

INCOME INEQUALITY AMONG URBAN HOUSEHOLDS IN MANDALAY, MYANMAR

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Abstract

This paper studies income inequality among urban households in Mandalay which is the largest city in upper Myanmar. From the development perspective, poverty and inequality is one of the socioeconomic issues in Myanmar. In case of Myanmar, although only 30 percent of the population lives in urban areas, inequality levels in urban areas are higher than those in rural areas. Therefore, this study attempts to measure income inequality among urban households in Mandalay. The study is based on primary data obtained by surveying sample households in Mandalay. In measuring inequality, the study uses Gini coefficient and also it analyzes expenditure pattern of households, and debt burden of low-income households. The study found that in measuring income inequality in Mandalay, Gini coefficient is moderately low but households in bottom quintile are spending more than or almost all of their income on consumption expenditure and vulnerable to be in debt. One-fourth of households are in debt, having burden at shark rates.

Keywords: urban inequality, poverty, Gini coefficient, expenditure pattern

Introduction

Both theory and recent evidence have shown that income distribution have a significant impact on the growth process. Classical viewpoint underlined the positive effects of inequality for the growth process whereas the modern perspective has highlighted the potential negative effects of inequality on the growth process (Galor, 2009). Higher inequality is associated with worsening economic, social and environmental outcomes, as it hampers economic growth, fosters unrest, crime and social instability and undermines sustainable environmental governance. There has been growing recognition that inequality is an impediment to inclusive growth, social development and environmental sustainability.

Although poverty has been on a declining trend, reducing poverty and inequality is still challenging for Myanmar in tackling its development issues. Mandalay is the largest city in upper Myanmar and an increasingly growing commercial hub. In this context, it is worthwhile to study income inequality among urban households and their consumption expenditure pattern since income or consumption is closely linked with welfare and living standard of households.

Objective of the Study

The objectives of the study are to measure income inequality among urban households in Mandalay and to explore the consumption expenditure pattern among urban households in different levels of income.

Method of Study

The study is mainly based on descriptive method by using primary data obtained by surveying sample households in urban areas of Mandalay. In this study, structured questionnaire is used for survey and two-stage sampling was used for choosing sample households.

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Profile of Poverty and Inequality in Myanmar

In 2011, a group of international technical experts and advisors, working with the Government of Myanmar and international organization, estimated absolute poverty in Myanmar to have stood at 25.6 percent in 2009/10. In 2014, the World Bank estimated the poverty rate in 2010 at 37.5 percent. Therefore, absolute poverty in Myanmar is estimated to have been between 25.6 and 37.5 percent in 2010, with at least 70 percent of the poor living in rural areas and depending primarily on agriculture. The higher estimate is based on a broader welfare aggregate that includes spending on health care and the use value of asset, and on alternative assumptions on adult equivalence scales and spatial price deflators. Poverty rates vary across geographical areas, with poverty highest in many areas affected by conflict and the coastal areas (53.1 percent) and hill zones (40.9 percent) and lowest in the dry zones (29.5) percent. This is consistent with global findings of the impact of conflict on poverty. However, due to the population density, the incidence of poverty is concentrated also in the Delta and in the Dry Zone. Delta and Dry Zones are home to 64 percent of the poor of the country (World Bank Group, 2015).

Poverty in Myanmar's farms and villages (rural areas) is substantially higher than that in its towns and cities (urban areas): 38.8 percent of the rural population are estimated to be poor compared to 14.5 percent of those in its towns and cities while national poverty is (32.1) percent in 2015. According to the Systematic Country Diagnostic (SCD), many households live just above the poverty line and are vulnerable to falling back into poverty. SCD categorizes the poor into three groups: traditional, transitional and excluded poor. The traditional poor are heavily concentrated in rural areas, have very low levels of education and depend on agriculture for the livelihood. The transitional poor typically live in urban and peri-urban areas; have transitioned out of traditional rural livelihoods but still work as low-skill casual laborers. The "excluded" poor do not have access to opportunities for productive economic activity.

