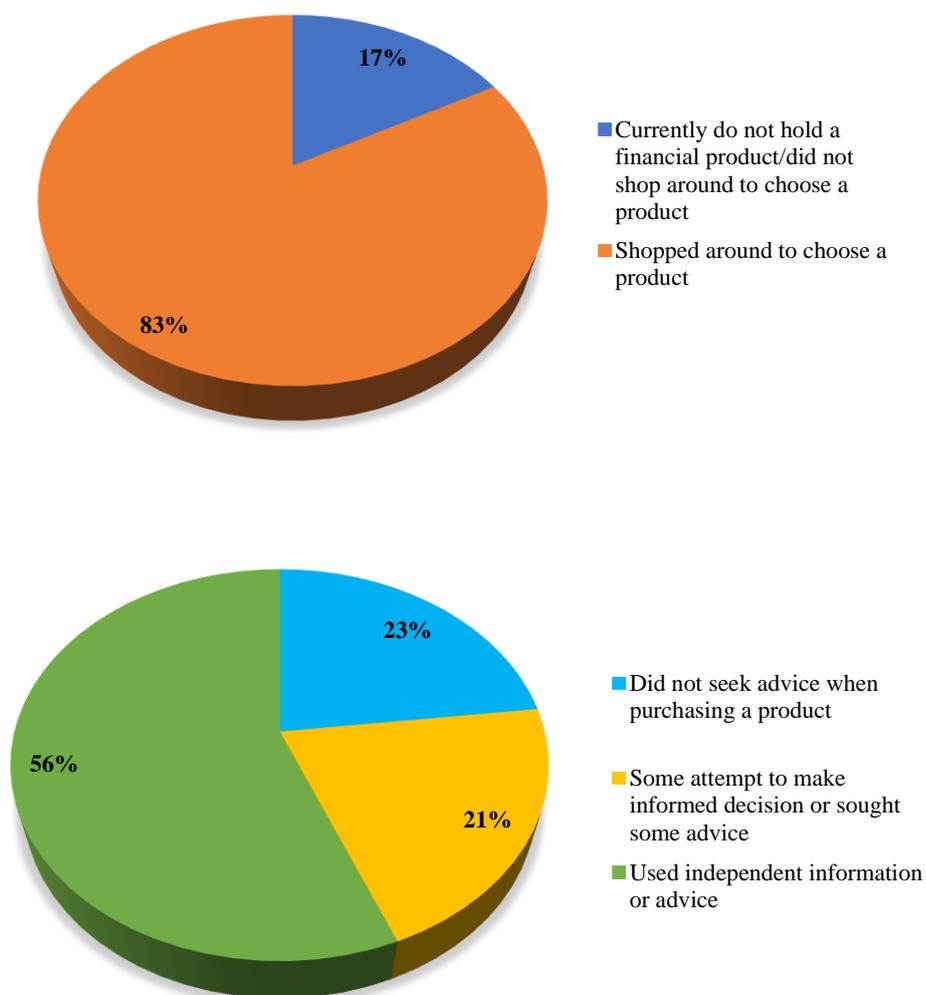
Source: Author's calculations

Another behavior that helps people to be more resilient to financial shocks is avoiding

debts when trying to make ends meet. Table 17 reports the share of respondents who faced a lack of income in the past month and that of respondents who borrowed money to cover the expenses for migrants and their families, respectively.

The results show that the share of migrants who responded that their income always covered their living costs was 88%, compared with only 70% for the families in Mongolia. Of those whose income did not always cover their living costs, almost all migrants and their families borrowed to make ends meet. Although 68% of migrants and 94% of the families responded that they are active savers, having a high borrowing rate in the face of an income shortfall could indicate that their savings do not cover income shocks or they have already used up their savings to cover previous shortfalls among those migrants and families who borrowed to make ends meet.

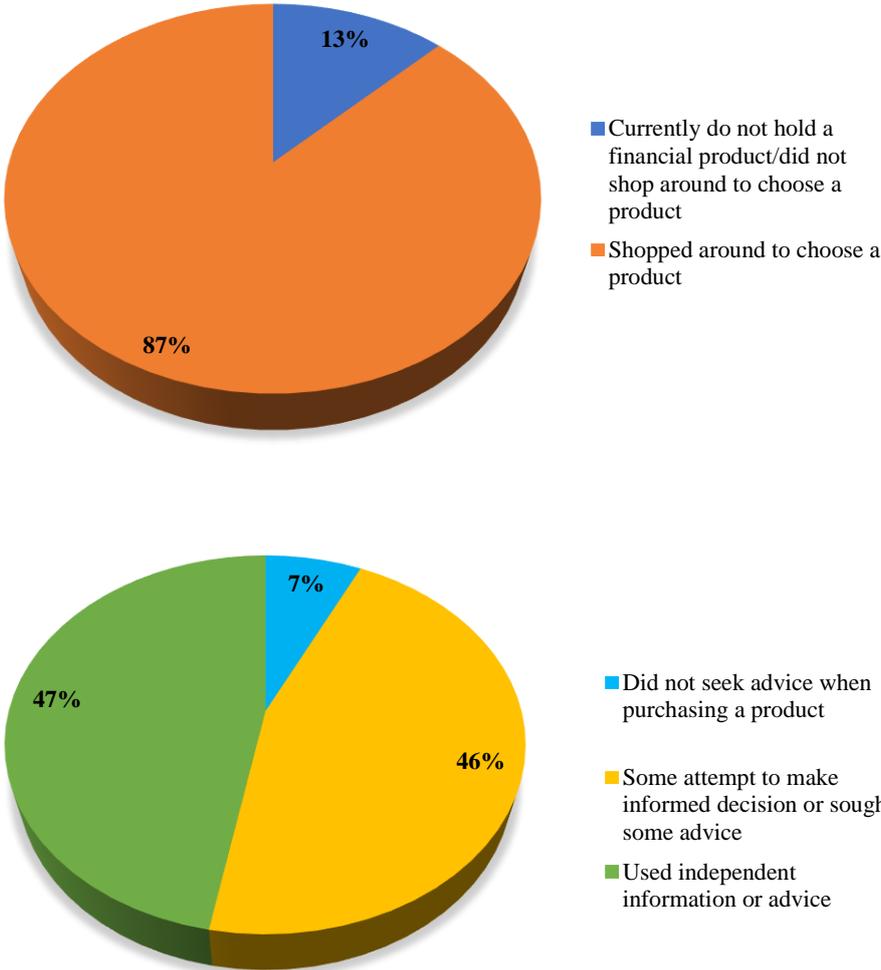
**Figure 27 Migrants choosing financial products, percent of responses**



Source: Author's calculations

The last part of the financial behavior score is about shopping around to choose a financial product based on appropriate information and advice obtained. Figure 27 displays the results for migrants. The majority of migrants (83%) shopped around to choose a financial product, while only 17% currently do not hold a financial product or did not shop around in the past two years. Of those migrants who shopped around to choose a product, more than half sought out professional advice, 21% made some attempt to seek information, and 23% did not seek out advice or information when making decisions on financial product purchases.

