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‘Switch Off Air Pollution’ project (2018-2022) Analysis on Household socio-economic survey by the National Statistical Office



БАРИЛГЫН ЭРЧИМ ХҮЧ ХЭМНЭЛТИЙН ТӨВ
BUILDING ENERGY EFFICIENCY CENTER



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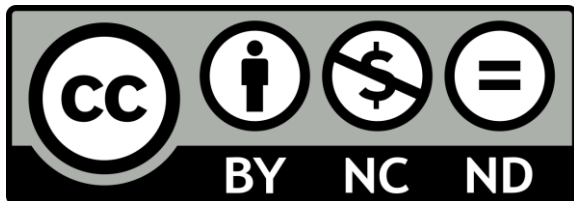
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Introduction (about analysis)

The National Statistical Office has been conducting Household income and expenditure survey since 1966 and Household socio-economic survey since 2007, combining “Household income and expenditure” and “Living standards measurement” surveys. Total of 11232 households from all over Mongolia were surveyed every year and data on age, sex, education and employment of the selected household members were collected. Household survey includes data related to household income, expenditure and consumption, as well. The survey questionnaires had been expanding and becoming more detailed year by year. In order to see general picture of the Ger area household’s socio economic situation, especially for those who are living in the detached houses, we made some analysis on the Household income and expenditure survey raw data. The analysis was made in 3 main stages:

- a. We collected baseline data to prepare estimation and sources of income, expenses, asset ownership, incidence, depth and severity of poverty and associated social characteristics of the Ger area households. Consequently, we also determined competent groups¹ and compare their characteristics with incompetent groups².
- b. We assembled baseline data of target households in such as, detached house type, heating sources and size of the property etc. Also, we analyzed if there is a contrast between competent and incompetent groups.
- c. At last, we collected baseline data on if whether family structure affects household income and expenditure.

As aforementioned, the total survey was conducted between 11232 households and 1174 of them were Ulaanbaatar Ger area households, who live in detached houses.

General household information

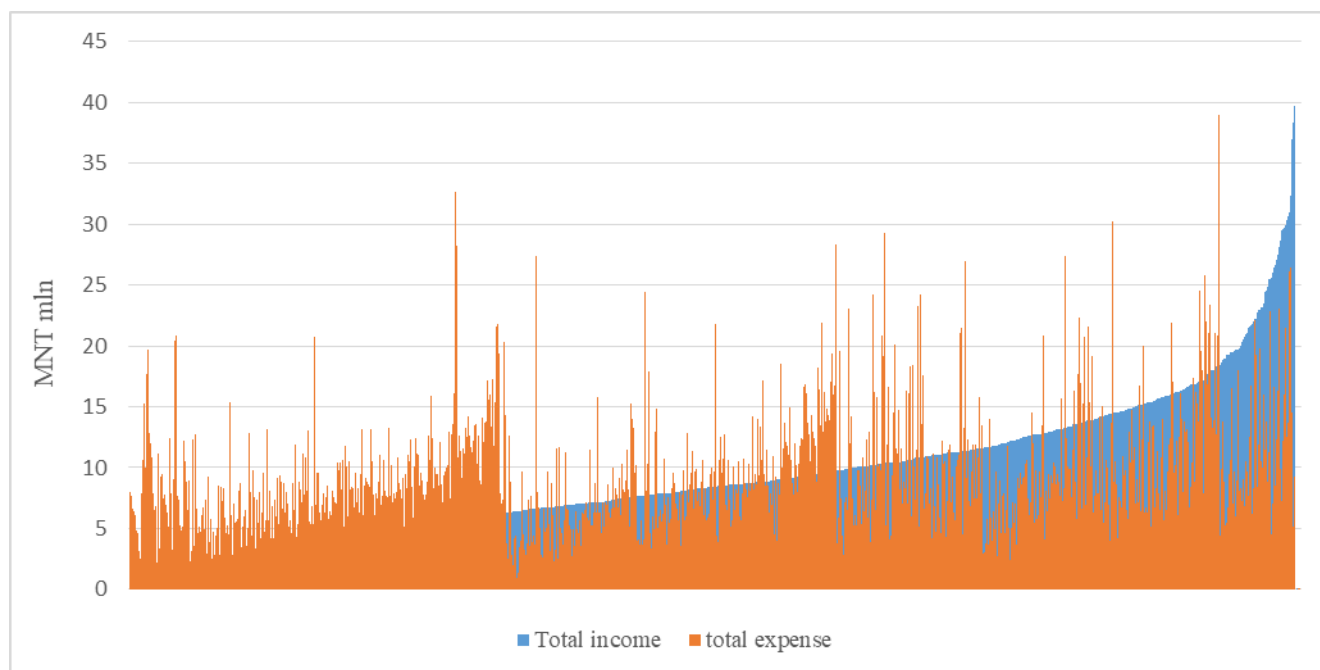
Distribution of Household Income

Graph 1 shows percentage shares of total yearly income in the sampled population of the Ger area. The income appears to be unequally distributed among the households. In overall sample, the top 8.5% households receive income share at 22.3% whereas the bottom 46% households get also 22.3% of the total income, while the remaining middle 45.5% households get 55.4%. The distribution of income among top 10% and bottom 10% is extremely unequal.

