

**SAVINGS OF LOW INCOME HOUSEHOLDS IN
NORTHERN STATES OF MALAYSIA**

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**SAVINGS OF LOW INCOME HOUSEHOLDS IN
NORTHERN STATES OF MALAYSIA**

by

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LIST OF ABBREVIATIONS

AIH	Absolute Income Hypothesis
COICOP	Classification of Individual Consumption according to Purpose
DOS	Department of Statistics
GDP	Gross Domestic Product
HES	Household Expenditure Survey
LCH	Life Cycle Hypothesis
MPC	Marginal Propensity to Consume
MPS	Marginal Propensity to Save
OGM	Overlapping Generation Model
PIH	Permanent Income Hypothesis
RIH	Relative Income Hypothesis
ROSCA	Rotating Savings and Credit Association
RUT	Research University Team
TPB	Theory of Planned Behaviour

TABUNGAN ISI RUMAH BERPENDAPATAN RENDAH DI NEGERI- NEGERI UTARA MALAYSIA

ABSTRAK

Pada umumnya, tabungan didefinisikan sebagai lebih pendapatan daripada penggunaan. Isi rumah melakukan tabungan apabila mempunyai lebih pendapatan dan isi rumah menggunakan tabungan apabila mempunyai pengurangan dalam pendapatan. Namun begitu, apabila isu isi rumah berpendapatan rendah dibincangkan, bagaimana isi rumah berpendapatan rendah boleh melakukan tabungan jika pendapatan yang diperolehi adalah rendah? Namun begitu, kajian lepas mendapati isi rumah berpendapatan rendah juga melakukan tabungan. Isi rumah berpendapatan rendah lebih memilih untuk menabung secara tidak formal. Objektif kajian ini ialah yang pertama, mengakses jumlah tabungan isi rumah menggunakan definisi tabungan yang berbeza di Malaysia. Objektif kajian yang kedua ialah menganalisis faktor-faktor tabungan isi rumah di Malaysia. Objektif kajian yang ketiga ialah mengakses mekanisme tabungan yang digunakan oleh isi rumah berpendapatan rendah di negeri-negeri utara Malaysia. Objektif kajian yang terakhir ialah menganalisa impak risiko dan faktor lain terhadap tabungan isi rumah berpendapatan rendah di negeri-negeri utara Malaysia. Di Malaysia, kajian mengenai tabungan isi rumah secara menyeluruh yang terkini dijalankan pada tahun 2004 dengan menggunakan data Kajian Penggunaan Isi Rumah yang diperolehi dari Jabatan Statistik Malaysia. Oleh itu, kajian ini berfokus untuk mengkaji gelagat tabungan isi rumah di negeri-negeri utara di Malaysia. Kajian ini menggunakan dua jenis data iaitu data Kajian Penggunaan Isi Rumah 2014 dan juga data dari penyelidikan *Research University Team* (RUT). Data Kajian Penggunaan Isi Rumah digunakan untuk mengkaji gelagat tabungan isi rumah

di negeri-negeri utara Malaysia dalam pelbagai peringkat pendapatan. Data RUT digunakan khusus untuk mengkaji gelagat tabungan isi rumah berpendapatan rendah di negeri-negeri utara Malaysia. Hasil kajian ini mendapati faktor – faktor yang mempengaruhi gelagat tabungan di negeri – negeri utara Malaysia adalah umur, jantina, tahap pendidikan, tahap pekerjaan, strata dan saiz isi rumah. Kajian ini juga mendapati bahawa 85.71 peratus isi rumah berpendapatan rendah mempunyai tabungan. 64.97 peratus isi rumah berpendapatan rendah menabung di dalam bentuk harta benda dan 53.74 peratus isi rumah menabung di dalam bentuk tunai. Tabungan dalam bentuk aset mempunyai pilihan yang paling rendah iaitu sebanyak 37.41 peratus. Faktor-faktor yang mempengaruhi tabungan isi rumah berpendapatan rendah di negeri-negeri utara Malaysia ialah strata, etnik, jantina, saiz isi rumah, jumlah isi rumah yang bekerja, bantuan kerajaan, persepsi terhadap kemudahan ke institusi pengajian tinggi, persepsi terhadap kebolehan untuk menabung and persepsi terhadap kecukupan pendapatan. Hasil kajian mendapati ketua isi rumah yang mempunyai tahap pendidikan tertiar mempunyai tabungan yang tinggi berbanding ketua isi rumah dengan tahap pendidikan yang lain. Oleh itu, usaha kerajaan yang sedia ada dalam menggalakan tahap pendidikan tertiar patut diteruskan. Selain itu, hasil kajian ini juga menemukan bahawa isi rumah yang menerima bantuan kerajaan lebih cenderung untuk tidak menabung berbanding isi rumah yang tidak menerima bantuan kerajaan. Ini menunjukkan bantuan kerajaan yang diberikan mampu membantu isi rumah dalam jangka masa pendek, namun insentif ini tidak membantu isi rumah dalam jangka masa panjang. Oleh itu, bantuan kerajaan perlu diberi pembaharuan untuk membantu isi rumah bukan hanya dalam jangka masa pendek, namun dalam jangka masa panjang.

