

**ANALYZING POVERTY IN  
NORTHERN STATES OF MALAYSIA:  
AN ASSET INDEX APPROACH**

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by

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## LIST OF ABBREVIATIONS

BMI	Body Mass Index
BR1M	Bantuan Rakyat 1 Malaysia
CBN	Cost of Basic Needs
DHS	Demographic Health Survey
EPU	Economic Planning Unit
FEI	Food Energy Intake
FELDA	Federal Land Development Authority
FGT	Foster-Greer-Thorbecke
FT	Federal Territory
HDR	Human Development Report
HES	Household Expenditure Survey
HIS	Household Income Survey
LCE	Lower Certificate of Education
MCA	Multiple Corresponding Analysis
MCE	Malaysia Certificate of Education
MDG	Millenium Development Goals
MFLS	Malaysian Family Life Survey
MOH	Ministry of Health
MPI	Multidimensional Poverty Index
NCCFN	National Coordinating Committee on Food and Nutrition
NCER	North Corridor Economic Region
NEP	New Economic Policy
OPHI	Oxford Poverty and Human Development Initiative
PCA	Principal Component Analysis
PLI	Poverty Line Income
PMR	Penilaian Menengah Rendah
RNIs	Recommended Nutrient Intakes
SDG	Sustainable Development Goals
SES	Socio Economic Status
SME	Small Medium Enterprises
SPM	Sijil Pelajaran Malaysia
SPMV	Sijil Pelajaran Malaysia Vokasional
STPM	Sijil Tinggi Pelajaran Malaysia
UNDC	United Nations Development Corporation
UNDP	United Nations Development Programme
VL	Visceral Leishmaniasis

**MENILAI SEMULA KEMISKINAN DI NEGERI-NEGERI UTARA  
MALAYSIA: PENDEKATAN INDEKS ASET**

**ABSTRAK**

Kini, Malaysia masih menggunakan kaedah Pendapatan Garis Kemiskinan (PGK) untuk mengukur kadar kemiskinan. Kaedah ini hanya menggunakan jumlah pendapatan sebagai faktor untuk mengukur kadar kemiskinan kerana mudah untuk mengumpulkan data. Walau bagaimanapun, jumlah pendapatan sahaja tidak mampu untuk mengukur kadar kemiskinan dengan lebih tepat. Indeks Kemiskinan Multidimensi atau lebih dikenali sebagai *Multidimensional Poverty Index* (MPI) telah diperkenalkan di Malaysia namun ia masih di peringkat awal. Para penyelidik telah memperkenalkan kaedah lain iaitu indeks aset untuk mengukur kadar kemiskinan yang telah digunakan di beberapa buah negara, tetapi masih belum digunakan di Malaysia. Sesebuah isi rumah mungkin dikategorikan sebagai miskin dari segi pendapatan, namun aset yang dimiliki mungkin boleh mengelakkan mereka daripada terperangkap dalam kemiskinan. Begitu juga dengan isi rumah yang dikategorikan sebagai tidak miskin dari segi pendapatan, namun kurang pemilikan aset menyebabkan mereka mempunyai kemungkinan untuk menjadi miskin. Justeru, kajian ini mencapai tiga objektif. Objektif pertama adalah menilai semula kadar kemiskinan 302 isi rumah di negeri-negeri utara Semenanjung Malaysia dengan menggunakan indeks aset dan insiden kemiskinan, manakala objektif kedua adalah mengambil kira perubahan indeks aset dengan kejutan yang dialami isi rumah. Keputusan menunjukkan bahawa lebih ramai isi rumah di negeri-negeri utara Semenanjung Malaysia dikategorikan sebagai miskin apabila kadar kemiskinan diukur menggunakan indeks aset dan juga indeks aset dengan kejutan, berbanding

jumlah pendapatan. Selain itu, isi rumah: i) berbangsa Melayu, ii) tinggal di kawasan bandar, dan iii) yang mempunyai ketua isi rumah yang pertengahan umur mempunyai insiden kemiskinan yang tinggi, manakala isi rumah yang ketuanya tidak berkahwin mempunyai insiden kemiskinan yang rendah. Analisis regresi logistik telah dijalankan untuk mencapai objektif ketiga, iaitu mengenal pasti penentu insiden kemiskinan isi rumah berdasarkan jumlah pendapatan, indeks aset dan indeks aset dengan kejutan. Kajian menunjukkan bahawa kaum India, negeri, jarak dari rumah ke hospital, dan isi rumah yang mempunyai dua hingga empat orang anak yang masih bersekolah merupakan penentu insiden kemiskinan berdasarkan jumlah pendapatan. Penentu insiden kemiskinan berdasarkan indeks aset pula ialah kaum India, negeri Pulau Pinang dan Perak, umur ketua isi rumah, dan jarak dari rumah ke sekolah/kolej, manakala strata merupakan satu-satunya penentu insiden kemiskinan berdasarkan indeks aset dengan kejutan. Kajian ini mencadangkan supaya lebih banyak peluang diwujudkan untuk pendidikan anak-anak dari isi rumah yang miskin, peluang untuk para ibu dan kesamarataan pendapatan untuk menggalakkan lebih penyertaan tenaga buruh dalam kalangan wanita, dan menyemak semula bantuan yang disediakan dengan mengambil kira faktor sosio demografi seperti lokasi. Kajian ini juga menyatakan beberapa implikasi polisi, seperti kerajaan perlu mempertimbangkan indeks aset sebagai pengukur kemiskinan, mengkaji semula garis kemiskinan dan meneruskan program-program yang sedia ada untuk membasmi kemiskinan.