¹ Competent groups - Households, who can afford to pay back the loan if they are issued a loan. They don’t have to have saving or be able to pay back right away.

² Incompetent groups - Households that cannot meet their basic needs or their loan repayment amount reached the maximum limit.

The bottom 10% households only get 1.3% of total income while top 10% receive much higher share of income at 22.3%.



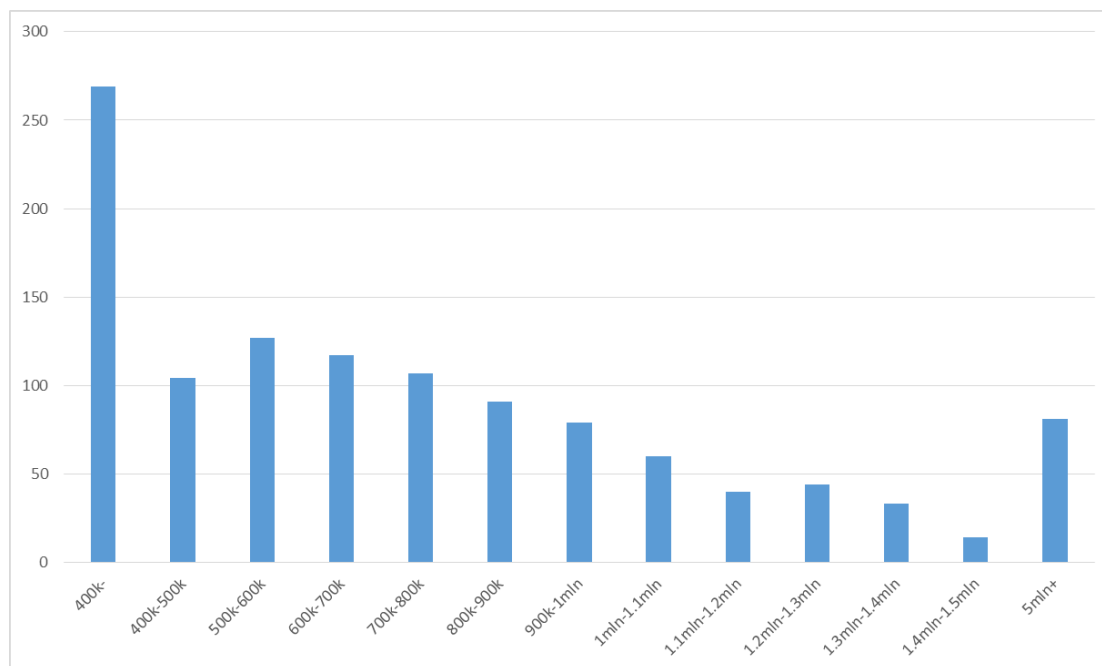
Graph 1: Household income and expense position (X-axis is household sorted according to their income, Y-axis express annual household income by million MNT)

Source: Socio-Economic Survey of the HH 2018, National Statistical Office

Household income situation

Households, which earn lower than 400,000 MNT monthly, make up 25% of the total population, followed by 500,000-600,000 and 700,000-800,000 MNT income segments. Households that earn more than 1,500,000 MNT monthly cover 7%.

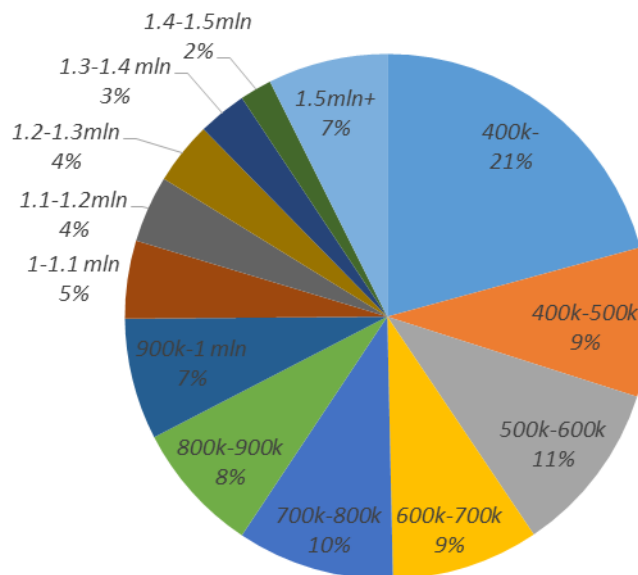
In this survey temporary jobs or apprenticeship incomes do not count as an income. It is important to highlight that the majority of household monthly income distribution falls between 400,000-800,000 MNT, while an average income of 812,000 MNT shows that Ger area households are likely to not have common income variations. Furthermore, it proves that it is not reliable to choose competent groups according to their income solely.