**Figure 28 Families choosing financial products, percent of responses**



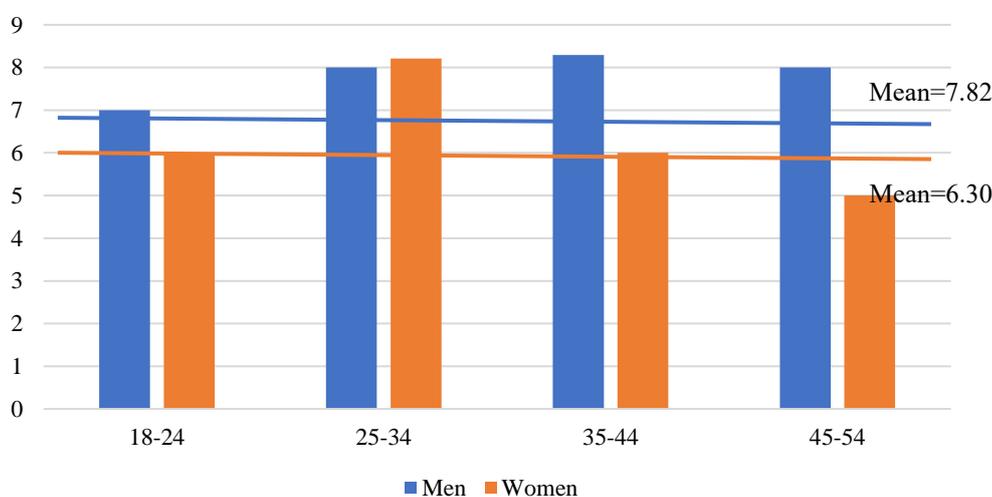
Source: Author’s calculations

Figure 28 shows the family members’ product-choosing behavior. The pattern is similar to that of the migrants. Like the migrants, the majority (87%) of family members

shopped around to choose financial products. Of them, 47% sought out independent information and advice, 46% made some attempt to seek information, and 7% did not seek out any information or advice when making decisions to purchase financial products. The family members are more likely to make some kind of attempt to make informed decisions than the migrants in Japan. In other words, a relatively smaller share of the family members did not seek out information compared to the migrants when choosing financial products.

While there are some differences in financial behaviors between the migrants and their families remaining behind, there could also be differences in behavior among migrants themselves, depending on their age and gender. Therefore, we calculated the financial behavior scores for the migrants by their age and gender. Figure 29 presents the financial behavior scores for the migrants by age and gender. The results show that, on average, men have relatively more positive financial behavior than women. The mean financial behavior score for men is 7.82, while that for women is 6.3. Men in the 35–44 age group scored the highest financial behavior score (8.3), followed by women in the 25–34 age group, who scored 8.2. The other age groups for women scored notably lower than women in the 25–34 age group. In particular, the 45–54 age group scored the lowest at only 5 out of the total 9 points. Men outperformed in all age groups except for ages 25–34.

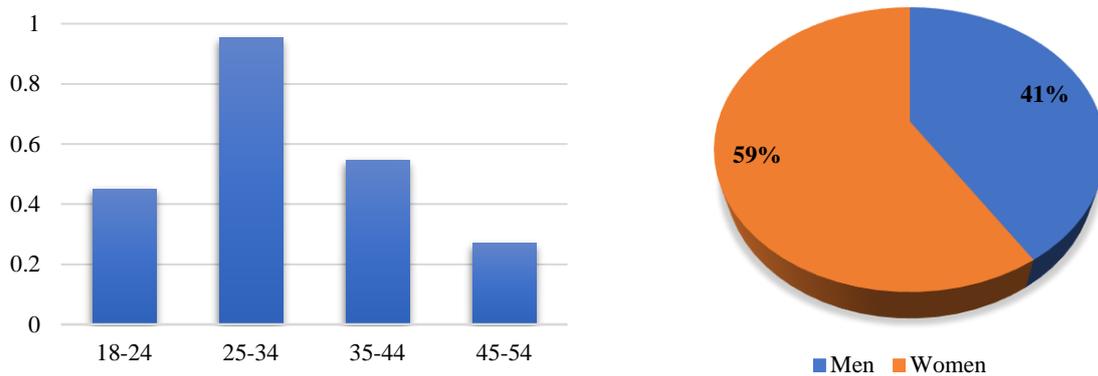
**Figure 29 Migrants' financial behavior scores, by age and gender**



Source: Author's calculations

Figure 30 shows active saving by migrant age and gender. The results indicate that women are more active savers than men. By age group, those between ages 25–34 are the most active savers, followed by ages 35–44. The youngest and oldest age groups are the least active savers – the 45–54 age group saves the least, with only 27% of them actively saving.

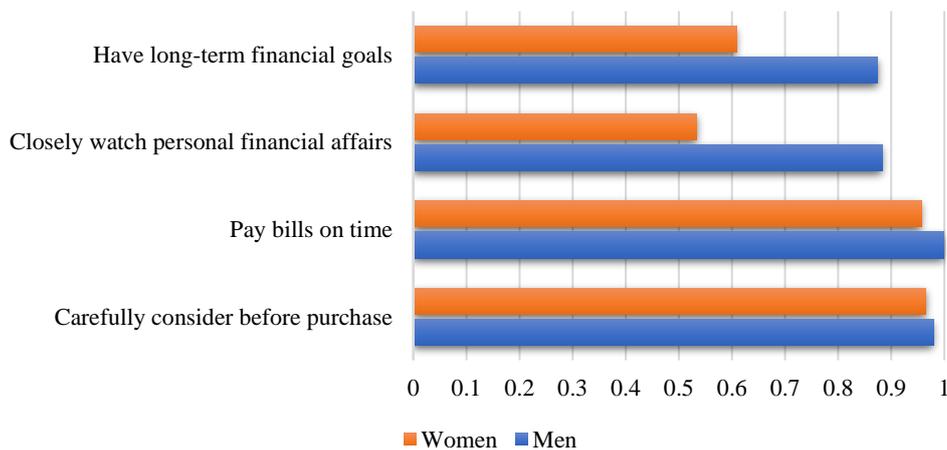
**Figure 30 Active saving by migrant age and gender**



Source: Author's calculations

Financial behavior that helps people to be resilient to financial shocks is presented in Figure 31 by age and gender. For all four questions considered in Figure 31, men show more positive traits than women. Both men and women score highly on paying bills on time and making considered purchases. In particular, men always (100%) pay bills on time. The difference between men and women is more evident in terms of having long-term goals and closely watching financial affairs, where men outperform women.