**ANALYZING POVERTY IN NORTHERN STATES OF MALAYSIA:  
AN ASSET INDEX APPROACH**

**ABSTRACT**

Currently, Malaysia is using the Poverty Line Income (PLI) to measure poverty. Within this metric, income is the sole factor for measuring poverty because it is the easiest way to collect data. However, in its simplicity, it fails to capture the broader meaning and implications of poverty. The multidimensional poverty index (MPI) was introduced in Malaysia albeit in its preliminary stage of application to replace the income-based poverty measurement, and asset index which have established by researchers but not used in measuring poverty in Malaysia. A household might be poor in income, but assets may prevent them from being trapped in poverty, while non-poor in income household might have the possibility to be poor if they have less or no assets. With this problem statement, this study achieves three objectives. The first objective is to calculate the poverty of 302 households in the Northern States of Malaysia using the asset index and analyze the current state of poverty incidence with change under asset index, while second objective is to measure the change in asset index under the presence of shocks faced by the households. The results show that there are more households in the Northern States of Malaysia are being interpreted as being ‘poorer’ when poverty is measured using assets and with the presence of shocks as opposed to income alone. Besides that, poverty incidence of Malay households, households living in urban area and households with middle-aged heads have high poverty incidence, while households with a head of households that is single and highly educated have low poverty incidence. To achieve third objective, which is to identify the determinants of

poverty incidence of the households based on income, asset index and asset index with the presence of shocks, the logistic regression analysis were conducted. The results indicate that Indians, state, distance to the hospital from home and households with two to four children in school are determinants of poverty incidence based on income. The determinants of poverty incidence based on the asset index are Indian, Penang and Perak State, the age of the head of household, distance to the education centre from home, and strata are the determinants of poverty incidence with the presence of shocks. This study offered several recommendations such as to create more opportunities for education on those from poor households, more opportunities for mothers and equal wages to encourage more females in labour force participation, and revise aid provided by taking socio-demographic factors such as location into consideration. This study also provides several policy implications, such as the government should consider to implement asset index as another poverty measurement. revise the poverty line and continue poverty alleviation programmes.

# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

The first Millennium Development Goals (MDG) and Sustainable Development Goals (SDG) in the year 2015 stated that poverty is the primary concern globally and plays an important role in the development of a nation. It is the leading concern not only in less developed countries but also in developing and developed countries. Even though a country is well-developed, it still faces the problem of having poor citizens.

There are many definitions of poverty. Smith (1776), as cited in (Sen, 1983) proposed a conceptual definition of poverty as missing “not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without”. He saw poorness as not just a problem of having access to the basic necessities to support one’s life, but also as a social handicap.

Living in poverty is also considered a social handicap, and as such poverty can be defined based on the perception of the society. This is affirmed by Sen (1983) in which poverty is a standard at which one cannot “achieve adequate participation in communal activities and be free from public shame from failure to satisfy conventions”. Sen defined poverty as the lack of what one needs to live within a society. For example, if a person lives in an area which most of the society own cars, poor public transport and not owning a car, that person is considered to be in poverty. However, if the same person lives in an area with proper network of public



transport and most of society are carless, despite not owning a car, that person may be regarded as not being in poverty.

Albelda (1999) found that low-income households spent approximately one-third of their income on food, and the poverty line can be calculated as three times the amount needed for a minimally adequate diet. Therefore, a household is considered poor if they cannot afford to buy food.

Meanwhile, Alcock (p.71, 1997) mentioned that Rowntree has categorized poverty into primary and secondary poverty. Primary poverty is when an income is too low to buy necessities for the maintenance of physical efficiency, while secondary poverty is when an income is sufficient but is spent unwisely.

Townsend (1980), defined poverty as inequities in the distribution of income, capital assets, occupational fringe benefits, current public services and current private services. Blanco (2002) has defined poverty as the complete absence of opportunities, accompanied by high levels of undernourishment, hunger, illiteracy, lack of education, physical and mental ailments, emotional and social instability, unhappiness, sorrow and hopelessness for the future. It is also characterized by a chronic shortage of economic, social and political participation, relegating individuals to exclusion as social beings, preventing access to the benefits of economic and social development and thereby limiting their cultural development.

These definitions highlight that poverty can be defined in many ways and there are many indicators to decide whether a household can be considered poor or non-poor. In summary, poverty is defined based on how it is measured which is either monetary or non-monetary.

## 1.1 Poverty in Malaysia

Poverty eradication in Malaysia has started since more than 40 years ago. It started when Ungku Aziz (1964) stated poverty as “a vicious cycle of low productivity, malnutrition, lack of infrastructures, low incomes and unemployment embedded in structural defects, reinforced by imperfect competition (middlemen monopoly-monopsony) and the relative neglect of the rural economy”. With this regard, Ungku Aziz introduced the Sarong Index (discussed further in chapter 2), which was an easy approach to distinguish the hardcore poor during that time (Rasiah, Mansor & Chandran, 2015).

In the early days, poverty in Malaysia focused on rural areas where most of the poor people lived as well as the Malays because of the high poverty incidence among them (Nair, 2007). Therefore, the New Economic Policy (NEP) (1971-1990) had introduced various poverty eradication strategies such as increasing the access of the poor to land, by introducing the Federal Land Development Authority (FELDA) and other public amenities e.g. housing assistance programme or *Projek Perumahan Rakyat Termiskin* (PPRT).