SAVINGS OF LOW INCOME HOUSEHOLDS IN NORTHERN STATES OF MALAYSIA

ABSTRACT

Savings is measured as income less expenditure. Households save when there is an excess income to expenditure, and dissave when income decreases or expenditure increases due to unexpected events. This volatile atmosphere leads us to question as to how low-income households save. Studies show that low-income households do save using informal savings mechanisms. The first objective of this study is to assess the amount of household savings with different savings measurements in Malaysia. The second objective is to analyse the determinants of household savings in Malaysia. The third objective is to assess the savings mechanism used by the low income households in the Northern States of Malaysia. The last objective of this study is to assess the impact of risks and other factors towards the savings of low income households in the northern states of Malaysia. In Malaysia, there have been studies on savings behaviour. The recent study used the Households Expenditure Survey (HES) data for the year 2004. To extend the studies of households savings in Malaysia, a new study were done to explore the savings behaviour of households in the Northern States of Malaysia using the HES data for the year 2014, and Research University Team (RUT) survey data for the year 2016. HES data is used to study the savings behaviour of different household groups while the RUT survey data focuses on low-income households. Both data focus on the Northern States of Malaysia. The study found that the factors affecting the savings behaviour of households in the Northern States of Malaysia are age, gender, educational attainment, employment status, strata and household size. For the case study on low-income households, the study found that low-income households do save. The study found that 85.71% of households do

save. About 64.97% of low-income households save in wealth savings and 53.74% save in cash savings. Assets savings has the lowest choice of savings mechanism at 37.41%. The factors affecting savings behaviour of low-income households in the Northern States of Malaysia are strata, ethnicity, gender, household size, number of income earners, government assistance, perceptions to higher institutions, perceptions of ability to save and perceptions on the sufficiency of income. There are some policy implications for this study. The result shows that the head of households with tertiary education has higher savings compared to households headed by households with other levels of education. So, the current government's effort to promote tertiary education should be continued. Other than that, the study also finds that households that received government assistance are more likely to have no savings compared to households that did not receive government assistance. This shows that government assistance does help the households in the short term but not in the long term. So, the government should help, especially low-income households to sustain their life in the long term. So, the government should help, especially the low income households to sustain their life in long term. The government can also encourage the low income households to keep aside some amount of the money from the government assistance for savings. An awareness campaign can be done to encourage the low income households to save.

Chapter 1

Introduction

1.1 Introduction to Savings

Keynes (1936) defined savings as a part of disposable income households do not spend. Savings can be in various forms such as funds in a passbook savings account, a certificate of deposit, stocks or bonds. Savings are also determined by the rule, when income increases, savings will also increase.

Modigliani and Brumberg (1954) proposed a theory of households saving named the Life-Cycle Hypothesis. This hypothesis advocates that people save when they are young and expect to use their savings during their old age. The model also views individuals as smoothing their consumption over their lifetime.

Most economists define savings as deferred consumption. This is a misleading definition that confuses the demand to hold cash with savings. Gale, Sabelhaus, and Hall (1999) defined savings as income minus consumption, or the change in wealth, or the supply of capital. This definition excludes cash balances.

Jappelli and Modigliani (1998) define savings not just as any portion of current income earned that is not consume, but to include the consumption that is used to provide purchasing power for later expenditure, such as retirement consumption.

Different definitions of savings produced different interpretations and the factors affecting households' savings. One approach is to consider all forms of savings, including housing, financial assets and other components of wealth. The other approach is to examine a definition of savings that focuses on the active or flow

components which make up the difference between income and consumption. Neither savings concept is superior to the other. Measures that include capital gains are more comprehensive in that they include all wealth accumulation regardless of the form it takes.

1.2 Savings measurements

There are many ways of measuring savings (Audenis, Gregoir, & Louvot, 2002). A common approach to measuring savings is using the conventional income minus expenditure measurements. Income minus expenditure is mostly used in the study of savings (Faridi & Bashir, 2010; Kempson & Finney, 2009). Expenditure includes expenditure on durable goods and non-durable goods.

There are also arguments of using expenditure on durable goods as savings (Jalava & Kavonius, 2008; Kopcke, Munneli, & Cook, 1991). Durable goods can be sold for exchange of money during the hardship. This then can be regarded as savings. However, taking the amount of the actual values of the expenditure as savings might result in higher savings values. This due to the differences in the value of the item during the buying process and the selling process (Jalava & Kavonius, 2008; Kopcke et al., 1991).

Other than that, some studies considered house ownership as a type of savings. House ownership can be considered a form of financial accumulation (Halket & Vasudev, 2014). However, some argue it is not a valid form of savings, especially the house in which the owners are living in (Swift, 1964).

There are some study that measured education as a savings. Expenditure on education can be considered an investment for the future. Excluding education from monthly expenditure is also another type of savings measurements.

1.3 Savings Mechanisms

Savings can be mandatory and private (Jappelli & Modigliani,2005). Mandatory savings refers to contributions to social security while private savings is the difference between total and mandatory savings. In this study, we concentrate exclusively on exploring private savings. Private savings can be divided into stock and flow savings.

Stock savings is savings in terms of assets and wealth, while flow savings is savings in terms of cash. Stock savings is defined as the assets or capital invested for future returns. It can also be called investment in durables goods such as land, livestock and buildings. Flow savings is defined as putting cash aside and parking it in extremely safe and liquid securities of accounts. Flow savings are more liquid compared to stock savings.

1.3.1 Cash Savings

Cash savings can be kept in formal financial or informal financial institutions, particularly banks. Informal financial institutions refer to wherever people store their money outside of an organisation that takes responsibility for the funds such as under one's bed or in community-based institutions such as Rotating Savings and Credit Association (ROSCA).

1.3.1(a) Cash Savings in Formal Institutions

Cash savings can be in a savings accounts. Savings account is an account with a formal financial institution wherein money is kept. Money can be kept in a savings account until the owner needs to use it for emergencies or to purchase expensive items.