Despite higher poverty in rural area, higher inequality can be clearly seen in urban areas of Myanmar. Living standards have improved and poverty has declined between 2004/05, 2009/10 and 2015 (MOPF and World Bank, 2017a). The updated poverty analysis confirms the decline in poverty between 2004/05 and 2015. Poverty is estimated to be 32.1 percent in 2015, down from 48.2 percent in 2004/05. There are some households at the top of end of the distribution who show markedly different consumption patterns, in particular in their ownership of higher value durables. The majority of these households lives in cities, which contributed to increase the Gini coefficient in urban areas and cause an urban-rural gap in the level of inequality (Ministry of Planning & Finance and World Bank, 2017b). In 2015, Gini coefficient is 35 at national level, 38.6 for urban and 28.3 for rural areas.

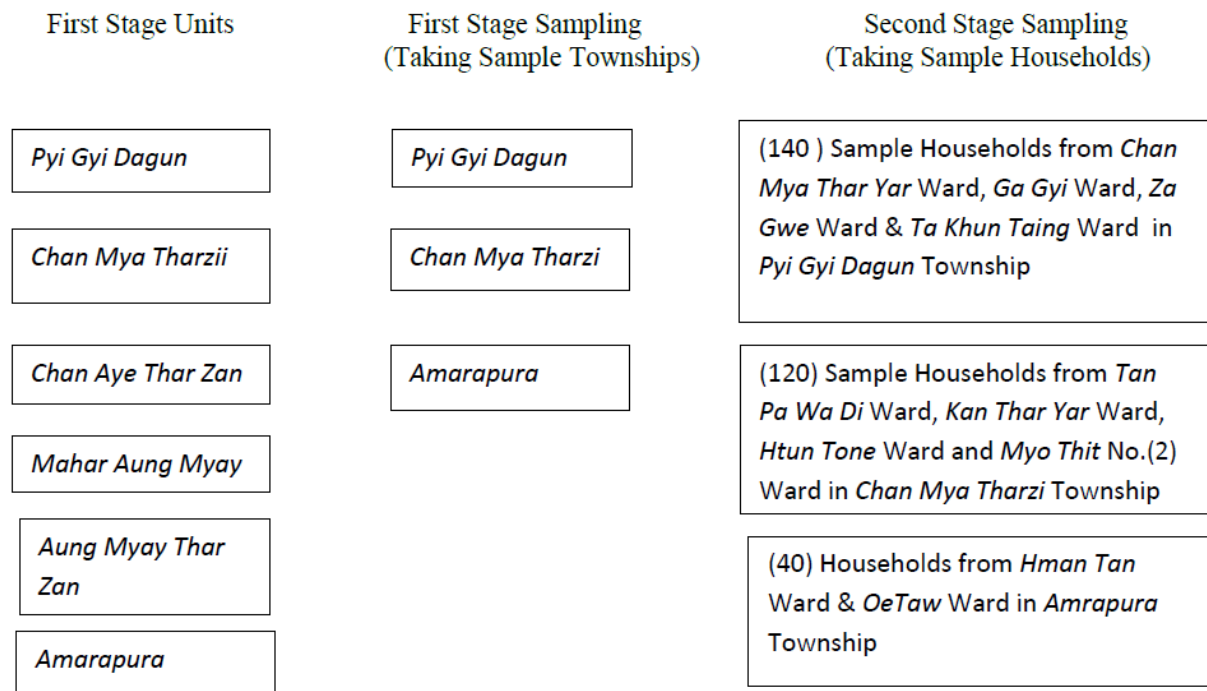
Results and Discussion

Urban Income Inequality in Mandalay

Mandalay District constitutes Mandalay City. Mandalay District consists of seven townships: *Pyigy Tagun*, *Mahar Aung Myay*, *Aung Myay Thar San*, *Chan Mya Thar Si*, *Chan Aye Thar San*, *Amarapura* and *Pathein Gyi*. However, Mandalay City covers only six urban townships because *Pathein Gyi* township is a rural area.