NEP had contributed to poverty eradication in Malaysia, which shows on a rapid decrease on incidence of poverty across time, from 49.3% in 1970 to 12.4% in 1992 (Department of Statistics Malaysia, 2017a). The poverty incidence for both urban and rural area were also decreasing, from 21.3% in 1970 to 4.7% in 1992 (urban), and 58.7% in 1970 to 21.2% in 1992 (rural). Despite the rapid decrease on poverty incidence in Malaysia, especially in rural areas, a rapid urbanisation had taken place with increasing industrialisation and modernisation (Chamhuri & Yusof 1997). This is also supported by Nair (2007), who mentioned that the strategies and

programmes for the poor were targeted to those living in rural areas and thus show a strong rural bias. Therefore, there were studies that focused on urban poverty, such as by Chamhuri and Yusof (1997) who mentioned the pockets of poverty for the poor in urban areas, and Ragayah (2005) on urban poverty due to migration. In addition, Ragayah (1999) and Soon (2004) affirmed that poverty analysis in Malaysia has moved from focusing on rural areas and Bumiputera, to urban poverty of all ethnic groups.

With the suggestions on poverty eradication mentioned above, the measurement of poverty is also needed to be emphasized in order to identify the poor. Malaysia employed poverty line income (PLI) follows absolute poverty concept, which is income required to purchase a minimum food basket and basic necessities (Nair, 2007). In 2005, the food PLI is calculated based on households' composition and size with daily kilocalorie (kcal) required (Hatta & Ali, 2013), which is discussed further in the next section. Recently, Malaysia adapted Multidimensional Poverty Index (MPI), but only in preliminary stage. The dimensions of poverty is slightly different from the global MPI, as shown in chapter 2. The poverty incidence by using MPI is higher than income PLI, which is 0.8% compared to 0.4% (Ministry of Economic Affairs Malaysia, 2018). This clearly proves that income *per se* is not relevant to measure poverty especially when Malaysia is gearing towards a developed country. MPI is a good poverty approach, but there are also other measurements that can be considered as an alternative in measuring poverty. Wide concepts of poverty make poverty line to be measured in different measurements, as affirmed by Ragayah (2007) that poverty line should be proportion to individual needs, attributes to different regional cost of living and adjusted over time to true cost of living.

### **1.1.1 The Measurement of Poverty in Malaysia**

Malaysia employs the concept of PLI to measure poverty through the absolute poverty concept. PLI was introduced in June 1977 using the 1973 Household Expenditure Survey, which is based on Food Energy Intake (FEI). FEI measures the actual per capita calorie food energy intake of each household and its total income (or expenditure) per capita.

Economic Planning Unit (EPU) adopts the Cost of Basic Needs (CBN) method in defining absolute poor which identifies a consumption bundle deemed to be sufficient to meet basic consumption needs and then estimates the cost of purchasing the bundle. CBN is based on household utility and socially determines whether the household is poor if it consumes less than the basic needs.

Although Malaysia is gearing towards a fully developed nation, it currently employs the calorie poverty measurement. This is because the poverty concepts are different based on the development status of countries, as affirmed by Rasool and Salleh (2012), in which less developed countries adopt calorie poverty while developing countries adopt expenditures or basic needs, and developed countries use relative poverty in emerging economies and subjective well-being to measure poverty.

The measurement of the food component is based on the dietary requirements of Malaysians. The energy requirement for each household is based on the gender and ages of its members, where the advice from Ministry of Health (MOH) was sought to ensure that the food PLI is able to meet the daily kcal requirement of Malaysians (Department of Statistics Malaysia, 2017b). Mirnalini et al. (2008) details the energy and kcal requirements for Malaysia that will provide a balanced

diet that follows the Recommended Nutrient Intakes (RNIs) for Malaysians by National Coordinating Committee on Food and Nutrition (NCCFN) which contains 10-15% calories from protein, 20-30% calories from fat and 55-70% of calories from carbohydrate.

In the 2005 approach, the food PLI for each household is calculated by taking into account the household's size and composition (Hatta & Ali, 2013). Daily kcal levels are converted to monthly kilocalories, which are subsequently multiplied by the price per kcal, and this defines the food PLI for each household. The food PLI is now considered for each household so that poverty profiles are possible by household size, composition, state and stratum-indeed by any household characteristic recorded in the Household Income Survey (HIS). The final food PLI is adjusted upwards by 5% to allow for the cost of condiments.

Chamhuri, Karim, and Hamdan (2012) stated that for the food component in the 2005 approach, the minimum expenditure is based on a daily requirement of 9,910 calories for a family of five persons, while the minimum requirements for clothing and footwear are based on the standards set by the Department of Social Welfare for welfare homes. Other non-food items are based on the level of expenditure of the lower income households, as reported in the Malaysian Household Expenditure Survey (HES).

Table 1.1 shows the 2005-based PLI by state and stratum, and this is the only data available since the 2005 PLI approach. Penang has the highest PLI among the Northern States for both urban and rural households, and Perak is the lowest for urban but for rural, while Perlis has the lowest PLI. Penang has the same food PLI in both urban and rural areas, but for non-food PLI, urban households are higher than

rural households. The other three states have higher food PLI in rural households than urban households and vice versa for non-food PLI. This proves that in those states, people living in rural areas spend more money on food rather than on non-food items.