Formal financial institutions offer accounts that earn interest, allowing customers to take advantage of the time value of money. The time value of money means money paid out or received in the future is not equivalent to money paid out or received today. Interest is the price of money. When depositing money at a formal financial institution, an individual may earn money from interest. The amount of interest earned is determined by calculating the percentage of the total amount of money deposited. This rate is known as the interest rate. The formal financial institutions are perceived to have bureaucratic and complex administrative procedures (Bond & Townsend, 1996). They mainly focus on a large scale, well-off and literate clients, who are able to understand their procedures and meet their requirements.

1.3.1(b) Cash Savings in Informal Institutions

Cash savings in informal institutions refers to places used as savings avenues such as personal containers or personal premises. This method may work for short-term savings and a small amount of money with exposure to risks such as fire or burglary. The types of informal institutions differ based on demographic and societal traditions. Some studies shows that these informal types of savings are largely used by low-income households (Banerjee, Duflo, Glennester, & Kinnan, 2013; Collins, Morduch, Rutherford, & Ruthven, 2009; Kempson & Finney, 2009; Rutherford, 2000).

1.3.2 Wealth and Assets Savings

Wealth is a form of savings that includes durable goods such as house and cars. Savings in terms of bonds also can be considered as wealth. This type of savings earns a high rate of return. Such wealth can generate income. Usually, this type of savings is characteristic of the top 20 income groups. High-income groups are usually more focused on the wealth accumulation types of investment. Deaton (1991) says that households will build up assets in good years to use in bad years. Savings in terms of assets help households to liquidate their assets to get money. Assets are easy to liquidate compared to wealth, particularly jewellery. Assets can also be kept in terms of livestock.

1.3.2(a) Wealth and Assets savings in Formal Institutions

Wealth savings in formal institutions are also considered an investment. These types of savings are common for high-income households. These investments take time to earn returns. With lending investments, a person buys a debt that is expected to be repaid. Traditional wealth savings include bonds which are low-risk, low-reward investments. This means they are thought to be a safer investment, but their return is usually low. Bonds and certificate of deposits (CD) are popular choices of wealth savings in formal institutions.

Bonds is an umbrella term for any debt investment. When you buy bonds, you loan money to an entity (a corporation or the government, for example) and they pay you back over a set period with a fixed interest rate. Another big chunk of your portfolio will probably be made up of bonds. There are plenty of different choices when it comes to bonds. There are government bonds, municipal bonds or corporate

bonds. Within each of those categories, there is a wide variety of maturities to select from, ranging from a matter of days to 30 years or more.

A certificate of deposits (CD) is a promissory note issued by a bank in exchange for money. CD is a type of savings account, but a little different. One of the main differences of CD and savings account is the liquidity of cash. Money from CD cannot be taken out at any time as the money is left in the account for a set period. In return, a higher interest rate will be offered based on the period of investment.

1.3.2(b) Wealth and Assets savings in Informal Institutions

Certain tangible assets are regarded as property or wealth. Their possession gives households a sense of worth and security. Land is pre-eminently the most desirable form of property. There are other less expensive items, and households save by acquiring these. Assets, once converted into property, tend to be immobile. Lands used to be a kind of property that can be used by all income groups – mostly from inheritance and rural areas. However, the high increase in land prices and land development, make the ownership of land, even in rural areas, mostly for high-income groups.

Gold jewellery is an efficient means of savings. The asset is very readily realised, and the value of gold is more certain. Households that retain jewellery finds it worth much more than was originally paid for it. Savings in gold is a culturally defined method of saving.

A wife expects that her husband will buy her jewellery to wear at weddings and other feasts. A man who has given jewellery to his wife can feel that the family has something in reserve for a crisis, but he cannot expect to use the jewellery as he

pleases. To be readily available, it is necessary for the wife to be convinced of the desirability of the expenditure. If the family faces hardship, a wife would allow her jewellery to be pawned or returned without demur.

The ownership of cattle and cows is another favoured method of holding wealth. This might appear to be better regarded as a form of production rather than as savings. Cattle and cows multiply, they can be eaten or sold, and, if one owns a bull, work in the rice fields. But pasture is scarce, and keeping cattle and cows involves a great deal of work.

1.4 Savings Motive

As mentioned before, savings is the portion of income not spent on current expenditures. Since a person or a households does not know what will happen in the future, money should be saved to pay for unexpected events or emergencies.

There are different types of motives that drive savings. Keynes (1936) listed the precautionary motive, life-cycle motive, intertemporal substitution motive, the improvement motive, the independence motive, the bequest motive and the avarice motive as motives for savings. Browning and Lusardi (1996) added the downpayment motive.

Retirement as a saving motive was suggested by the Life-Cycle Hypothesis (Ando & Modigliani, 1963; Modigliani & Brumberg, 1954), and the bequest motive was inherent in Friedman's Permanent Income Hypothesis (Friedman, 1957). Precautionary savings can be interpreted as "rainy days" savings.

Katona (1975) showed that in the United States in the 1960s, people saved for emergencies, to have funds in reserve for necessities, for retirement or old age, for

their children's needs, to buy a house or durable goods, and for holidays. Xiao and Noring (1994) examined eight motives reported by consumers and found them to be associated with family financial resources. As household resources increased, respondents tended to report different motives for saving, which the researchers interpreted as reflective of hierarchical household financial needs based on Maslow's (1954) theory.

Others have also proposed hierarchical structures of saving motives based on Maslow's theory. Lindqvist (1981) proposed a structure of reasons for saving where at the lowest level is the need to handle cash to deal with short-term financial goals. The second level is the need to have a precautionary reserve of money. The third level includes a large amount of money to buy something expensive and at the top level is the need to manage accumulated wealth. The various levels of reasons for saving correspond to different types of savers.