Graph 2: Household income distribution (MNT)

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

In this graph we tried to show income distribution. We added one more graph below to show it by percentage.

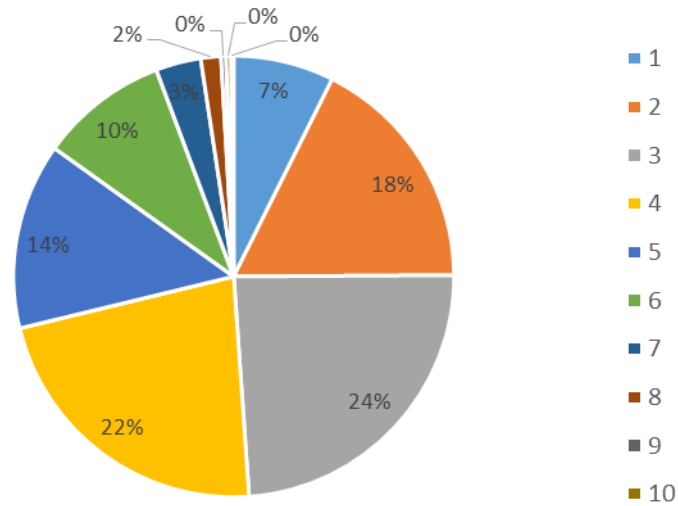


Graph 3: Household's income distribution (MNT)

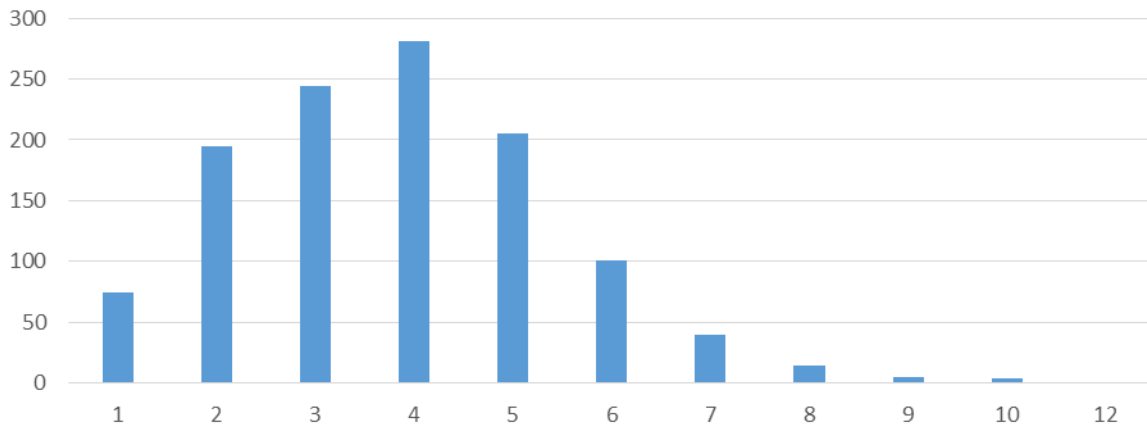
Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Structure of the family

The average number of family members living at Ger area in detached houses is 4,2.



Graph 4: Numbers of family members in the HHs



Graph 5: Distribution of numbers of family members in surveyed HHs

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Structure of Housing & Heating source

The quality of life of the surveyed households cannot be necessarily judged from the respondents' housing structures and the availability/use of utilities.

A majority of houses have brick (brick/wood) structure (58.0%), followed by wooden (wood/clay) (25.0%) and concrete block (12.0%) structures.

The majority of the sampled population (80.5%) lives in one or two-room houses. With average household of 4 persons, the living space is not much congested. Majority of the sampled population (80%) use stoves, while significant number of the households use stove and water heating combination system (16.8%) and the rest (3,2%) use electric heater for keeping the house warm. The vast majority of households (96.8%) use raw coal as a main source of fuel. There are no households connected to the central water and sewage system in the Ger area.

Although the monthly incomes of the Ger area households vary between 300,000-5,000,000 MNT there are no strong correlation between income and structure of the building. Specially among 300,000-900,000 MNT income families (62%), no visible differences appeared for the following reasons:

- There were only a few types of detached house blueprints due to the lack of material types and sizes;
- There is no regulations and technology standards set on detached houses at Ger area;

Household Assets and Distribution

The average property value per household is 31,278,000 MNT. About 89% of the households sampled, are land owners. Around 10% of the households surveyed, do not own the land.

Household Loans and Debt

For the households, who took loan (39.0%), the average debt equals to 3,4 million MNT. Majority of the households (99.8%) took loans from banks³. But there are still unofficial short term lending from friends, relatives and pawnshops and this act has been spreading.