Table 1.1 2005-based PLIs for the ‘Model Household’\* by State and Stratum, 2004

Region	State	Urban PLI			Rural PLI		
		Food	Non-Food	Total	Food	Non-Food	Total
Northern	Perlis	356	311	667	373	248	621
	Kedah	364	320	683	370	266	636
	Penang	378	373	751	378	326	704
	Perak	374	292	666	375	254	630
Central	Selangor	379	381	760	384	292	677
	F.T. Kuala Lumpur	404	476	880	-	-	-
	F.T. Putrajaya	-	-	-	-	-	-
Southern	Johor	380	331	711	373	274	647
	Melaka	374	335	710	372	282	653
	Negeri Sembilan	368	316	684	382	298	680
East	Kelantan	373	245	618	352	220	572
Coast	Terengganu	389	276	664	398	263	662
	Pahang	391	312	703	388	264	651
East	Sabah	409	412	821	420	382	802
Malaysia	Sarawak	437	342	779	438	318	756
	F.T. Labuan	409	412	821	420	382	802

Source: Economic Planning Unit (2005)

\*Model Household: One male and one female (aged 18-29), two boys aged 3 and 9, and a girl aged 5.

There is no data on Putrajaya during the early years, and Kuala Lumpur has no rural area. Therefore, for the Central region, there is only the 2005-based PLI for the urban areas of Kuala Lumpur, which is higher than the urban and rural areas of Selangor. Both states show higher non-food PLI than the food, except rural Selangor.

In the Southern region, Johor had the highest PLI for urban areas, while for rural areas, Negeri Sembilan has the highest PLI. Pahang has the highest PLI in the urban area and Terengganu in a rural area compared to other states in the East Coast region. Meanwhile, Sabah and Labuan shared the same PLI in both urban and rural areas, which are also the highest PLI in East Malaysia.

All states in Malaysia had food PLI higher than the non-food, except for urban areas in the Central region. The PLI of states in the Central region and East Malaysia are the highest compared to other states. Penang has the highest PLI among states in Northern, Southern and East Coast, while Kelantan is the lowest. There is no recent PLI method for Malaysia as a whole since 2005, and the PLI data in 2016 is shown in Table 1.2.

Table 1.2 Poverty Line Income (PLI) in Peninsular Malaysia and according to strata in 2016

Region/Strata	PLI (RM)
Peninsular Malaysia	960
Urban	970
Rural	880

Source: Department of Statistics Malaysia (2017a)

Table 1.2 shows the PLI in 2016 in Peninsular Malaysia according to strata based on the 2005 PLI method. During that year, the PLI for Peninsular Malaysia is RM 960. However, according to strata, the PLI for urban and rural areas are RM 970 and RM 880 respectively.

## 1.1.2 Poverty Incidence, Income and Asset Ownership of Households in Malaysia

### 1.1.2(a) Poverty Incidence in Malaysia

The poverty incidence in Malaysia is calculated by using the PLI method discussed in section 1.1.1. Poverty incidence in the Northern States across the year is shown in Table 1.3.

Table 1.3 Poverty incidence according to states of Malaysia, 1984-2016

Region	Year	1984	1997	2004	2007	2009	2014	2016
Northern	Perlis	33.7	10.6	6.3	6.8	6.0	0.2	0.1
	Kedah	36.6	11.5	7.0	3.1	5.3	0.3	0.2
	Penang	13.4	1.6	0.3	1.4	1.2	0.3	0.1
	Perak	20.3	4.5	4.9	3.4	3.5	0.7	0.2
Central	Selangor	8.6	1.3	1.0	0.7	0.7	0.2	0.0
	F.T. Kuala Lumpur	4.9	0.1	1.5	1.5	0.7	0.1	0.0
	F.T. Putrajaya	n.a	n.a	n.a	0.0	0.0	0.0	0.0
Southern	Johor	12.2	1.6	2.0	1.5	1.3	0.0	0.0
	Melaka	15.8	3.6	1.8	1.8	0.5	0.1	0.0
	Negeri Sembilan	13.0	4.5	1.4	1.3	0.7	0.4	0.2
East Coast	Kelantan	39.2	19.5	10.6	7.2	4.8	0.9	0.4
	Terengganu	28.9	17.3	15.4	6.4	4.0	0.6	0.4
	Pahang	15.7	4.1	4.0	1.7	2.1	0.7	0.2
East Malaysia	Sabah	33.1	22.1	24.2	16.4	19.7	4.0	2.9
	Sarawak	31.9	7.5	7.5	4.2	5.3	0.9	0.6
	F.T. Labuan	n.a	n.a	2.7	4.2	4.3	1.1	0.0

Source: Department of Statistics Malaysia (2017a)

(Note: n.a – data not available)

The poverty incidence in Perlis decreases from 1984 from 33.7 to 6.3% in 2004. The poverty incidence increases to 6.8% in 2007 and decreases until reaching 0.1% in 2016. The trend is the same for Penang, where the poverty incidence in 1984 is 13.4% and decreases to 0.03% in 2004 and increases to 1.4% in 2007. The poverty incidence of Penang keeps decreasing until 0.1% in 2016. Meanwhile, Kedah and Perak show the same trend. In 1984, Kedah had the poverty incidence of 36.6%, which decreases to 3.1% in 2007, increases to 5.3% in 2009, and decreases back to



0.2% in 2016. The poverty incidence in Perak is 20.3% in 1984 and decreases to 3.4% in 2007. In 2009, the poverty incidence increased to 3.5% and decreased to 0.2% in 2016. The Northern States have different economic conditions. Penang is the most developed compared with the other Northern States. The poverty incidence in early 1984 as stated in Table 1.7 shows that the poverty incidence in Penang is the lowest among the Northern States, which is 13.4%, while poverty incidence for other states was more than 20% and 30%.