Xiao and Noring (1994) explored the nature between consumers' perceived motives for saving and households' financial resources. Low-income consumers were found to be more likely to report saving for daily expenses, while the middle-income group was more likely to report saving for emergencies, and the high-income group was more likely to report saving for growth. Controlling for assets and net worth, the same patterns emerged. Families with few resources save mainly to provide for daily expenses. When the family resources increase, the motivation to save for emergencies also increases. At the highest income levels, motivations concerning retirement, children and growth (for advancing the standard of living) are important.

The other motives are investing for a house, paying back debts, providing for children's education, and purchasing durable goods. The bequest motive is relatively

less important. In a cross-cultural study, Webley, Burlando, and Viner (2000) compared the saving motivations of Italians, English and Israeli respondents. In comparison to the English and Israeli group, Italians were more inclined to save as much as possible. . They controlled their expenditure more easily and preferred to have more substantial reserves put aside. The important saving motives for them were to save for their children's education and medical care. For the English respondents, on the other hand, saving for future purchases was more important.

1.5 Introduction to Risks

Risk is defined as future uncertainty about deviation from expected earnings or expected outcome. It is characterised by a known or unknown probability distribution of events. All individuals, households, communities or nations face multiple risks from different sources, whether they are natural (e.g., earthquakes, illness) or man-made (e.g., unemployment, environmental degradation, war). These risks cannot be prevented, and if they materialise, they can negatively impact individuals, households, communities and/or regions in an unpredictable manner. These uncertain events are themselves characterised by their magnitude (including size and spread), their frequency and duration, and their history – all of which affect a household's vulnerability from risk (Holzmann & Jørgensen, 2001).

Risk can be categorized into natural risks, health risks, life cycle risks, social risks, economic risks, political risks and environmental risks (Holzmann & Jørgensen, 2001). Table 1.1 presents examples of each type of risk.

Table 1.1 Categories and Examples of Risks.

Categories of risks	Examples of risks
Natural risks	Heavy rainfall, landslide, volcanic eruptions, earthquakes, floods, hurricanes, droughts, strong winds.
Health risks	Illness, injury, accidents, disability, epidemics (malaria).
Life cycle risks	Birth, maternity, old age, family break up, death
Social risks	Crime, domestic, violence, terrorism, gangs, war, social upheaval
Economic risks	Unemployment, harvest failure, business failure, resettlement, output collapse, balance of payments shock, financial crisis, currency crisis, technological or trade-induced terms of trade shocks.
Political risks	Discrimination, riots, political unrest.
Environmental risks	Pollution, deforestation, land degradation, nuclear disaster

Source: Holzmann and Jørgensen (2001)

A risk can push an already income poor household further into poverty, or drive a non-poor household below the income poverty line. Therefore, exposure to uninsured risk can cause undesirable welfare outcomes such as income poverty, malnutrition, low-income education levels or low life expectancy (Hoogeveen, Tesliuc, Vakis, & Dercon, 2004).

For example, a storm or a flood might cause a decline in physical assets or livestock and could also reduce income. It might have limited effects on wealthy households but tends to have long-term effects on poor households. Figure 1.1 shows the asset accumulation paths of wealthy and poor households. The horizontal axis measures time and the vertical axis measures assets stocks and income level.

A wealthier household has the initial assets stock at point *A* while a poorer household has a lower initial assets stock at point *B*. If no risks occurred, the poorer household might be able to follow the assets accumulation path and catch up with the wealthier household. With the occurrence of risks, the asset levels of the wealthy and poor households fall to point *C* and point *D* respectively.

The shock might also reduce current incomes of both households (Carter, Little, Mogues, & Negatu, 2007). The effect of income on households is shown at point *E*. When there is an unexpected risk, changes in consumption pattern will affect the savings of households. During this time, the savings will be used to cover the expenses of unexpected risks.