**Figure 31 Watching over financial affairs and setting long-term financial goals, by migrants' gender**

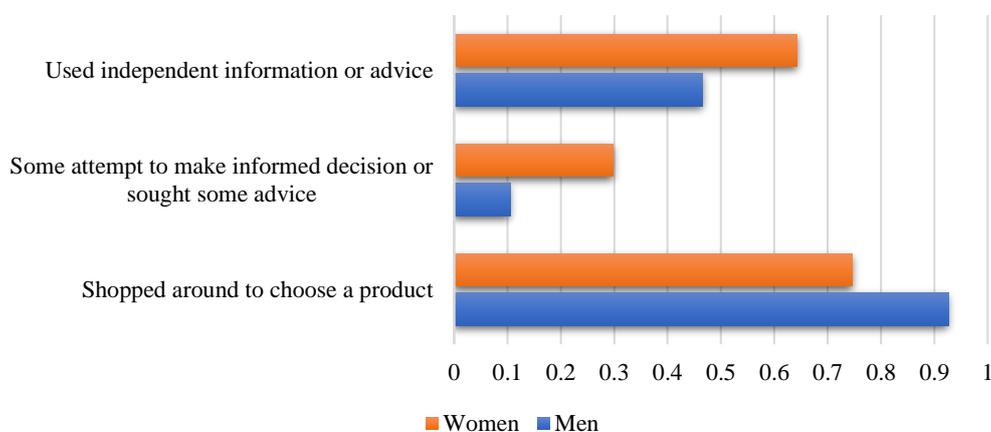


Source: Author's calculations

Figure 32 shows product choice using informed decision-making by gender of migrants. The results show that men are more likely to shop around to choose a financial product than women. On the other hand, if women shopped around to look for financial products, they are more likely to seek out professional advice and information before making

decisions than men.

**Figure 32 Migrants choosing financial products, by gender**



Source: Author’s calculations

### 5.3 Financial attitudes

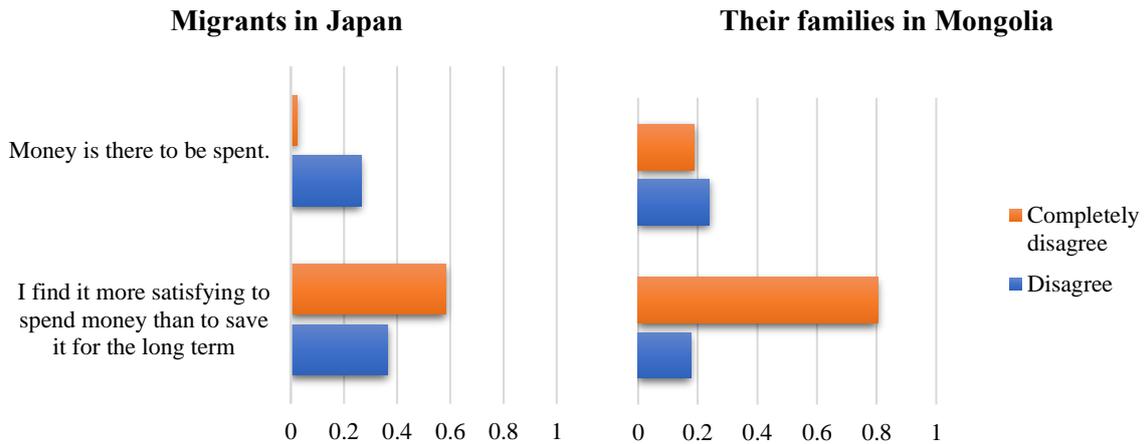
The third aspect of financial literacy is financial attitudes, which are personal inclinations towards long-term financial matters. The OECD/INFE toolkit includes three statements to measure the respondents’ attitudes towards money and planning for the future. The survey adopts two of these questions to construct the financial attitude score. Table 18 describes these questions. These statements focus on short-term preferences for spending money today rather than in the future. These types of short-term preferences for money are detrimental to financial resilience and wellbeing. The financial attitude score is defined by averaging the response scales (minimum 1 to maximum 5) and measuring the degree to which the respondents disagree with the statements. The highest score for financial attitude is therefore 5 and the lowest score is 1.

**Table 18 Financial attitude questions**

Questions	Response options	Purposes
Would you personally agree with the following statement? “I find it more satisfying to spend money than to save it for the long term”	Completely agree (1) to Completely disagree (5)	Preferences for short term (agree) or long-term (disagree) saving and financial matters
“Money is there to be spent.”	Completely agree (1) to Completely disagree (5)	

Source: OECD (2018)

**Figure 33 Disagreements with short-term financial statements, percent of responses**



Source: Author’s calculations

On average, the migrants’ mean financial attitude score is 3.81, while that of the families is 4.04. The family members in Mongolia have more positive attitudes toward long-term financial wellbeing compared to the migrants in Japan. Figure 33 displays the share of disagreements with the short-term financial statements for the migrants and the families, respectively.

For both statements, the shares of family members who disagree and completely disagree are higher than the migrants. Almost 80% of the family members strongly disagree with the statement “I find it more satisfying to spend money than to save it for the long term,” compared with about 60% of the migrants. For this statement, the joint responses of those who completely disagree and disagree account for 95% of the responses of the migrants and 98% of the family members. For the statement “Money is there to be spent,” the joint responses account for 29% of the migrants and 43% for their families.

Furthermore, the results are calculated by migrants’ gender. Figure 34 shows the financial attitude scores for migrants by gender. The results show that women have a more positive attitude towards long-term financial matters than men.