Unlike the states in the Northern region, states in the Central and Southern regions show that the poverty incidence did not fluctuate from 1984 until 2016. The poverty incidence in Selangor in 1984 is 8.6% while in Kuala Lumpur is 4.9%. Both states have shown that the poverty incidence keeps decreasing until reaching zero in 2016. On the other hand, Putrajaya has zero poverty incidence for the period. For the Southern region, Johor, Melaka and Negeri Sembilan had poverty incidence of 12.2%, 15.8% and 13% in 1984 respectively. The poverty incidence for those states decreased until reaching zero in 2016 (Johor and Melaka), and 0.2% for Negeri Sembilan.

Although the poverty incidence in 2016 in the East Coast region is higher than the Northern region (0.4% for both Kelantan and Terengganu), the trend is the same as the Southern region. The poverty incidence of Kelantan and Terengganu in 1984 is 39.2% and 28.9%. Pahang had a poverty incidence of 15.7% in 1984 which decreased to 0.2% in 2016. For states in East Malaysia, the poverty incidence in Sabah in 1984 is 33.1%, which decreased to 22.1% in 1997, increased to 24.2% in 2004, decreased to 16.4% in 2007, increased to 19.7%, and continued to decrease until reaching 2.9% in 2016. Meanwhile, the poverty incidence in Sarawak in 1984 is 31.9% which decreased to 4.2% in 2007. In 2009, Sarawak increased its poverty

incidence to 5.3%, which then decreased to 0.6% in 2016. Poverty in Labuan in 2004 was 2.7%, which increased to 4.2% and 4.3% in 2007 and 2009 respectively and decreased to zero in 2016.

### 1.1.2(b) Income of Households in Malaysia

Table 1.4 shows the median and mean household income according to states and gender in Malaysia. The previous section showed the poverty incidence of households in Malaysia. The 2016 data shows that the poverty incidence in all states was low. Therefore the household income must be high to ensure that there are fewer poor households.

Table 1.4 Median and mean household income, according to states and gender of head of household, Malaysia 2016

	Median			Mean		
	Total	Male	Female	Total	Male	Female
Malaysia	5,228	5,455	4,145	6,958	7,254	5,462
Johor	5,652	5,824	4,376	6,928	7,195	5,242
Kedah	3,811	3,955	2,758	4,971	5,205	3,878
Kelantan	3,079	3,191	2,571	4,214	4,367	3,575
Melaka	5,588	5,873	4,142	6,849	7,205	5,104
Negeri Sembilan	4,579	4,812	3,512	5,887	6,205	4,344
Pahang	3,979	4,040	3,612	5,012	5,161	4,169
Penang	5,409	5,767	4,111	6,771	7,149	5,262
Perak	4,006	4,194	3,172	5,065	5,359	3,874
Perlis	4,204	4,304	3,254	4,998	5,176	3,632
Selangor	7,225	7,421	6,231	9,463	9,732	7,807
Terengganu	4,694	4,782	4,006	5,776	5,904	5,023
Sabah	4,110	4,144	3,463	5,354	5,538	4,577
Sarawak	4,163	4,344	3,381	5,387	5,613	4,382
F.T.Kuala Lumpur	9,073	9,367	7,640	11,692	12,110	9,679
F.T. Labuan	5,928	6,005	5,496	8,174	8,349	6,629
F.T. Putrajaya	8,275	8,706	5,232	11,555	12,059	6,654

Source: Department of Statistics Malaysia (2017a)

The median household income in Malaysia is RM 5,228 in total, and RM 5,455 and RM 4,145 for male and female heads of households respectively. The mean household income is RM 6,958 in total, while for male and female heads of household, the mean is RM 7,254 and RM 5,462 respectively.

Kelantan has the lowest median household income, which is RM 3,079, followed by Kedah (RM 3,811), Pahang (RM 3,979) and Perak (RM 4,006). Besides that, Kelantan and Kedah are the bottom two for mean household income, which is RM 4,214 and RM 4,971 respectively, followed by Perlis (RM 4,998) and Pahang (RM 5,012).

Kedah and Perak have a low median household income, and for mean household income, Kedah and Perlis are among the lowest. Despite the low mean and median income, the poverty incidence of households in Northern states is among the lowest, except for rural Perak. Also, households in Northern states do not show a low percentage of assets overall. The difference in trends makes the Northern states the most suitable for this study, where we can see whether the trend is changing if the asset index is used for measuring poverty.

### **1.1.2(c) Asset Ownership of Households in Malaysia**

Table 1.5 shows the assets owned by the households in Malaysia. The data are obtained from the 2016 Household Income Survey (HIS) data by the Department of Statistics Malaysia, which is the most recent data available. The asset ownership based on the data includes vehicles owned (car, motorcycle and bicycle), air conditioner, washing machine, refrigerator, gas or electric stove, microwave oven, water filter, personal computer, laptop, tablet, subscription internet at home, mobile phone, fixed-line, digital camera or video, radio or hifi, video or VCD or DVD, television, and paid TV channel. Data of asset ownership in Malaysia is less than the assets suggested as shown in Table 2.3.