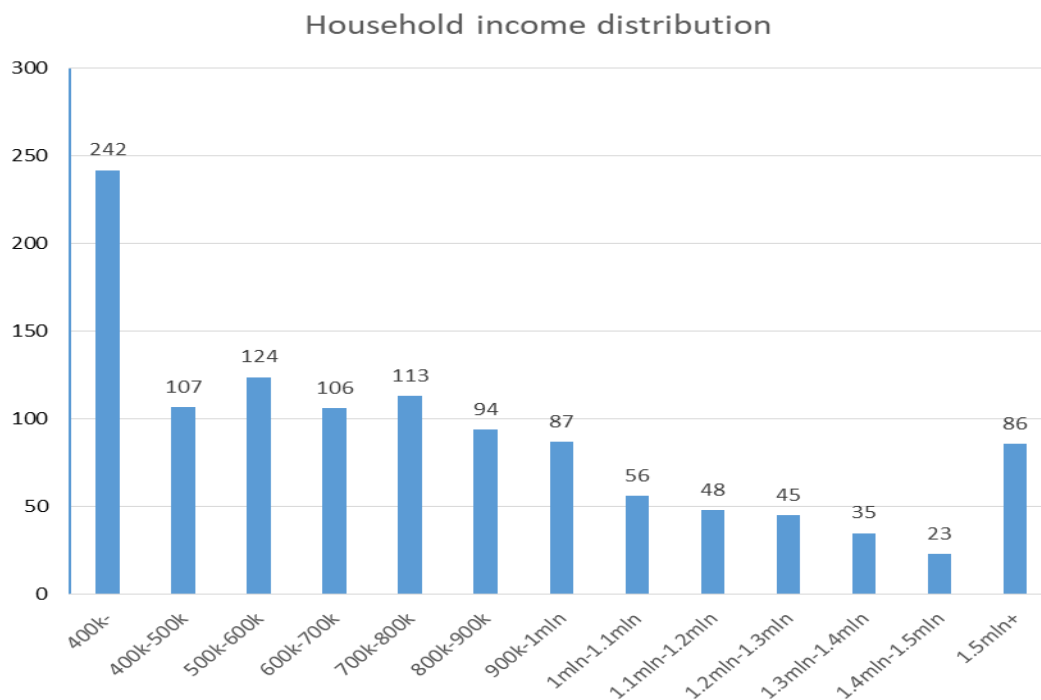
About 68.0% of the loan amount was used for personal use and social functions, followed by 19.5% for furniture and equipment, 10% for business and 3% for housing.

Specifics of the competent groups

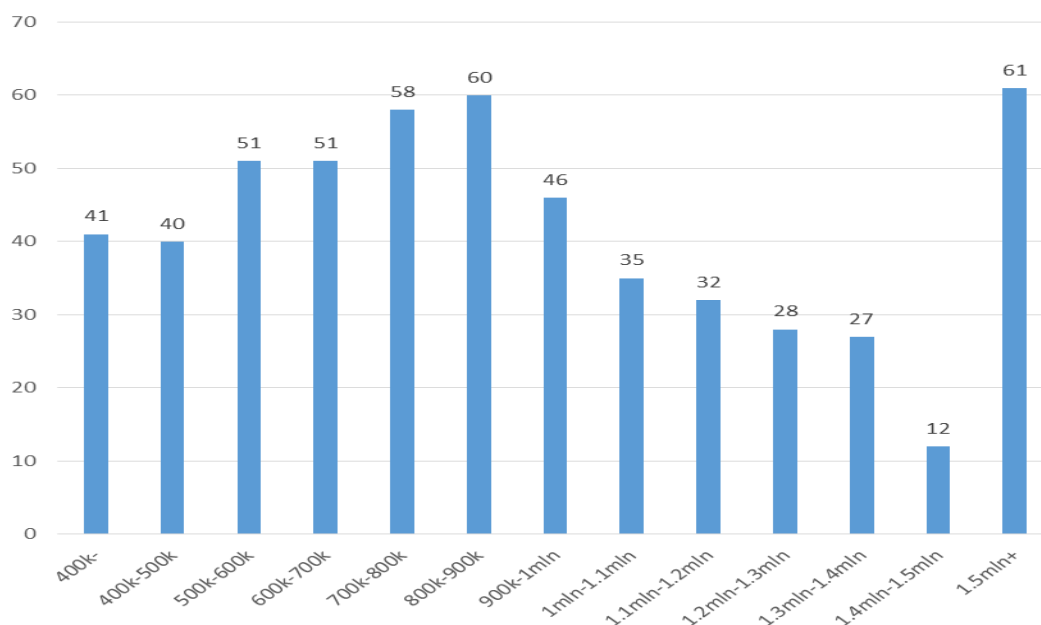
It is obvious that majority of lower income families (400,000 MNT -) have no additional income to invest. But there are still 20% of families, who can save money with their low expense with the fewer family members. Although they have capability to save, their annual investment amount is lower than 600,000 MNT.

³ 99% of the households already took a loan from commercial banks, only 1% borrowed money from other sources.