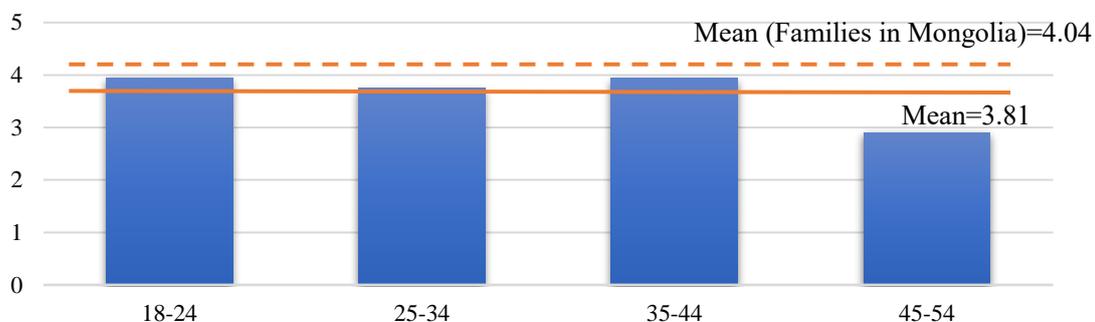
**Figure 34 Migrants’ financial attitude scores, by gender**



Source: Author’s calculations

When looking at the financial attitudes by age, the youngest migrants have the highest financial attitude score, followed by those aged 35–44. The oldest age group scored the lowest financial attitude score. Figure 35 shows the financial attitude scores by gender.

**Figure 35 Migrants’ financial attitude score, by age**

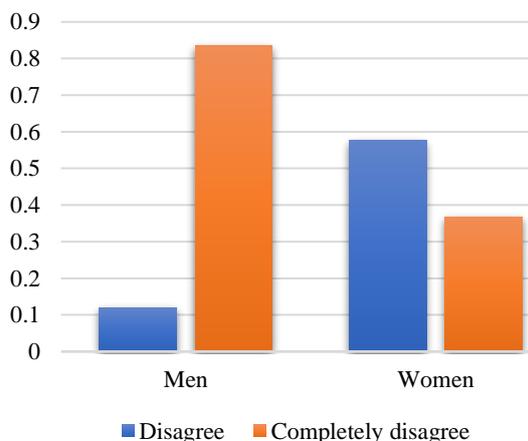


Source: Author’s calculations

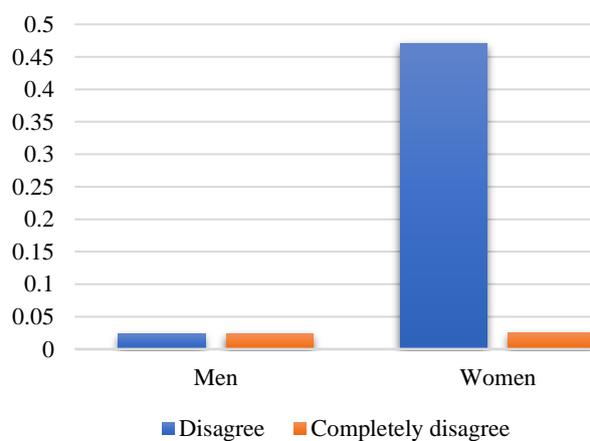
Figure 36 presents the results on respondents’ disagreements with the short-term financial statements for migrants by their gender. For the statement “I find it more satisfying to spend money than to save it for the long term,” the combined rate of disagree and completely disagree responses was 95% and 94% for men and women, respectively. However, men tended to strongly disagree with the statement at a higher rate than women. For the statement “Money is there to be spent,” the combined disagreement rate for men was less than 5%, while that for women was almost 50%. Women tended to disagree with the statement more than men.

**Figure 36 Short-term financial statements, by migrants' gender**

**I find it more satisfying to spend money than to save it for the long term**



**Money is there to be spent**



Source: Author’s calculations

## 5.4 Overall financial literacy scores

Financial literacy is the combination of financial knowledge, behaviors, and attitudes. The overall financial literacy score is defined as the sum of the financial knowledge, behavior, and attitude scores. In this research, the maximum score for financial literacy is 21 (the sum of the maximum of 7 for knowledge, 9 for behavior, and 5 for attitudes), and the minimum is 0.

Table 19 presents the overall financial literacy scores for migrants and their families, respectively. The results show that the overall financial literacy score for migrants is 15.4 and that for the family members is 16.5. The family members remaining behind consistently outperform the migrants in all aspects of financial literacy. In percentage terms, the migrants' overall financial literacy is 73% and their families' is 78%.

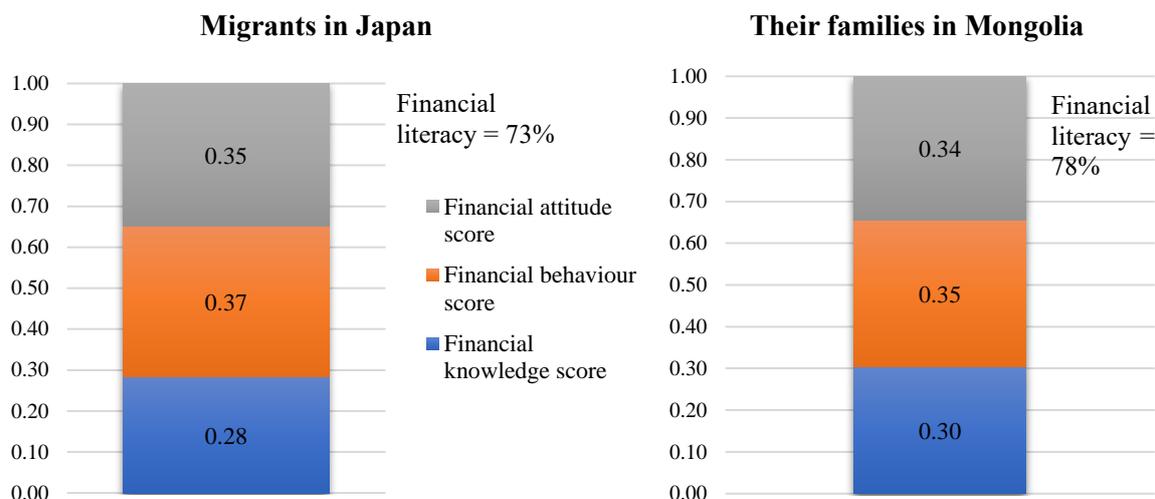
**Table 19 Overall financial literacy scores**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>Migrants in Japan</b>				
Financial knowledge	4.3	0.3	3.7	4.9
Financial behavior	7.3	0.2	6.8	7.7
Financial attitudes	3.8	0.1	3.6	4.1
Overall financial literacy	15.4	0.5	14.5	16.4
<b>Families in Mongolia</b>				
Financial knowledge	5.0	0.4	4.3	5.7
Financial behavior	7.5	0.3	6.9	8.0
Financial attitudes	4.0	0.2	3.7	4.4
Overall financial literacy	16.5	0.5	15.6	17.5

Source: Author's calculations

Figure 37 displays the contribution of each financial aspect to the overall financial literacy for the migrants and their families, respectively. For both migrants and their families, financial behavior is the largest contributing component to their financial literacy. Having financial attitudes toward long-term financial wellbeing was also found to contribute more than its fair share. The contribution of financial knowledge is relatively lower than its fair share. For the migrants especially, the overall financial literacy score can be improved by gaining more financial knowledge.