Almost all households in Putrajaya own a gas or electric stove, with a percentage of 99.8%. Sabah has the lowest percentage of households owning the item with 94.8%, followed by Melaka (97.2%) and Sarawak (97.3%). On the other hand, Kuala Lumpur has the highest percentage of households owning a microwave oven with 67.2%. Households in Kelantan have the least percentage of households owning microwave ovens (20.6%), followed by Kedah (23.9%) and Sabah (24.4%). Kuala Lumpur also has the highest percentage of households owning water filters with 76.7%, while Kelantan and Sarawak shared the same percentage (29.4%), which is the lowest. This is followed by 30.8% for Sabah and 37.1% for Perak.

Table 1.5 Percentage of households in Malaysia by items owned, 2016

Percentage of Households by Items Owned (2016)	Northern				Central			Southern			East Coast			East Malaysia		
	Perlis	Kedah	Penang	Perak	Selangor	F.T. Kuala Lumpur	F.T. Putrajaya	Johor	Malacca	Negeri Sembilan	Kelantan	Terengganu	Pahang	Sabah	Sarawak	F.T. Labuan
Car	85.1	80.2	84.3	80.7	92.3	94.3	97.5	88.2	88.1	86.7	76.6	85.5	84.7	70.5	74.0	88.2
Motorcycle	90.6	85.2	73.2	77.8	61.4	57.0	55.7	74.6	74.9	73.5	84.4	85.6	80.1	28.6	51.4	43.1
Bicycle	47.2	33.4	29.2	42.7	29.6	20.4	38.1	35.4	37.5	28.1	30.8	39.2	35.5	12.6	18.1	18.9
Air conditioner	41.1	37.8	55.9	50.8	61.3	65.0	52.0	50.8	53.5	51.1	23.8	27.4	36.6	31.9	43.0	63.3
Washing machine	97.5	95.5	98.0	95.4	97.8	99.4	99.8	98.2	96.7	96.6	94.2	97.8	96.3	81.9	86.1	96.0
Refrigerator	99.0	98.4	99.3	98.3	99.5	99.9	100.0	99.3	99.0	99.1	97.8	99.2	98.4	92.6	96.4	98.4
Gas/electric stove	98.9	98.6	98.4	98.4	99.6	99.2	99.8	98.0	97.2	98.1	97.9	98.2	98.2	94.8	97.3	97.8
Microwave oven	43.1	23.9	41.1	26.7	42.9	67.2	53.8	34.2	31.9	28.9	20.6	30.6	33.5	24.4	32.4	42.8
Water filter	53.6	38.5	57.4	37.1	51.1	76.7	60.3	45.5	48.2	48.2	29.4	41.2	41.0	29.4	30.8	50.4
Personal computer	16.8	12.6	24.0	16.6	25.9	36.0	23.8	18.8	16.2	16.1	9.5	14.8	12.7	13.6	12.5	20.0
Laptop	46.7	37.6	55.2	39.9	62.1	82.6	90.5	50.9	48.8	45.9	33.9	60.5	42.5	46.2	47.1	62.9
Tablet	32.1	18.6	42.6	24.2	43.2	78.0	70.4	33.0	23.8	31.3	18.6	48.9	20.1	25.3	28.3	40.1
Subscription internet at home	89.7	79.2	76.9	72.4	82.2	96.1	96.5	85.9	84.7	56.6	49.6	70.9	79.7	55.5	65.6	73.7
Mobile phone	97.9	97.7	98.0	95.6	99.7	99.7	99.8	98.1	97.6	97.2	96.2	98.1	97.6	95.5	96.7	99.1
Fixed-line	23.5	20.0	33.4	35.5	28.7	35.7	20.3	27.5	33.0	34.3	10.5	19.1	23.5	16.0	20.3	34.8
Digital camera/video	22.4	19.7	32.5	20.2	30.4	58.7	36.9	24.4	39.9	17.1	10.1	20.2	15.4	14.6	20.7	18.9
Radio/Hifi	94.9	87.8	90.6	92.7	96.1	99.4	99.8	94.4	89.5	72.7	64.5	91.0	88.1	70.9	87.4	69.9
Video/VCD/DVD	47.7	37.4	58.4	40.0	41.1	69.3	29.2	59.6	49.2	39.3	19.7	34.0	38.3	44.6	69.2	44.8
Television	99.2	97.4	99.1	98.0	99.1	99.7	99.6	99.1	97.8	99.0	97.2	98.8	97.7	92.6	97.4	96.8
Paid TV Channel	93.9	51.3	71.7	62.7	79.4	93.0	84.5	66.4	77.9	84.2	59.4	65.7	73.6	64.6	55.6	89.9

Source: Department of Statistics Malaysia (2017a)

Besides that, only 9.5% of households in Kelantan own personal computers, which is the lowest among all of the states in Malaysia. This is followed by Sarawak (12.5%) and Kedah (12.6%). Kuala Lumpur has the highest percentage with 36%. The highest percentage of households that own laptops is Putrajaya with 90.5%. Households in Kelantan have the lowest percentage with 33.9%, followed by Kedah and Perak with 37.6% and 39.9% respectively. On the other hand, Kuala Lumpur has the highest percentage of households owning tablets with 78%. Kedah and Kelantan have the lowest percentage with 18.6%, followed by Pahang (20.1%) and Melaka (23.8%).

Putrajaya has the highest percentage of households that have internet subscription at home with 96.5%. Kelantan has the lowest percentage with 49.6%, followed by Sabah (55.5%) and Negeri Sembilan (56.6%). 99.8% of households in Putrajaya have mobile phones, which is the highest among all of the states, while Sabah is the lowest with only 95.5%, followed by Perak and Kelantan with 95.6% and 96.2% respectively. 35.7% of households in Kuala Lumpur have fixed-lines, while Kelantan has the lowest percentage of households with fixed-lines with 10.5%, followed by Sabah (16%) and Terengganu (19.1%).