On the other hand, when household income increases, the number of the competent households percentage increases. However, there are still plenty of incompetent households, whose expenditure or loan repayment reached their limit.



Graph 6: Distribution of households in income segments



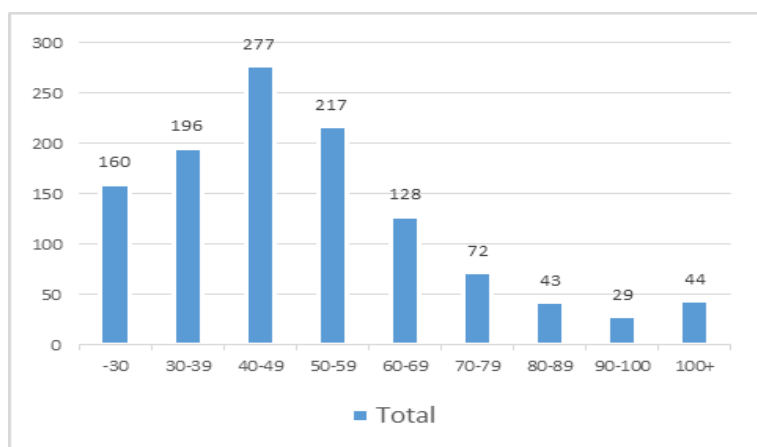
Graph 7: Distribution of competent groups in income segments

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Structure of housing

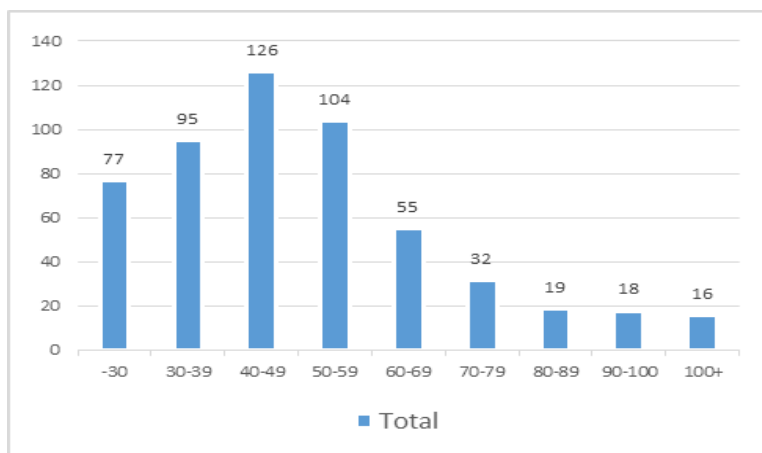
Detached house size does not depend on their main or additional income. Due to the limited house building technologies and materials, there are a few types of detached houses. However, there are some households owning 2 floor houses included in the competent groups. But these types of houses are very rare.

Average household size is 48m² and 50% of the competent group`s detached house size falls between 40-60m². Numbers of the family members, also, do not affect their building size. Generally, the density of the families living in Ger area is low. They prefer to build new detached houses or live in ger on the same land rather than living together with their extended family.



Graph 8: Distribution of household numbers by their building size

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office



Graph 9: Distribution of competent household numbers by their building size

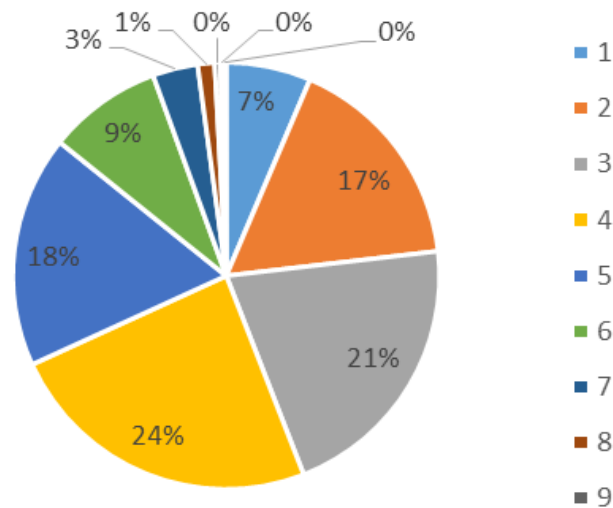
Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Structure of the family

Average number of the family members in one household is 4 in the sampled households. But family structure still varies. Familiar structures are:

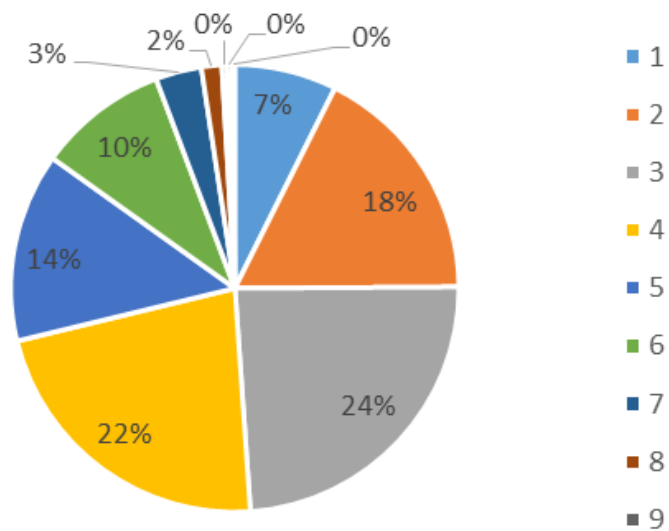
- Couples with 2 children;
- Single-headed family with children and elders;
- Elders with grandchildren;
- Elders only

But we need to clarify exact percentage by a different survey.