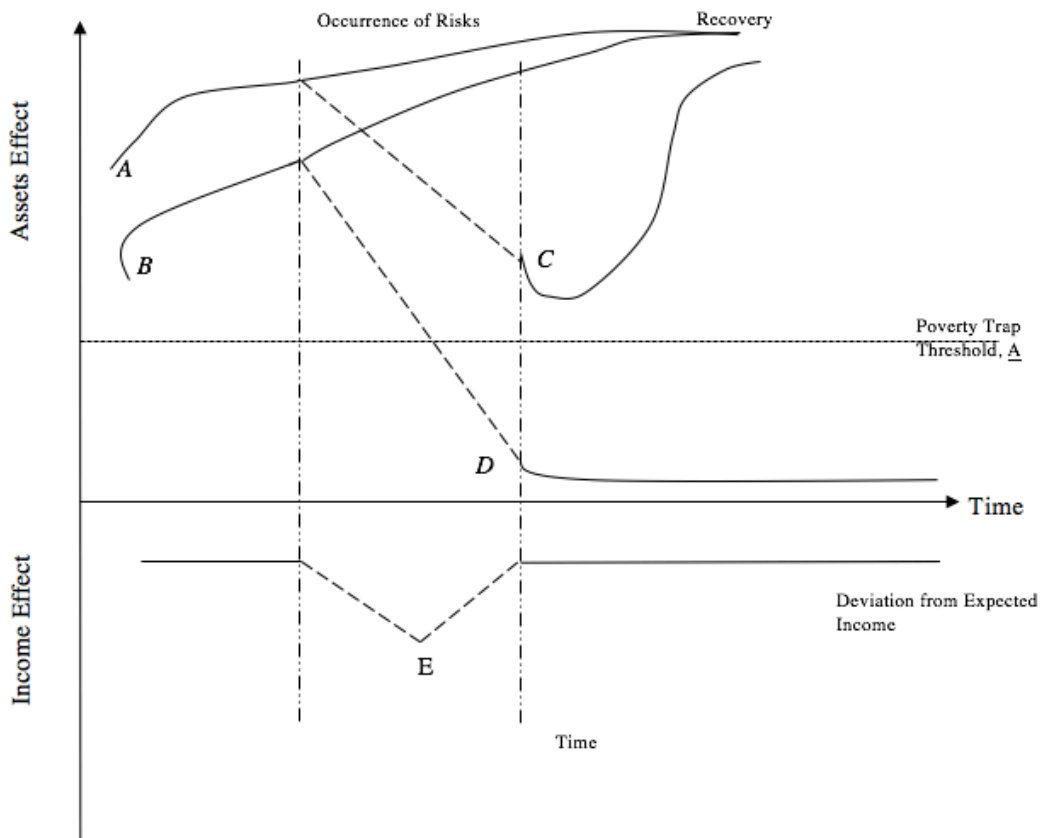


Figure 1.1: Accumulation path of households.
Source: Carter et al. (2007)

Based on Figure 1.1, a household with limited access to financial markets might have to sell their assets to keep consumption smooth. However, unfavourable assets price swings might occur when many households sell assets in order to keep up with the basic consumption, which could lead to those households falling into a poverty trap (Carter et al., 2007). A household that falls below the poverty trap would

be expected to recover at a slower pace and could even be unable to accumulate assets. The household would thus stay poor, rather than re-joining its convergent pre-shock trajectory (Carter & Barrett, 2006; Carter et al., 2007).

When facing risks, households are expected to be able to employ external resources such as insurance and credit as coping strategies. However, not many households have access to those markets, particularly poor households in remote areas and of ethnic minority groups. Many households are expected to also use their resources such as savings, livestock and other physical assets to cope with risks. Households of different wealth levels are also expected to cope with risks differently. Wealthier households that have enough available resources might follow consumption smoothing strategies and are hypothesised to recover quickly from risks.

On the contrary, poor households, which possess limited assets, might have to follow asset smoothing strategies in order to avoid falling into the asset poverty trap. However, cutting consumption further might cause adverse effects on long-term human capital. Therefore, poor households are hypothesised to find it harder to recover from risks.