In this study, three urban townships in Mandalay District – *Pyigy Dagun*, *Chan Mya Tharzi* and *Amarapura* were selected for the survey. In these townships, selected wards are same

with the wards selected for Myanmar Living Conditions Survey (2017). The following figure depicts the survey framework.



Source: Author

Figure 1 Two-stage Sampling Frame

The figure mentioned above is the frame of two- stage sampling used for the study. In the first stage, (3) townships: *Pyi Gyi Dagun*, *Chan Mya Tharzi* and *Amarapura*¹ were selected out of (6) urban townships in Mandalay District. These are first stage sampling. For this study, sample wards from selected townships are the same wards which included in Myanmar Living Condition Survey (MLCS) 2017. Therefore, after the first stage sampling, sample households were selected from the selected wards. These wards include (4) wards from *Pyi Gyi Dagun* townships, (4) wards from *Chan Mya Tharzi* township, and (2) wards from *Amarapura* township. In the second stage of sampling, total (300) sample households² were selected. However, the number of respondent households is (280) because (20) households refused to answer the survey questionnaires and did not participate in the survey. Households³ which gave refusals were not filled by other households.

¹ See Township Profile in Appendix (A).

² Sample size is determined by using Cochran Sample Size Determination Formula for large population. For this study, required sample is 246 with the proportion of an attribute that is present in population is 0.2, 95 % confidence level, and 5% precision level.

³ Almost all of households which refused to answer survey questionnaire are the rich.

Demographic Factors of Survey Households

There is a close link between the demographic characteristics of a population and the distribution of income among its members. Table (1) presents the demographic factors of the sample households¹ of this study.

Table 1 Demographic Factors of Sample Households

| <i>Age group</i> | Number | % |
|--|---------------|------------|
| 0-14 | 231 | 19.2 |
| 15-64 | 875 | 72.7 |
| 65 and above | 97 | 8.1 |
| Total Number of People in Sample Households | 1203 | 100 |
| | | |
| <i>Sex</i> | | |
| Male | 539 | 44.8 |
| Female | 664 | 55.2 |
| Total | 1203 | 100 |
| | | |
| <i>Number of working People</i> | | |
| Agriculture | - | - |
| Manufacture | 236 | 38.2 |
| Service | 381 | 61.8 |
| Total | 617 | 100 |
| | | |
| <i>Education level of Household Heads</i> | | |
| Monastic | 41 | 14.6 |
| Primary | 32 | 11.4 |
| Secondary | 51 | 18.2 |
| High School | 47 | 16.8 |
| University | 25 | 8.9 |
| Graduate | 72 | 25.7 |
| Post Graduate | 12 | 4.4 |
| Total | 280 | 100 |
| | | |
| <i>Occupation of Household Heads</i> | | |
| Casual workers | 64 | 22.9 |
| Pensioners | 10 | 3.6 |
| Employees in Government Sector | 36 | 12.8 |
| Employees in Private Sector | 88 | 31.4 |
| Owners of the retail business | 37 | 13.2 |
| Sellers/Vendors | 45 | 16.1 |
| Total | 280 | 100 |

Source: Calculation based on Survey Data, 2018

¹ Household includes a person living alone or a group of people who live together as a single unit in the sense that they have common housekeeping arrangement- they share or are supported by a common budget.

According to Table (1), 19.2 percent of people in the sample households are at the age between 0 and 14 years, 72.7 percent of the people in the sample households are in working age group aged between 15 to 64 years, and the remaining 8.1 percent of people is at the age of 64 and above in this study. Regarding the sex of the population, 55.2 percent of people in sample households are female and 44.8 percent of people are male in this study. With respects to distribution of types of industry, 61.8 percent of working people in the sample households are working in service industry, the remaining 38.2 percent are working at manufacturing industry.