Households in Kuala Lumpur also have the highest percentage of households that own digital or video cameras with 58.7%. Kelantan has the lowest percentage of households that own the item with 10.1%, followed by Sabah (14.6%) and Pahang (15.4%). Putrajaya has the highest percentage of households owning a radio or hifi with 99.8%. Households in Kelantan have the lowest percentage of households owning radio or hifi (64.5%), followed by Labuan (69.9%) and Sabah (70.9%). Kuala Lumpur has the highest percentage of households owning a video, VCD or

DVD player with 69.3%, while Kelantan has the lowest percentage (19.7%), followed by Putrajaya with 29.2% and Terengganu with 34%.

Meanwhile, Sabah recorded the lowest percentage of households that own televisions with 92.6%. It is followed by Labuan (96.8%) and Kelantan (97.2%). Kuala Lumpur has the highest percentage with 99.7%. The state with the highest percentage of households subscribing to paid TV channels is Perlis with 93.9%. Households in Kedah have the lowest percentage with 51.3%, followed by Sarawak and Kelantan with 55.6% and 59.4% respectively.

Penang and Perlis are the two states among the Northern states with the highest percentage of households in term of items owned, except for fixed-line, in which Perak has the highest percentage (35.5%). Penang has the highest percentage of households that own air conditioners (55.9%), washing machine (98%), refrigerator (99.3%), water filter (57.4%), personal computer (24%), laptop (55.2%), tablet (42.6%), mobile phone (98%), digital camera or video (32.5%), and video, VCD or DVD (58.4%). On the other hand, Perlis has the highest percentage of households that own a car (85.1%), motorcycle (90.6%), bicycle (47.2%), gas or electric stove (98.9%), microwave oven (43.1%), subscription internet at home (89.7%), radio or hifi (94.9%), television (99.2%), and paid TV channel (93.9%).

Table 1.5 shows that washing machine, refrigerator, and gas or electric stove are items that most of the households in Northern states owned with more than 90%. This shows that these items are most needed and necessary for the households. This is true for other states as well. Besides that, telecommunication (mobile phone) and entertainment items (television) are owned by more than 90% of households. Car, radio or hifi also record high percentages of ownership of more than 80%, while

motorcycle and subscription internet at home has more than 70% for households in the Northern States.

In contrast, personal computer and a digital camera or video are among the items that are least owned by households in the Northern States. Therefore, it can be concluded that these items are not necessary for households. Moreover, nowadays people prefer to own laptops more than personal computers, as affirmed by Demb, Erickson and Hawkins-Wilding (2004) who found that laptop is more preferable than personal computers.

Most households own a washing machine as shown in Table 1.5. This item uses water the most, besides cooking and showers. As such, clean water is needed. Furthermore, clean water is important not only as a necessity for living but also for health. This is affirmed by United Nations Development Programme (UNDP)'s Human Development Report (2013) which suggested access to clean water as an indicator for the health dimension for MPI.



## 1.2 Northern States of Malaysia



Figure 1.1: Map of Northern states of Malaysia

Figure 1.1 shows the map of the Northern states of Malaysia. There are four Northern states; Perlis, Kedah, Penang and Perak as shaded on the map. The information of each of the states are discussed in the following sections.

### 1.2.1 Perlis

Located in the Northern part of Peninsular Malaysia and bordering Thailand, Perlis is the smallest state in Malaysia, with the total area of 818 square kilometres. The population of Perlis in 2016 is 0.25 million, in which the population for both male and female are 0.13 million (Department of Statistics Malaysia, 2017c). The average size of household is 4.2 persons.

Table 1.6: Mean and median monthly household income, and poverty incidence in Perlis, 2016

	Overall	Urban	Rural
Mean monthly household income (RM)	4,998	5,155	4,736
Median monthly household income (RM)	4,204	4,301	4,062
Poverty incidence (%)	0.1	0.1	0.1

Source: Department of Statistics Malaysia (2017c)

According to the Department of Statistics Malaysia (2017c), the mean monthly household income for Perlis in 2016 is RM 4,998, while in urban and rural areas, the mean monthly household income are RM 5,155 and RM 4,736 respectively. The median monthly household income in general is RM 4,204, RM 4,301 for those living in urban areas and RM 4,062 in rural areas. The poverty rate in Perlis is among the lowest, which is 0.1% in general including in urban and rural areas. Meanwhile, the Perlis Economy Development Agency (2015) reported that the basic monthly average wage for skilled workers in 2014 is RM 2,000, RM 1,200 for semiskilled and RM 700 for unskilled workers. The wage is considered low as it is lower than the PLI which is RM 930. Based on the statistics shown, the unskilled workers are considered poor.

On the other hand, statistics also show that 61.2% of population in Perlis is made up of people aged between 15 to 64 years old. This age group is considered as the productive age group as they are the group that are in the labour force (Department of Statistics Malaysia 2017c). In 2016, 61.6% of the population in Perlis are in labour force, and the labour force participation for male is 76.8%, while female is 46.3%. The unemployment rate in Perlis is 2.9%.

According to the Household Income Survey 2016 by the (Department of Statistics Malaysia, 2017a), sources of household income was categorized into four categories; paid employment, self-employed, property and investment, and current transfer received. Paid employment consists of salary paid by employers, bonus and allowances, free food or concession, and other receipts from employers, while self-employed consists of agricultural and non-agricultural activities. In 2016, most of the sources of household income in Perlis is from paid employment with a percentage of 55.4% in total, 56.7% for urban areas and 52.9% for rural areas. 23.4% of the household income is from self-employed, 20.5% and 28.6% for urban and rural areas respectively.