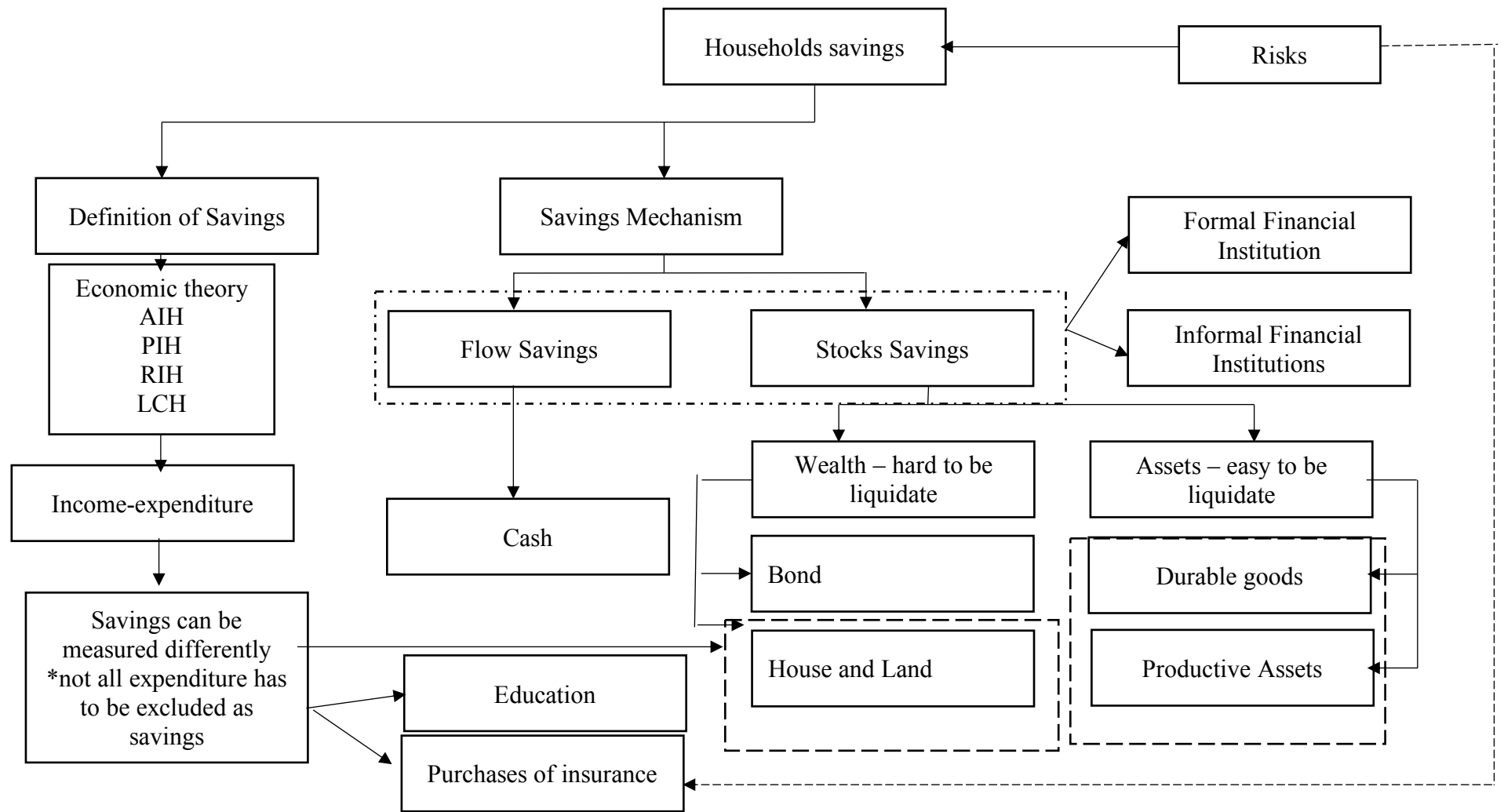


Figure 1.2: Summary of Households Savings

Figure 1.2 shows the components of household savings. The first part of the thesis explained the definition of savings. The four main economic consumption theories introduced how savings were calculated from income and consumption. The second part is the introduction of savings mechanisms. The savings mechanism is divided into flow savings and stocks savings. Flow savings is usually in terms of cash, while stocks savings are usually in terms of assets and wealth. Both saving mechanisms can be carried out using formal or informal financial institutions. Risks are external forces that might affect a household's savings. Insurance is one of the main ways to help households manage the occurrence of risks.

The discussion shows that savings can be measured not only by incomes that are not consumed, but certain components of consumption can also be regarded as savings such as expenditure on education, durables goods and insurance.

1.6 Introduction to Low Income Households

Low-income households receive average household income that is sufficiently low that, given minimum standards for survival and productivity, opportunities for sustaining savings over the long-term or even the short-term are limited (Rosenzweig & Wolpin, 1993).

For low-income households, generating income is challenging. The income received by the low-income groups is sufficiently low that the income is just enough for the households for their consumption (Grinstein-Weiss, Wagner, & Ssewamala, 2006; Rosenzweig & Wolpin, 1993). To worsen matters, sometimes the income is insufficient to meet basic consumption needs. In situations wherein the price of

necessities increases, while the income remains the same, these low-income households struggle the most (Grinstein-Weiss et al., 2006).

In such situations, reducing consumption is a common solution (Beverly & Sherraden, 1999; Lusardi, 2011) and such households dissave instead of saving (Crossley, Emmerson & Leicester, 2012; Grinstein-Weiss et al., 2006; Kempson & Finney, 2009; Manturuk, Dorrance & Riley, 2012).

Working in the agricultural sectors is usually associated with low-income households (Ksoll, Lilleør, Lønborg, & Rasmussen, 2016; Okech, Mimura, Mauldin, & Kim, 2013; Rosenzweig & Wolpin, 2000). Working in the agricultural sector, money depends solely on the success or failure of the crop. There are strong and unpredictable inter-annual fluctuations in income mainly caused by the fact that a major production input, namely rainfall, is unpredictable and volatile (Rosenzweig & Wolpin, 2000). Many unexpected environmental changes can affect their income. The agricultural sector is exposed to environmental risks such as heavy rain and drought. For example, a rubber tapper cannot earn an income when there are rainy days.

These groups are also exposed to economic risks such as failure in crops. For a farmer, a mature cow could die due to disease (Ksoll et al., 2016). For low-income households working in the agriculture sector, the income they receive during a successful harvest is saved for future use. Working in the agriculture sectors, low-income households received minimal or no income during the offseason. This is the time when low-income households will use the savings from their successful harvest for daily use. The risks strategies used are usually prevention strategies as these groups expect to face risks. Even if they are ready to face the risks, the income to face such

risks will be minimal. In the case of natural disasters such as floods, the impact of these unexpected risks is often severe.

Other sectors also have low-income earners. Low-income groups working in the non-agriculture sector receive monthly salaries sufficient only to cover necessities. These groups are highly exposed to economic risks. If they become redundant, then they have little to no wealth to rely on. On top of that, sickness and natural disaster affect them significantly. In conclusion, low-income households work in both agriculture sectors and non-agriculture sectors. When the income is already low, shocks and risks aggravate hardship. The burden of low-income households increases when combined with circumstances typically associated with unstable markets (Grinstein-Weiss et al., 2006).

Despite the insufficiency of income and the struggles faced by low-income households, many still manage to save (Karlan, Ratan, & Zinman, 2014). The amount of savings for low-income households is not as high as the middle and high-income households, but they can cover some non-severe unexpected risks (Rosenzweig & Wolpin, 1993). Savings of low-income households are focused on informal savings compared to formal savings. Most low-income households save under mattresses, in informal groups, or in livestock (Karlan et al., 2014).

Poor households are typically more exposed to risk and least protected from it (Holzmann & Jørgensen, 2001; Hoogeveen et al., 2004). The informal savings used by low-income households are more exposed to risks (Eboh, 2000). Money kept at personal storage is exposed to robbery. Productive assets are also exposed to natural disaster occurrence. With their little savings, exposure to risks puts them at a severe disadvantage (Ksoll et al., 2016).

The motives of savings differ. Savings for low-income households are usually to satisfy their short-term goals, while savings for high-income households are usually for long-term investments (Swift, 1964) . For example, in order to prepare for a feast such as weddings or *hari raya*, these low-income households have to save even though the goods they will purchase are consumption goods (Swift, 1964).