**Figure 37 Contribution of financial literacy components to the overall financial literacy score**



Source: Author's calculations

Table 20 presents the financial literacy score for the migrants by age and gender. Men have a 2 percentage point higher financial literacy score on average. By age group, the migrants of ages 25–34 have the highest financial literacy score, followed by those of ages 35–44. The youngest and oldest groups scored lower than the 25–34 and 35–44 age groups. Particularly, the oldest group has obtained only 52% for the overall financial literacy score, which is almost 30 percentage points lower than that of the 25–34 age group.

**Table 20 Migrants' financial literacy score (percent) by age and gender**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>By gender</b>				
Men	74.43	4.37	65.78	83.08
Women	72.51	2.30	67.95	77.08
<b>By age</b>				
18–24	66.43	1.67	63.11	69.74
25–34	80.52	1.47	77.61	83.43
35–44	73.28	2.98	67.37	79.19
45–54	52.05	10.41	31.43	72.67
Average	73.40	2.27	68.89	77.90

Source: Author's calculations

## 6. Financial inclusion

Financial inclusion refers to being able to access and use formal financial products and services. Atkinson and Messy (2013) define financial inclusion broadly as a process of promoting affordable, timely, and adequate access to financial products and services by all segments of the society, and expanding the access by supporting financial wellbeing through financial awareness and education. Financial inclusion is recognized as vital not only to the empowerment of individuals but for the overall stability of the financial system.

This section develops five indicators that gauge the extent to which people are using and holding financial products and services. Additionally, this section looks at people's awareness of financial products and services. Questions used to create these indicators are adopted from the OECD/INFE 2018 toolkit and modified to suit their use with the financial markets in Japan and Mongolia.

In terms of product holding, indicators on financial products and services can be grouped into the following five categories:

- i. Payment products (current account, debit card, or mobile money);
- ii. Credit products (credit cards, mortgage, and other loans and credits)
- iii. Insurance products (any insurance products)
- iv. Saving products (savings or retirement products)
- v. Investment products (stocks and shares).

**Table 21 Financial product holdings, percent of respondents**

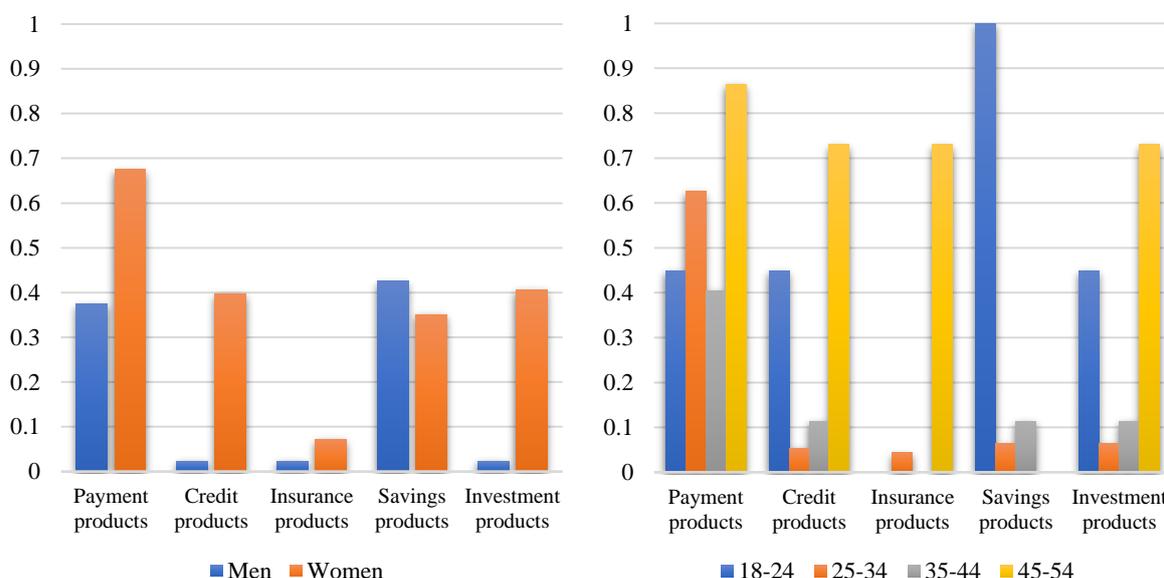
	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>Migrants in Japan</b>				
Payment products	0.54	0.13	0.28	0.79
Credit products	0.22	0.13	-0.03	0.48
Insurance products	0.05	0.03	-0.02	0.12
Saving products	0.39	0.15	0.08	0.69
Investment products	0.23	0.13	-0.03	0.49
<b>Families in Mongolia</b>				
Payment products	0.92	0.04	0.84	0.99
Credit products	0.69	0.14	0.41	0.97
Insurance products	0.22	0.07	0.09	0.35
Saving products	0.75	0.15	0.45	1.04
Investment products	0.21	0.06	0.08	0.34

Source: Author's calculations

Table 21 summarizes the product holding by the above five indicators for migrants and their families, respectively. As with financial literacy, the family members outperform the migrants in financial inclusion. For all types of financial products, with the exception of

investment products, family members hold more financial products. At 92%, holding of payment products is almost universal for the family members, while it is only a little over half of the migrants. For both migrants and their families, savings products are the second most held type of product at 39% and 75%, respectively. The third most held group of products by the family members are credit products, while those for the migrants are investment products, which are the only type of products that more of them hold than their family members. Insurance products are the least held type of products by the migrants, with only 5% of them holding some type of insurance, compared to 22% of the families.