With respects to education level of household heads, most of households are graduates and represented by 25.7% of the heads in this study. The second largest group of heads is at secondary education level which represents 18.2% of the total heads and this group is followed by high school, monastic education, primary education, university level, and post graduate with 16.8%, 14.6%, 11.4%, 8.9%, and 4.4% respectively. With regards to the occupation of heads in his study, 31.5% of heads are working in private sector as the largest group, and 22.9% of heads are casual workers as the second largest group. These groups are followed by 16.1% of heads who are vendors/ sellers, and the smallest group, 3.6% of heads who are pensioners in this study.

According to the table mentioned above, among sample households, the number of people in the age group (0-14) is 231, the number of people in the working age group is 875 and the number of people aged 65 and above is 97. Therefore, child dependency ratio¹ is 26.4 and elderly dependency ratio² is 9.8. Both dependency ratios are lower than urban child dependency ratio 32.7 and urban elderly dependency ratio 11 of Myanmar estimated by Myanmar Living Condition Survey, 2017. Among sample households, total dependency ratio³ is 37.5 which is also lower than Myanmar's urban total dependency ratio 44.5.

Table 2 Number of Working People

| | Number | % |
|----------------------------------|--------|------|
| Working People | 617 | 51.3 |
| Dependent (Actual) ⁴ | 586 | 48.7 |
| Total | 1203 | 100 |

Source: Calculation based on Survey Data, 2018

How many people are working and sharing their income within household and supporting the dependents in household is also the critical factor which can affect magnitude of inequality among households. It is found that total number of working people in sample households is (617) and accounts 51.3 percent of total number of people (2103) in sample households. It reflects the fact that roughly speaking, each working people is supporting one dependent of sample households in Mandalay City.

¹ The total number of children aged 0-14 divided by the working age population aged 15-64.

² The total number of the elder aged 65 and above divided by the working age population aged 15-64.

³ The total dependency ratio is the total number of dependents (0 to 14 plus 65 and older) divided by the working age population.

⁴ Dependent (Acutal) are those without job and actually dependent in household, not categorized by age.

Measuring Income Inequality

Income inequality in Mandalay City is measured in terms of the distribution of household income. While individual income is the simplest unit of analysis, a better alternative is to consider household, since the household is the locus of decisions on income getting and income spending of individual members. In measuring income inequality among households, household income is "equivalized" or adjusted for household size with the square root scale.

Common measures of inequality are the Gini coefficient – a measure of inequality that ranges from 0 in the case of “perfect equality” (where income is distributed evenly across the population) to 1 in the case of “perfect inequality” (where all income is earned by a single person) – and the S80/S20 income share ratio which refers to the ratio of average income of the top 20% to the average income of the bottom 20% of the income distribution.

The Gini coefficient is the most common and the single most important indicator of inequality because it does not just focus attention on the top share (decile or quintile) of incomes. Rather it considers the entire distribution of income. In that sense, the study uses Gini through quintile share approach to measuring inequality. This approach ranks every household's income from highest to lowest, and then separates the total number of households into five equal groups. In this study, household income includes all of the sources of income flowing into a household. To facilitate comparisons across households, household income is "quivalised" or adjusted for household size with the square root scale of household size. Household income is divided by the square root of household size to get the adjusted income for that household. This allows households of different sizes to be reasonably compared with each other.