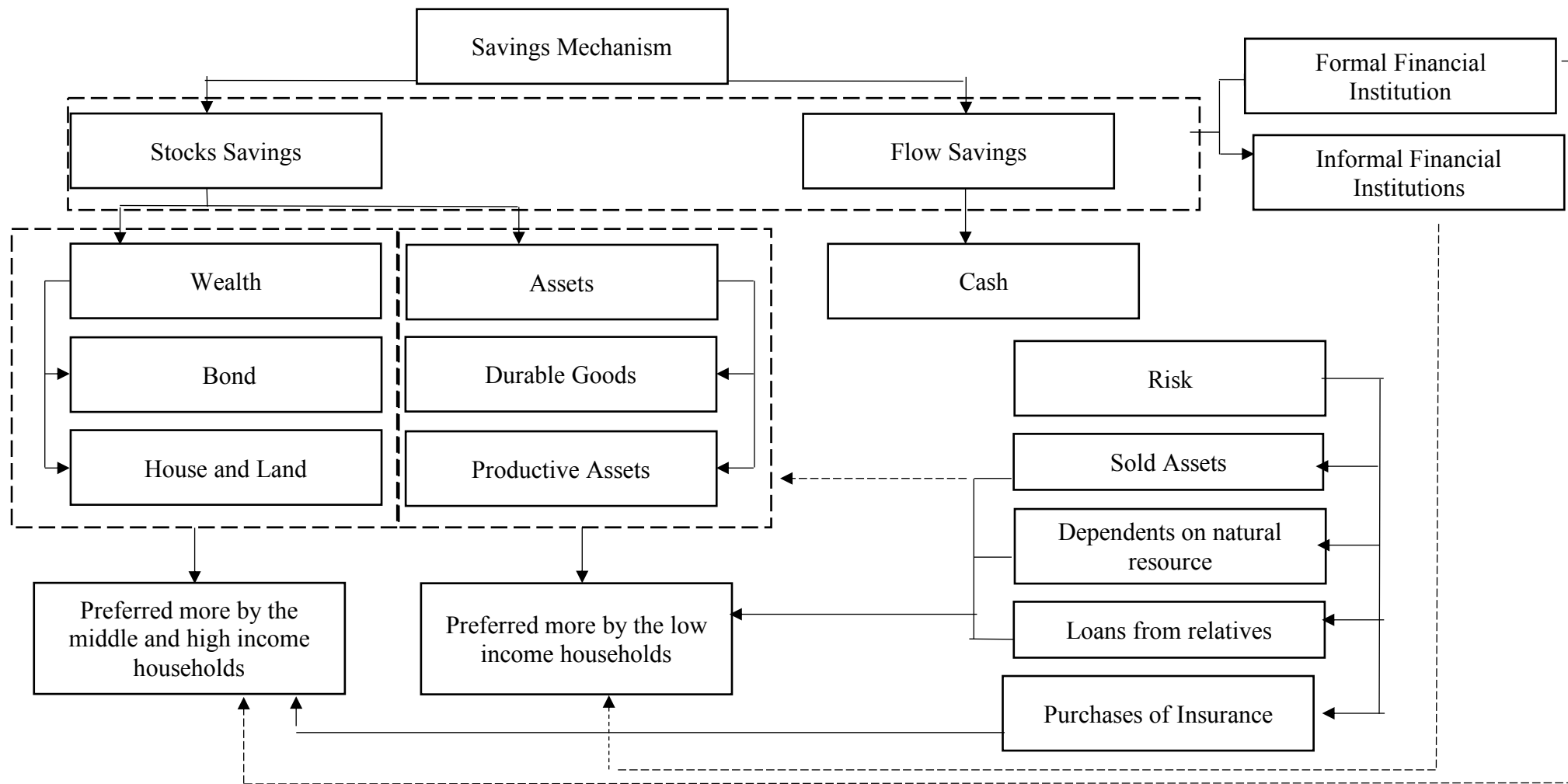


Figure 1.3: Summary of Household Savings of low income households

1.7 Savings in Malaysia

Study of savings behaviour in Malaysia was first conducted by Lee (1971). The study involved 1,356 households in Peninsular Malaysia. The study by Lee (1971) was focused more on the savings motives of the households. Another study that followed Lee (1971) study was done by Arifin, Endut, Ismail, Rasool and Nur (2002) which used the primary data from households in Melaka.

Study of households savings by using Households Expenditure Survey (HES) data was done by Arifin (2003), Pardi, Arifin, Othman, and Endut (2011), and Abdul Razak, Abdul Hakim, and Ismail (2015).

Pardi, Arifin, Othman, and Endut (2011) used the HES data for 2004/2005 to study on the savings behaviour of households at the micro-level. The study calculates the rate of savings based on ethnicity, education level, strata, heads of households' activity, marital status and citizenship. The measurement used to calculate savings in this study are using the income minus consumption method, which is the typical ways of calculating savings.

Based on ethnicity, Indians have the highest average rate of savings of 0.27, followed by Chinese and Malay at 0.26 and other ethnics at 0.22. Heads of households with tertiary education have the highest rate of savings at 0.49, followed by secondary and primary education, and households with no education at 0.19. The urban households have a higher rate of savings at 0.28 and rate of savings of the rural households was 0.195. Heads of households that received income from work have a higher rate of savings at 0.28 than heads of households that did not receive income from work. Married heads of households have a rate of savings at 0.26 compared to single heads of households with only 0.22. The average savings of heads of households

with Malaysian citizenship was 0.25. Pardi et al. (2011) concluded that the average rate of savings in Malaysia in the year 2004 was 0.25. There is no recent study on the savings of Malaysian households.

While Pardi et al. (2011) focused more on the savings rates based on different demographic profile, Abdul Razak et al. (2015) focused on household savings of different income groups. By showing the savings based on two different measurements; which is the regular measurement of income minus consumption and also the measurement of savings by lumping together the other components that can be considered as savings. Abdul Razak et al. (2015) included mortgages payments, durable goods, education, health and insurance as the components that can be considered as savings.