**Figure 38 Migrants’ product holding by age and gender**



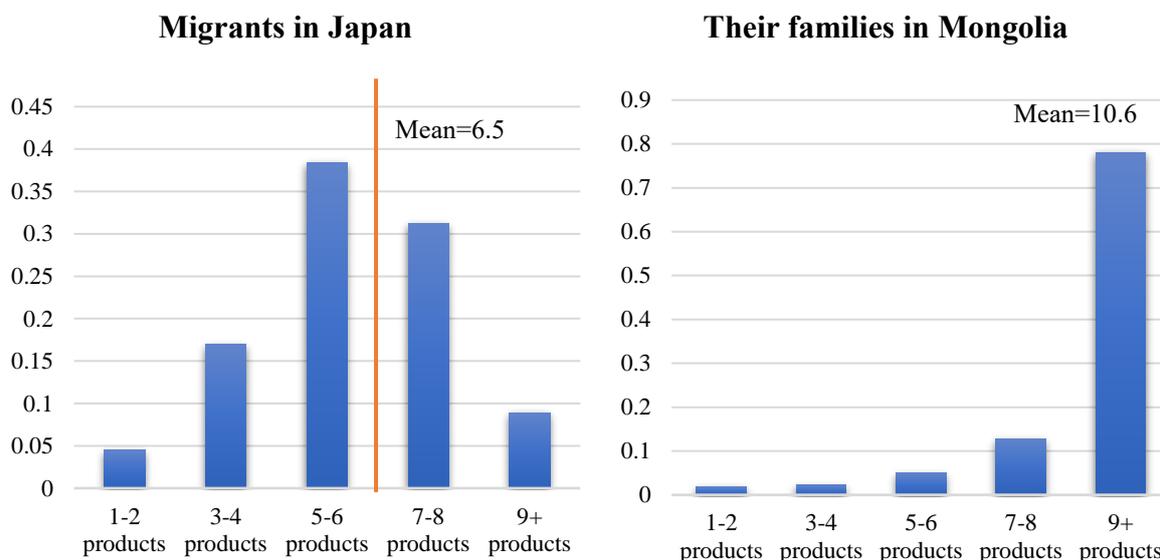
Source: Author’s calculations

Migrants’ product holding by age and gender is presented in Figure 38. The results show that women migrants are more financially inclusive than men. Women hold more of all types of financial products than men, with the exception of the savings products. On the other hand, more men hold payment and savings products. By age, the oldest group hold the most financial products except for the savings products, which they responded they do not hold at all. On the other hand, the youngest migrants hold the saving products the most. While some age-groups do not hold insurance or saving products at all, migrants of ages 25–34 hold all types of products.

In addition to product holding, the survey also asked about financial product awareness from the respondents. Figure 39 compares the product awareness of migrants and their families. Product awareness is a closely related concept to financial inclusion, as knowing what products and services are available in the market is vital to use them. On average, the migrants are aware of 6.5 financial products, compared to 10.6 products for their family

members in Mongolia. Almost 40% of migrants know or have heard about 5–6 products or services. On the other hand, nearly 80% of their families who remained behind in Mongolia are aware of more than 9 products available in the market. The difference may indicate that the migrants are not yet familiar with the foreign financial system and markets.

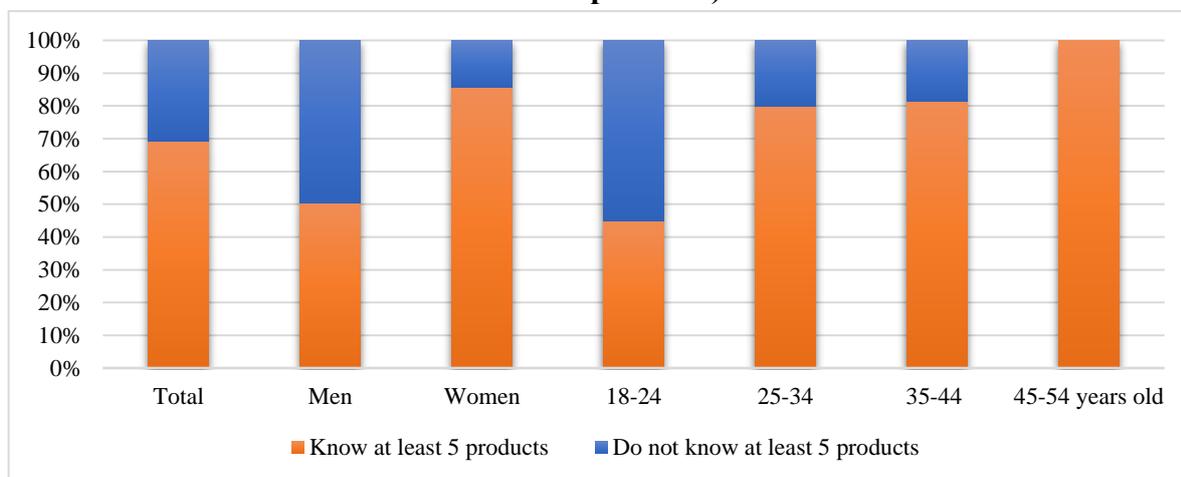
**Figure 39 Financial product awareness (number of products heard of)**



Source: Author’s calculations

Approximately 70% of the migrants are aware of at least 5 products. Women migrants know more products than men. By age, older migrants know more products than the younger migrants.

**Figure 40 Migrants' financial product awareness (percent of population that know at least 5 products)**



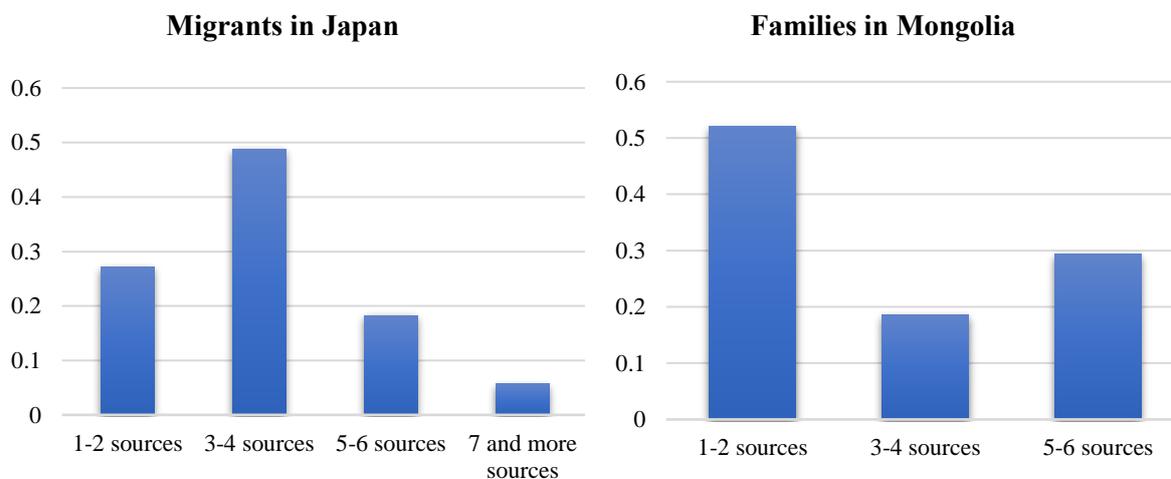
Source: Author’s calculations

## 7. The COVID-19 pandemic

As the implementation of the baseline survey coincided with the COVID-19 pandemic, the survey examined how the pandemic was affecting the livelihoods of the migrants in Japan and their families in Mongolia. However, the report does not attempt to draw any causal relationships between the pandemic and the livelihoods of the migrants and their families, nor are the results representative of all Mongolian migrants in Japan or their families. These statistics are only representative of the survey sample and stand for the respondents who participated in the survey.