Graph 10: Number of family members

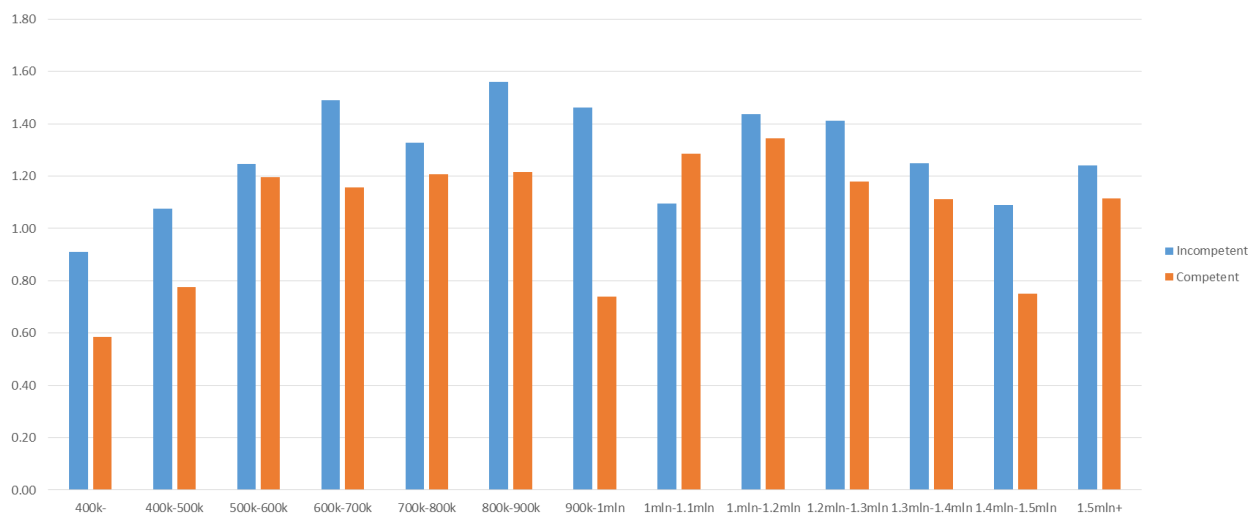
Source: Socio-Economic Survey of the HHs 2018, National Statistical Office



Graph 11: Distribution of competent households' family composition

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Graphs 10 and 11 show that 50% of the sampled households consist of 3 or 4 family members. Competent groups are likely to have 3 or less than 3 members, while others have tendency to have more than 3 persons in the family.



Graph 12: Average number of the children of Competent and incompetent households according to the family income

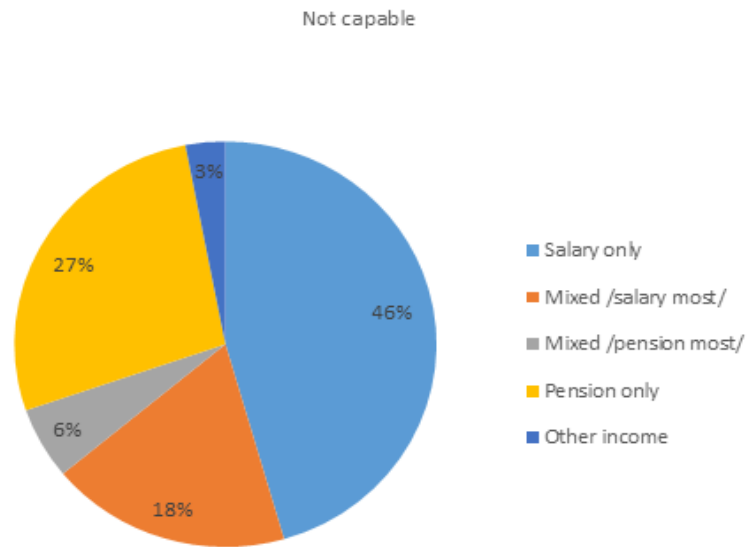
Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

From Graph 12 we can see how the number of children effects on capability of the households. When the household monthly income is lower than 1,000,000 MNT, number of the children is putting big impact on their savings. On the other hand, when their income increase, number of the children is not impacting too much.