Abdul Khalid (2014) shows savings of households in Malaysia in term of financial assets, property assets and wealth. The results show that 53% of households in Malaysia have no financial assets, 25% of the households had no property assets and 12% of households in Malaysia has no wealth assets. Abdul Khalid (2014) also shows some disparity between different ethnic groups in Malaysia. The Chinese had the highest amount for all asset classes, while the Bumiputeras had the lowest. The study on the households' wealth was done using the Households Income Survey (HIS) data for the year 2009.

In order to show the recent scenario of households' savings in Malaysia, the researcher calculates the savings and saving rate in Malaysia at the micro (household) level. Since income and expenditure data are available for Malaysian households, the researcher used the information to calculate savings and the saving rate. The data on households' income and expenditure were extracted from the Households Income

Survey Report and Households Expenditure Survey Report for the years 2009, 2014 and 2016. Since income and expenditure information are available, the equation by Keynes (1936) is used in this study.

The explanation on the construction of equations to calculate savings and saving rate in Malaysia are as follow:

$$Y = C + S \quad \text{(Identity Equation)} \quad (1.1)$$

$$C_i = \alpha + \beta Y_i \quad \text{(Consumption Equation)} \quad (1.2)$$

$$S_i = \gamma + \delta Y_i \quad \text{(Savings Equation)} \quad (1.3)$$

Where:

C = Consumption Expenditure

S = Savings

Y = Income

α = Autonomous expenditure

γ = Autonomous savings

β = Marginal Propensity to Consume (MPC)

δ = Marginal Propensity to Save (MPS)

Based on basic consumption theory by Keynes, saving is a function of income and expenditure (Equation 1.1). In equations 1.2 and 1.3, consumption and savings are explicitly dependent on income, and the effect of income on consumption and savings is measured by the parameter (β) and parameter (δ). Both parameters can also be

interpreted as $MPC = \frac{\Delta C}{\Delta Y}$ and $MPS = \frac{\Delta S}{\Delta Y}$. The marginal propensity to consume (MPC) is interpreted as the change of consumption when there is a one-unit change in income, and the marginal propensity to save (MPS) is interpreted as a change of savings when there is a one-unit change of income. Other than that, there are also average propensity to consume (APC) and average propensity to save (APS). APC is calculated as the average consumption of savings over average income and APS is calculated as average savings over average income. Total of APC and APS will be equal to one. APS shows the average savings over average income of a certain year, while MPS are used to see the change of savings when there is a one-unit change of income from the previous year. For this discussion, savings are calculated based on the equation 1.1, where the value of savings are based on the average income and average consumption.

The tables below (Table 1.2, Table 1.3 and Table 1.4) show the data of average income and average expenditure which were used to calculate the average savings in Malaysia in the year 2009, 2014 and 2016. The income and expenditure data were extracted from published HES reports for 2009, 2014 and 2016. These reports were extracted from the Department of Statistics website.

Table 1.2 Average income, average expenditure, savings rate and marginal propensity to save in Malaysia by strata 2009, 2014 and 2016

Year	2009	2014	2016
Total			
Average Income (Y)	RM 4,025	RM 6,141	RM 6,958
Average Expenditure (C)	RM 2,190	RM 3,578	RM 4,033
Average Savings (S)	RM 1,835	RM 2,563	RM 2,925
Average propensity to save (APS)	0.46	0.42	0.42
Marginal Propensity to Save (MPS)	-	0.34	0.44
Urban			
Average Income (Y)	RM 4,705	RM 6,833	RM 7,671
Average Expenditure (C)	RM 2,463	RM 3,921	RM 4,402
Average Savings (S)	RM 2,241	RM 2,912	RM 3,269
Average propensity to save (APS)	0.48	0.43	0.43
Marginal Propensity to Save (MPS)	-	0.34	0.43
Rural			
Average Income (Y)	RM 2,545	RM 3,831	RM 4,359
Average Expenditure (C)	RM 1,599	RM 2,431	RM 2,725
Average Savings (S)	RM 946	RM 1,400	RM 1,634
Average propensity to save (APS)	0.37	0.37	0.37
Marginal Propensity to Save (MPS)	-	0.35	0.44

Source: Department of Statistics (2009a; 2009b; 2014a; 2014b; 2016a; 2016b)

Table 1.2 shows that, on average, the amounts of savings had increased from RM 1,835 in 2009 to RM 2,563 in 2014 and RM 2,925 in 2016. However, the average propensity to save shows a different trend. The APS shows a drop from the years 2009 to 2014. There was a drop in the saving rate from the year 2009 from 0.46 to 0.42 which remained the same for 2016. The average propensity to save shows that in 2009, households save 46% of their income and the percentage of savings dropped to 42% in the year 2009. The value of MPS is calculated to show a one-unit change of savings when there is a one-unit change of income. In the year 2014, the propensity to save is 0.34 which increased to 0.44 in the year 2016. This shows that households' savings in Malaysia are increasing.

Moving to the APS by strata, the average saving rate in urban areas is indeed higher than the national average saving rate. The urban average saving rate is about 0.48 in 2009, then dropped to 0.43 in 2014. The APS remained 0.43 in the year 2016. Even with the same savings rate in the years 2014 and 2016, the propensity to save increases from 0.34 in the year 2014 to 0.43 in the year 2016. The same scenario is applied to the households in rural areas which have the same average savings, but the propensity to save increases from 2014 to 2016. The average propensity shows differences between urban and rural areas, the marginal propensity to save are the almost the same for urban area and rural area.

1.7.1 Savings based on different income groups in Malaysia

Table 1.3 shows the average income, average expenditure and average savings between the top 20% group, middle 40% group and bottom 40% group. The savings of different income groups is calculated to show the difference in savings for low-income, middle-income and high-income households. Consumption theory concludes that persons with high-income save more than those with a lower income. The pattern of savings is similar to consumption theory.