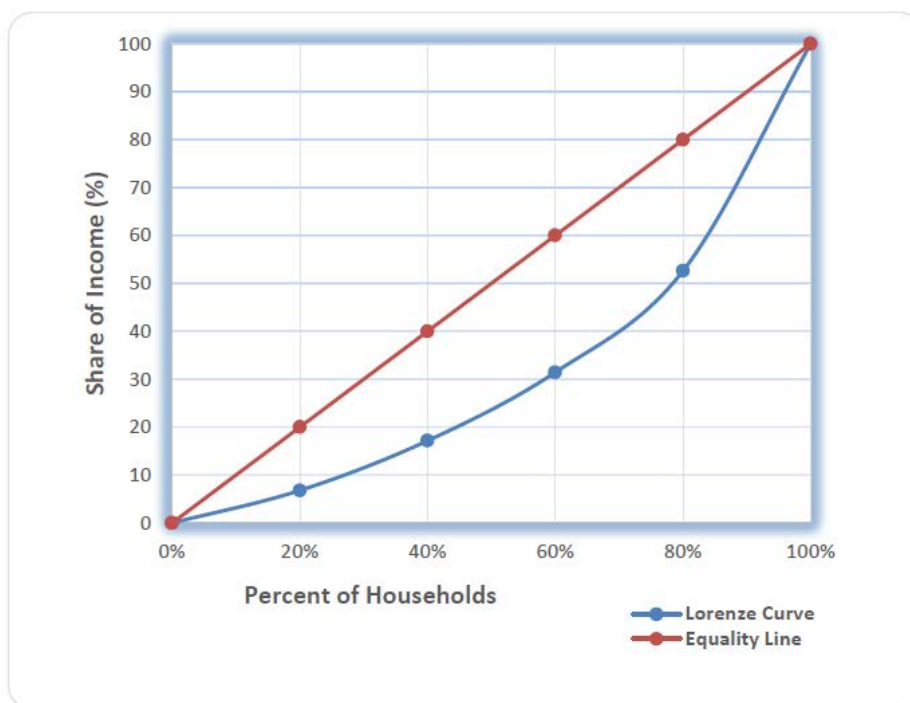
Table 3 Fraction of Income by Households

| Fraction of Income | Fraction of Households | % of Households that is richer | Score ¹ |
|--------------------|------------------------|--------------------------------|--------------------|
| 0.07 | 0.2 | 0.8 | 0.12 |
| 0.10 | 0.2 | 0.6 | 0.15 |
| 0.14 | 0.2 | 0.4 | 0.14 |
| 0.21 | 0.2 | 0.2 | 0.13 |
| 0.47 | 0.2 | 0.0 | 0.09 |
| Total Score | | | 0.63 |

Source: Calculation based on survey data, 2018

Since Gini coefficient is (1- total score) , income inequality among urban households in Mandalay City is estimated to be 0.37 or 37 percent that is not much different from Gini coefficient of 38.6 percent in 2015 estimated by Ministry of Planning and Finance and World Bank. Income inequality in Mandalay is represented by Lorenz curve as shown in Figure (2).

¹ Score = Fraction of Income * (Fraction of Population + 2 * % of Population Richer)



Source: Graph is drawn by using calculated data shown in Table (3)

Figure 2 Lorenz Curve

As shown in Table (3) and Figure (2), the bottom 20 percent of households hold about 7 percent of total household income, the lower 40 percent of households hold 17 percent, the 60 percent of households holds 31 percent and the 80 percent of households hold 52 percent of total household income. Therefore, it can be concluded that the top 20 percent of households hold approximately 47 percent of household income. It can be seen that about half of total household income are in the hands of top 20 percent households.

Decomposition of Consumption Expenditure

The composition of consumption expenditures is different among households and varies depending on income level, numbers of students in households, number of people working paidjob or earning income. In this study, household consumption expenditures are separated into spending on food items and non-food items including education, health, housing and durables use like clothing and footwear. The following table shows the share of food spending and share of on-food spending in total consumption expenditure.

Table 4 Consumption Expenditure Share of Food and Non-food

| Percent of Households | Share of Expenditure (%) | |
|-------------------------------|--------------------------|----------|
| | Food | Non-food |
| Top 20 % of Households | 41.2 | 58.8 |
| Fourth Quintile of Households | 48.4 | 51.6 |
| Third Quintile of Households | 55.4 | 44.6 |
| Second Quintile of Households | 55.8 | 44.2 |
| Bottom 20 % of Households | 64.5 | 35.5 |

Source: Calculation based on Survey Data, 2018

According to Table (4), among households in the top quintile, the share of spending in total consumption expenditures is 41.2 percent on food and 58.8 percent on non-food items. Among households in the bottom quintile, out of consumption expenditure, the share of spending on food is 64.5 percent and the share of spending on non-food is 35.5 percent. The share of food expenditures is getting higher and share of non-food spending is getting lower in the lower quintiles whereas the share of food expenditures is lower and share of non-food spending is higher in the higher quintiles.