Household income structure

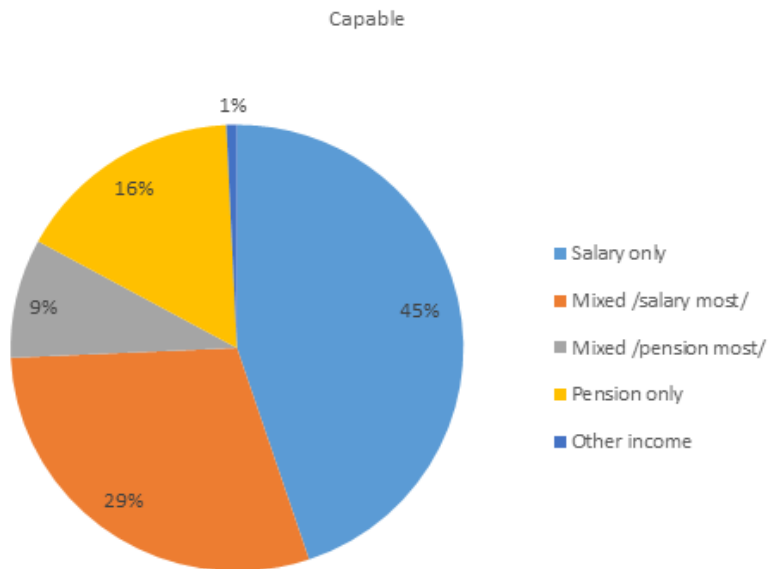
In the Socio-Economic Survey, we did not count family's seasonal or temporary job incomes as an income. Also, there are some employers, who pay salary by cash and partially by cash. According to the survey, pension is the significant part of the family income. Pension covers the most of expenses of the family.

Following graph shows family income structure, where almost 54% of the family has pension income. Salary and pension income families are likely to have a capacity to save money.



Graph 13: Income structure of incompetent group

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

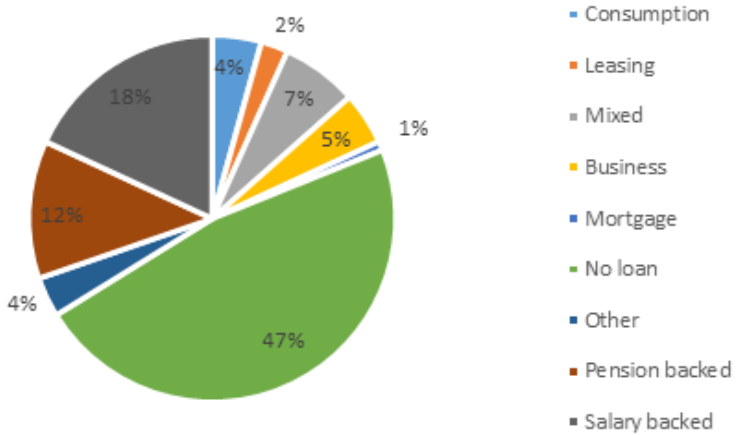


Graph 14: Income structure of competent group

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

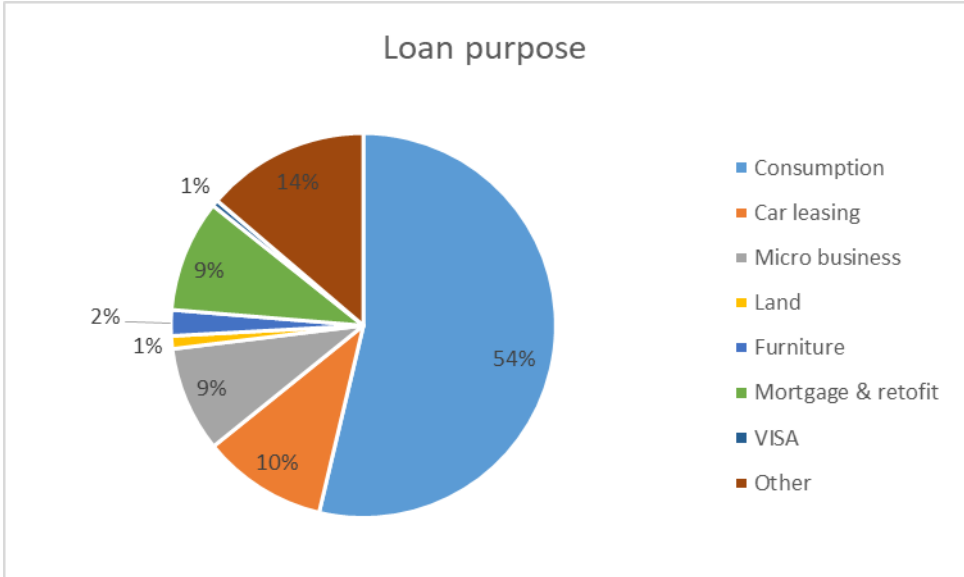
Accessibility to loan

According to the sampled households more than 50% of them already have outstanding loan and majority of them have salary backed (38%) and pension backed loan (25%) followed by leasing. Approximately 4% of borrowers from the sampled households spent money on buying their houses. It is obvious that majority of competent houses do not have outstanding loans. On the other hand, 25% of the competent households are still active borrowers, although they have a chance to take additional loan.