In the early period of the pandemic, obtaining correct and appropriate information about protecting oneself and others from the Coronavirus disease was important, as the SARS-CoV-2 virus was new to the world. The COVID-19 pandemic started as a health crisis and quickly became a double crisis of health and economy worldwide (Ratha et al. 2020). Migrants are much more prone to any economic disruptions in their host countries than the native population because of the nature of the work they are involved in and their living conditions in the host countries (Ratha et al. 2020). The economic vulnerability during the pandemic also made them more susceptible to exposure to the virus. For these reasons, it is important for migrants to obtain and understand appropriate information during the pandemic. Thus, we asked about the information sources from the survey participants. Figure 41 presents the number of news sources for COVID-19 pandemic updates. Almost half of the migrants get relevant information from 3–4 sources while the families obtain it from 1–2 sources. The migrants appear to have relatively more sources available than their families regarding pandemic-related news.

**Figure 41 Number of news sources for COVID-19 updates, percent of respondents**



Source: Author's calculations

Table 22 displays the source of information for the migrants and their families, respectively. For migrants, social networks such as Facebook, Twitter and Instagram are the largest source of information, followed by TV, family and friends, and online news and newspapers. On the other hand, the main information source for the family members is TV, followed by social networks. Relatively smaller shares of both migrants and their families receive information from the World Health Organization (WHO) website, government organization websites, and the Embassy of Mongolia in Japan.

**Table 22 News sources for COVID-19 pandemic updates, cumulative responses**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>Migrants in Japan</b>				
TV	0.89	0.04	0.81	0.98
Newspaper, online news website	0.68	0.13	0.43	0.93
Social network (Facebook, Twitter, Instagram)	0.92	0.04	0.84	1.00
Japanese government organizations' webpages	0.12	0.05	0.03	0.21
Embassy of Mongolia in Tokyo	0.20	0.06	0.08	0.31
Mongolian communities in Japan	0.26	0.07	0.12	0.41
Family members and friends	0.70	0.13	0.45	0.94
World Health Organization webpage	0.04	0.02	0.00	0.09
Other sources	0.01	0.01	-0.01	0.03
<b>Families in Mongolia</b>				
TV	0.96	0.02	0.93	1.00
Newspaper, online news website	0.51	0.13	0.26	0.77
Social networks	0.86	0.06	0.75	0.97
Family members and friends	0.46	0.12	0.23	0.69
World Health Organization webpage	0.06	0.03	-0.01	0.13
Other sources	0.29	0.08	0.13	0.45

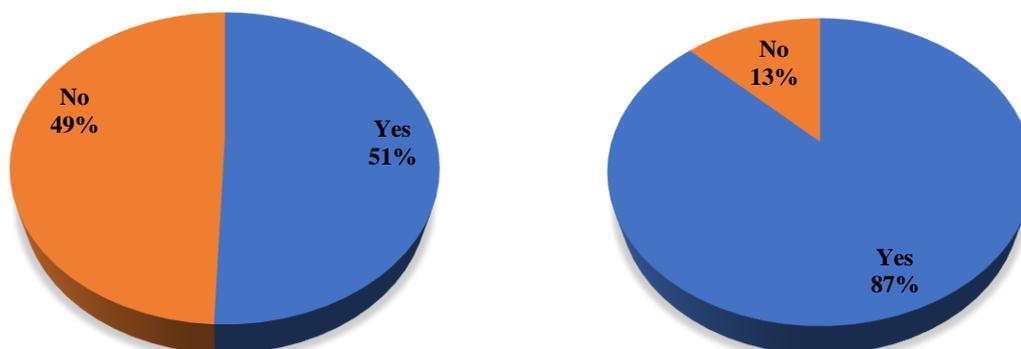
Source: Author's calculations

When asked whether they get sufficient information regarding the pandemic updates, only half of the migrants responded “yes,” compared with 87% of the family members (Figure 42). Although the migrants have more sources for information, they were unable to find sufficient information about the pandemic.

**Figure 42 Getting sufficient information about the COVID-19 pandemic**

**Migrants in Japan**

**Families in Mongolia**



Source: Author's calculations

**Table 23 COVID-19 effects on lives of the respondents, cumulative responses**

	Mean	Standard error	95% Confidence interval	
			Lower	Upper
<b>Migrants in Japan</b>				
Cannot return to Mongolia	0.49	0.13	0.24	0.74
Lost a job	0.02	0.01	-0.01	0.05
Income decreased	0.61	0.15	0.31	0.91
Cannot visit hospitals	0.04	0.03	-0.02	0.09
Cannot go to school/university	0.06	0.03	-0.01	0.13
Cannot pay rent	0.08	0.04	0.00	0.16
Cut down food expenses	0.32	0.14	0.04	0.60
Others	0.04	0.03	-0.01	0.10
<b>Families in Mongolia</b>				
Lost a job	0.02	0.01	-0.01	0.04
Income decreased	0.46	0.12	0.23	0.70
Cannot visit hospitals	0.05	0.03	-0.01	0.12
Cannot go to school/university	0.52	0.13	0.26	0.79
Cannot pay rent	0.01	0.01	0.00	0.02
Cut down food expenses	0.14	0.05	0.05	0.23
Others	0.78	0.07	0.64	0.92