Table 5 Ratio of Consumption Expenditure to Household Income

| Percent of Households | Consumption Expenditure to Household Income Ratio (%) |
|-------------------------------|---|
| Top 20 % of Households | 47.3 |
| Fourth Quintile of Households | 70.8 |
| Third Quintile of Households | 74.6 |
| Second Quintile of Households | 93.8 |
| Bottom 20 % of Households | 100.1 |

Source: Calculation based on Survey Data, 2018

As shown in the above table, among households in top quintile, consumption expenditure to household income is only 47.3 percent and this ratio is getting higher through lower quintiles and at the bottom, the ratio is 100.1 percent. Therefore, among households in bottom quintile, households spend more than income or almost all income on consumption expenditure. This reflects that these households difficult to stand on household income and might have been in debt or vulnerable to fall into the debt.

According to the survey, the consumption pattern varies between high income and low income households. High and middle income households usually have breakfast outside and sometimes have lunch and dinner at restaurant. Food baskets of low income households rarely include notorious food, fruits, snacks and beverages like soft drinks and the food baskets of high income households are full of such items. Moreover, education expense is also much different between high income and low income households. Students from high income households have higher private tuition fees than those from low income households¹. Most low income households have outstanding debt and it is found that their reasons for taking loans are to pay education and health expenditure. Low income households with students, especially studying at high school level and/or with catastrophic health expenditure are most likely to have debt burden. It is also found that some households take loans for consumption.

Debt Burden on Low-income Households

As mentioned above, some household inevitably have to use lesser share of expenditure on food because of debt burden, paying interest and repaying the loan. Although the survey did not investigate their loan amount, the study attempts to highlight on socioeconomic issues of

¹ Taking private tuition has entrenched in learning environment of Myanmar students. Studying at private hostels and private schools are costly and an average household cannot afford to send their children to study at private education hostels and private schools.

low-income households with debt burden. According to the survey, 26 percent of sample households are in debt (73 household out of 280 sample households).

Lack of access to formal financial services is a root cause of socioeconomic issues putting on low-income households. Since these households do not have access to formal financial sector, they rely on informal money lenders. They take loans at high interest rate ranging from 2 percent to 20 percent per month. They do not need to give collateral for getting loan from loan sharks. Some lenders usually deduct the interest for first month from the principal (the original sum of borrowed money) when loan is lent out. Repaying in installment is not allowed and the borrower must pay interest until the loan is fully repaid. These households can take loan at 2.5 percent per month of lower interest rate from microfinance institutions. However, the loans are lent to a group of borrowers, not to individuals, and the borrowers in the group must guarantee each other. Such a system makes the borrowers difficult to find group partner borrowers.

The study found that some share of household income drain into money lenders, and households in debt have lesser share of income for consuming other food and non-food items. Some people who were heavily in debt and insolvency inevitably fled. In such case, socioeconomic effect of debt burden is costly.

Conclusion

The study could not emphasize on analyzing poverty and inequality trend over time because of the lack of historical data on poverty and inequality for Mandalay City and Mandalay Region. However, the snapshot of income inequality could be developed with a view to exploring to what extent income distribution is uneven among urban households in Mandalay.

Among urban households in Mandalay, income inequality is moderately low Gini coefficient standing at 0.37 or 37 percent. It can be seen that about half of total household income are in the hands of top 20 percent households. Moreover, low-income in the lower and bottom quintiles have extremely high consumption expenditure to household income ratio; and one-fourth of households are in debt, reflecting the fact that these households might have been in the vicious cycles of debt burden and vulnerable to be in debt.