Graph 15: Structure of the loan type

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office



Graph 16: Structure of the loan purpose

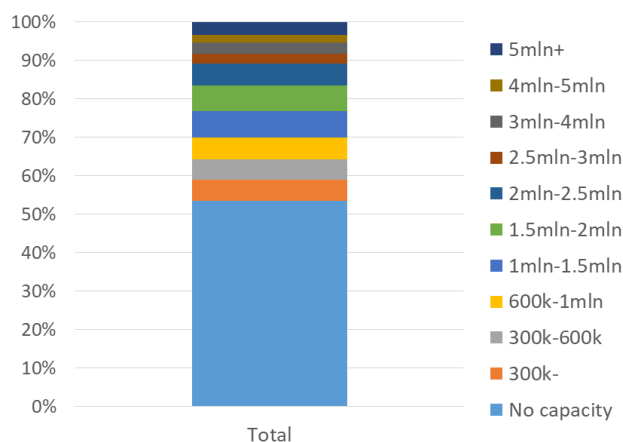
Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Graph 16: shows the household loan purpose. Majority of households borrow money for irregular use (54%) while 10% are spending for cars and etc. Approximately 9% of households are borrowing for investment in their houses. Other purposes are negligible.

Potential amount

Based on the survey, we try to find out how much money competent households can save. It is calculated by subtracting all expenditures and loan repayment from total income.

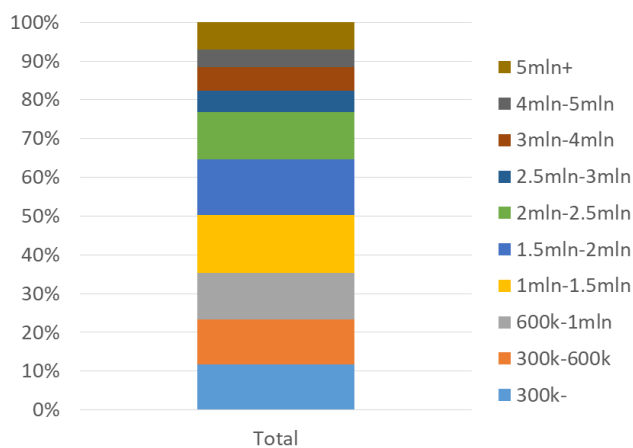
Ger area households do not have habit to accumulate additional income, thus they do not have savings on financial institutes. Instead of having deposit account they prefer to lend their savings to friends and relatives or buy valuables.



Graph 17: Household percentage by their saving capacity

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Graph 17 shows the potential amounts to save. Almost 50% of the sampled households do not have positive cash flow. Remaining households (45%) are capable to save but their saving amount is relatively different than one another.



Graph 17: Annual saving (investment) capacity of the competent households

Source: Socio-Economic Survey of the HHs 2018, National Statistical Office

Graph 17 demonstrates potential amount to save for competent households. Households in the upper segments can save the same amount of money or higher amount than segments below. 50 percent of the competent groups can save minimum 1,500,000-2,000,000 MNT, while 65% can save 1.000,000-1,500,000 MNT per year.

Conclusion

Household income for Ger area households is lower than average households living in other areas of Ulaanbaatar. Over 50% of total household barely meet their basic needs and have no savings. In spite of that fact, the financial capacity of the remaining 45% varies according to their income and expense ratio. They still have some money left to save money or have access to additional loan.

Detached houses in Ger area are the almost similar to one another for the designs and building technology, but they differ by construction materials they use. According to analysis, building size, structure and construction materials are not really correlated with household incomes judging by narrow choices of the house technology and low technical and construction material options.

It is also important that, 80% of the households are using common stove and 97% are using raw coal as a heating source in Ger area.

85% of all households own land while the remaining 15% are settled in new houses or gers on their parents' land or have not yet registered their land.

Although, some families have higher incomes, they are still not capable for saving depending on their expenses and repayment on huge amount loans. As a result, it is more reliable to determine competent groups and households' capabilities depending on the savings after expense and repayment. Indeed, families, who are classified as capable of saving money, do not have accumulated savings or bank deposit.

The family structure of the Ger area households consists of 3-4 members in average and it is rare to have extended families. They prefer to build new house or move to other location than living with their extended family.

If we assume that, every competent family is willing to invest all savings of next 2 years to the insulation, 50% of the total potential households will be able to save up to 1,500,000-2,500,000 MNT annually and 4,000,000-6,250,000 MNT biannually.

Therefore, our average solution price for retrofitting and insulation package is suitable when it is around 5,000,000 MNT. Also SOAP team has to develop cheaper solutions for households with lower capacity. On the other hand, it is still very useful to have forms of incentive to trigger the act of household investment low-rate loans, technical assistance of a low-cost professional and discount materials.

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