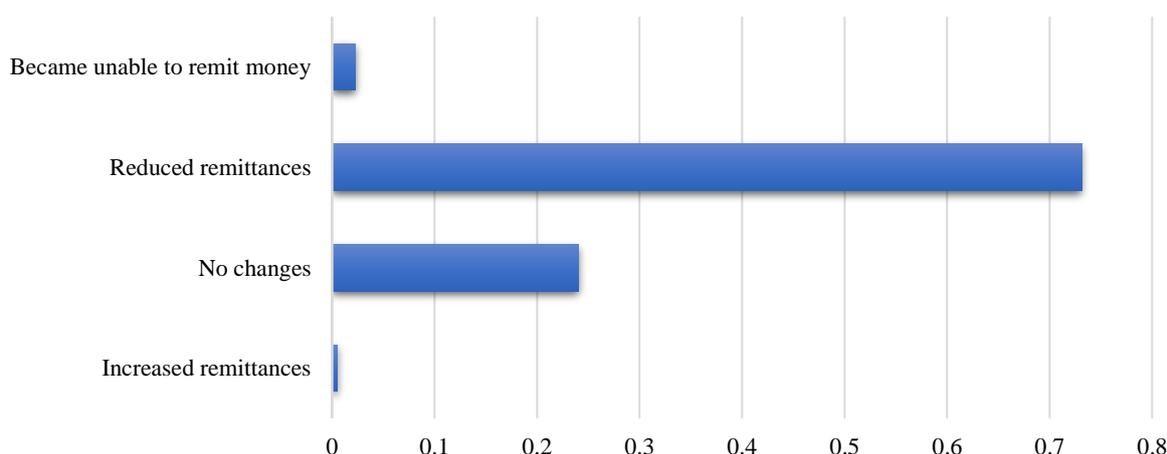
Source: Author's calculations

Furthermore, the survey asked how the pandemic affected the respondents' daily lives. Table 23 summarizes self-evaluation on how the pandemic has affected the respondents. More than 60% of the migrants responded that their income had decreased due to the pandemic, although only 2% lost their jobs. Almost half of the migrants responded that they could not return to Mongolia because of the pandemic. Moreover, one-third of the migrants responded that they cut down food expenses since the pandemic. On the other hand, more than half of

the family members in Mongolia said that it became impossible for them to go to school or university. At the beginning of the pandemic, Mongolia adopted strict prevention policies relatively faster than the other countries and closed schools and universities for an extended period of time. While 2% of the family members lost their jobs, 46% reported that their income decreased due to the pandemic.

As the pandemic negatively affect the migrants’ income, it was also expected to affect the remittances they were able to send. Figure 43 displays the changes in remittances due to the COVID-19 pandemic as reported by the migrants. More than 70% of the migrants responded that they had reduced the amount of remittances they send back home. About 24% of the migrants reported that there had been no changes in the remittances they send, while 2% said that they became unable to send money home. Only a negligible share of the migrants (less than 1%) reported that they had increased the amount of remittances sent.

**Figure 43 Changes in remittances due to COVID-19**



Source: Author’s calculations

## Conclusions and recommendations

This report has summarized the results of the baseline survey on financial literacy and financial inclusion of Mongolian migrants in Japan and their families remaining behind in Mongolia. The baseline survey was implemented in two phases. First, the survey recruited Mongolian migrants in Japan through SNS using an online survey platform that incorporated high security and safety of data protection. The first phase was conducted in May–June 2020. Second, through introductions from the migrants who had participated in the first survey, the data collection for their household members in Mongolia was conducted from August to December 2020. The total matching sample recruited by the survey was 122 migrants and their families.

As the survey adapted a non-probability sampling, a post-stratification weighting method was used to reduce sampling bias. Although the sampling bias was reduced, it should be acknowledged that the baseline survey is by no means representative of all Mongolian migrants in Japan and their families in Mongolia. Rather, the results presented in the report stand for the respondents who participated in the survey.

The purpose of the survey was to collect the baseline data on financial inclusion and financial literacy of Mongolian migrants in Japan and their families in Mongolia. The methodology to construct financial literacy and financial inclusion indicators was adapted from OECD/INFE 2018 toolkit with modifications to fit with financial markets in Mongolia and Japan.

The results show that migrants' financial literacy is lower than that of their family members in Mongolia in all aspects of financial literacy. The overall financial literacy score of the migrants is 15.4 or 73%, while that of the family members is 16.5 or 78%. The contribution of the financial literacy components to the overall financial literacy score shows that financial attitudes and behaviors contribute more to the overall scores, while financial knowledge contribution lags behind for both the migrants and their families. The weakest point in financial knowledge for both the migrants and their families is the calculation of compound interest rate, followed by diversification of assets and risks. By gender of the migrants, men tend to do relatively well in financial literacy compared to women in all aspects, except for financial attitudes where women are more likely to have positive attitudes towards longer-term financial matters. By age, younger migrants are more financially literate than older migrants.

In terms of financial inclusion, family members in Mongolia are outperforming the migrants in both product holding and awareness. With the exception of investment products, the family members in Mongolia hold more of all types of financial products than the migrants. In particular, holding payment products is almost universal at 92% for the family members in Mongolia. On average, the migrants are aware of 6.5 financial products in the market, whereas the family members are aware of more than 10 products in the market. By age and gender of the migrants, women and older migrants are more financially included than men and younger migrants.

Based on the results presented in this report, a number of recommendations can be made. First, there is a need to strengthen financial knowledge across migrants and their families. Among the components of financial literacy, financial knowledge is found to be the weakest competency among both the migrants and family members. In particular, the fact that the migrants have higher educational levels but lower financial knowledge competency could indicate that there is a lack of applicability of formal education to financial matters. Applied numeracy is an important part of both formal education and financial knowledge and teaching practical application of numeracy to daily financial problems in school could help young people to develop skills necessary to achieve financial wellbeing.

Second, strengthening the financial literacy of the population should take into account gender differences. Among the migrants, women consistently underperformed men. Policymakers need to be aware of these differences and address the financial education needs of migrant women because women's employment opportunities and income streams tend to be different from those of men.

Third, pre-departure financial literacy training for migrants could help them to familiarize themselves with the host country's financial system. The survey results revealed that the migrants consistently underperformed compared to their family members in Mongolia on financial literacy competency and financial inclusion, despite being more educated. This could indicate their unfamiliarity with the foreign financial system. Especially for migrants who come to Japan on inter-governmental or organizational contracts, there is a possibility for such trainings. While this report is the first of its type in the case of Mongolian migrants in Japan and their families in Mongolia, care should be taken regarding the generalization of its results.

There are a couple of ways to go forward based on the findings of this research. Firstly, constructing and maintaining a sampling frame of the target population can greatly improve the external validity of research of this type. Migrants are highly mobile and it is a difficult task to track them. As a first step, it could be helpful to keep records by sub-groups, such as Mongolian students coming to Japan on an intergovernmental agreement or government scholarships, special skilled employee contract workers, and technical interns. These groups are likely to be easier to track as they come to Japan on governmental or organizational contracts. Secondly, more sample surveys of the type should be encouraged. These surveys can supplement the existing surveys and vice versa, making them more externally validated.

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