In summing, it should be noted that Gini is an overall measurement and the study of inequality should be much more focused on the real life of households in depth. In the policy perspective, deeper understanding of why the poor are poor and how much is the severity of poverty will lead to better solution towards reducing poverty and inequality in the society.

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Appendix (A)

Township Profile

| Township | Population | No. of Households | No. of Wards | No. of Village Tracts |
|-------------------------|------------------|-------------------|--------------|-----------------------|
| <i>Pyi Gyi Dagun</i> | Total (237,698) | 48,875 | 16 | - |
| | Male (120,794) | | | |
| | Female (116,904) | | | |
| <i>Chan Mya Thar Zi</i> | Total (283,781) | 53,047 | 14 | - |
| | Male (137,528) | | | |
| | Female (146,253) | | | |
| <i>Amarapura</i> | Total (237,618) | 49,626 | 9 | 42 |
| | Male (114,481) | | | |
| | Female (123,137) | | | |

Source: The 2014 Myanmar Population and Housing Census, Pyigyidagun Township Report, Chan Mya Tharzi Township Report and Amarapura Township Report (October, 2017) Department of Population, Ministry of Labor, Immigration and Population.

Appendix (B)

Questionnaire for Household Survey

1. Members of Household

| Sr. | M/F | Age | Occupation/ Student | Education | Salary/Wages/ Income | Remark |
|-----|-----|-----|------------------------|-----------|-------------------------|--------|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

Notes: Domestic Helper will be included in the above table (But please take a note in remark column)

2. Housing

- (Own / Rental)
- Single Family Home (- storeyed)
- Apartment (- storeyed Building) / Live at () Floor

Roof (Bamboo/ Clay/ Zinc)

Wall (Wood/ Concrete/ Others)

Floor (Wood/ Brick/ Others)

3. Expenditure (Monthly) (Just Average)

| Food | Expense | Non-food | Expense |
|--|---------|--|---------|
| Rice | | Fuel for cooking | |
| Meat/Fish | | Clothing & Footwear | |
| Vegetable | | School/Education | |
| Oil | | Training (Computer, Language) | |
| | | Donation/Offer | |
| Eat out (Breakfast/ Lunch/Dinner) | | Interest Payment | |
| Confectionary (Biscuit, Bread, Chocolate) | | Transportation (Fuel, Rent, ..) | |
| Packaged Food (Breakfast Cereals, Instant Noodles, Canned food) | | Telecommunications (Fixed Phone Bill Mobile Phone Bill, Internet Fees (i.e., ADSL) | |
| | | Rent (Housing) | |
| | | Utilities (Electricity, Water & Sanitation) | |
| Beverages (Non- alcoholic) (Juice, soft drinks, ready-to- drink coffee/tea) | | Personal Hygiene (Bath and Shower Products, Laundry products , Mouthwash, Toothbrushes Toothpaste) | |
| Beverages (alcoholic) (Beer, Whisky, Wine) | | Salary of Domestic Helper | |
| Tobacco (Cigarettes, Cigars, Tobacco) | | Healthcare and Fitness | |
| | | Entertainment & Holidays | |

4. Saving

Saving (Monthly? / Sometimes?)

Group Savings..... Informal

Cooperative Microfinance

Savings and Loans Association (At work)

Savings at Bank (Bank deposit)

Buying Stocks/ T-Bonds/T-Bills

Others

Interest Received per month

Interest Rate

5. Borrowing/ Debt

- Purpose: For Business (Start-up/ Expansion)
- For Health / Medical Treatment / Hospitalization
- For school expense
- For repaying old debt
- For consumption
- For others / social

Source of Loan : Friends / Relatives/ Parents

- Business partner
- Money Lender (Informal)
- Daily Refund (*Nay-pyan-toe*)
- Cooperative
- Saving & Loan Association
- Pawn shop (Licensed)
- Microfinance / Microcredit
- Bank
- Others

Interest Payment per month

Interest Rate

Repayment Period