7.7% of the household income in Perlis is from property and investment, which consist of rental from property, royalty, interest from savings and loan granted, and dividends from shares owned. According to strata, the percentage of household income is 7.8% for urban area and 7.5% in rural area. This category is the lowest source of household income, followed by the current transfer received, which is 13.6%. Current transfer received consists of remittance from other households, pension and other periodical payments. 15.1% of households living in urban areas and 11% in rural areas generate income from current transfer.

Table 1.7: Source of household income in Perlis, 2016

Source of household income	Overall	Urban	Rural
Paid employment	55.4	56.7	52.9
Self-employed	23.4	20.5	28.6
Property and Investment	7.7	7.8	7.5
Current transfer received	13.6	15.1	11.0

Source: Department of Statistics Malaysia (2017c)

### 1.2.2 Kedah

Kedah is located in Northwest of Peninsular Malaysia, with an area of 9,447 square kilometres, with Perlis and Thailand in the North and Perak in the South. The population of Kedah in 2016 is 2.12 million, in which the population for both male and female are 1.08 and 1.04 million respectively (Department of Statistics Malaysia, 2017a). The average size of household is 3.9 persons. Kedah is also known as the Rice Bowl of Malaysia because it is accounting about one third of Malaysia's total production of rice (Mohamad & Jamil, 2012).

Table 1.8: Mean and median monthly household income, and poverty incidence in Kedah, 2016

	Overall	Urban	Rural
Mean monthly household income (RM)	4,971	5,376	3,999
Median monthly household income (RM)	3,811	4,115	3,036
Poverty incidence (%)	0.2	0.1	0.2

Source: Department of Statistics Malaysia (2017d)

According to the Department of Statistics Malaysia (2017d), the mean monthly household income for Kedah in 2016 is RM 4,971, while in urban and rural areas, the mean monthly household income are RM 5,376 and RM 3,999 respectively. The median monthly household income in general is RM 3,811, RM 4,115 for those living in urban areas and RM 3,036 in rural areas. The poverty rate in Kedah is 0.2% in overall and rural area, and 0.1% in urban area. Meanwhile, 64.2% of the populations are in the labour force. The labour force participation for male is 76.5%, while the female is 51.4%. The unemployment rate is 2.9%.

Department of Statistics Malaysia (2017d) stated that most of the sources of household income in Kedah is from paid employment with a percentage of 55.8% in total, 60.2% for urban areas and 41.8% for rural areas. 22% of the household income

is from self-employed, 18.9% and 31.8% for urban and rural areas respectively. In total, 8.6% of the household income in Perlis is from property and investment, while according to strata, the percentage of household income is 8% for urban area and 10.4% in rural area. This category is the lowest source of household income, followed by the current transfer received, which is 13.6% in overall, 12.9% of households living in urban areas and 16% in rural areas generate income from current transfer.

Table 1.9: Source of household income in Kedah, 2016

Source of household income	Overall	Urban	Rural
Paid employment	55.8	60.2	41.8
Self-employed	22.0	18.9	31.8
Property and Investment	8.6	8.0	10.4
Current transfer received	13.6	12.9	16.0

Source: Department of Statistics Malaysia (2017d)

### 1.2.3 Penang

Penang is another Northern state in Malaysia, with Kedah in the East and Perak in the South. It has an area of 1,032 square kilometres, with population of 1.72 million in 2016 (Department of Statistics Malaysia, 2017e) The total population of male and female in Penang are 0.86 million and 0.85 million respectively. The average household size is 3.8 persons.

Table 1.10: Mean and median monthly household income, and poverty incidence in Penang, 2016

	Overall	Urban	Rural
Mean monthly household income (RM)	6,771	6,848	5,337
Median monthly household income (RM)	5,409	5,447	4,365
Poverty incidence (%)	0.1	0.1	0

Source: Department of Statistics Malaysia (2017e)

The mean monthly income for households in Penang in 2016 is RM 6,771, while for urban and rural areas, the mean monthly household income are RM 6,848 and RM 5,337 respectively (Department of Statistics Malaysia, 2017e). The median monthly household income is RM 5,409 in overall, RM 5,447 for those living in urban area and RM 4,365 for rural area. The poverty rate in Penang is also among the lowest, which is 0.1% in overall and also in urban areas. Besides that, the report also showed that there is zero poverty rate in the rural areas in Penang.

The Department of Statistics Malaysia (2017e) reported that the labour force participation in Penang is the highest among the Northern states in Malaysia, with a total percentage of 69%. According to gender, the percentage of male to participate in labour force is 79.9, and 57.9% for the female. The unemployment rate is the lowest, which is 2.1%.

The main source of household income in Penang is paid employment, with a percentage of 63.1%, followed by property and investment, which is 16.7%, self-employed (12.2%), and current transfer (7.9%). According to strata, the percentage for household income from paid employment is 63.2% for household living in urban areas and 62% in rural areas, while for property and investment, the percentage are 16.9 and 12.6 for urban and rural areas respectively. Besides that, the percentage for household income from self-employed are 12% and 17%, while for current transfer the percentage are 7.9% and 8.5% for urban and rural areas respectively.

Table 1.11: Source of household income in Penang, 2016

Source of household income	Overall	Urban	Rural
Paid employment	63.1	63.2	62.0
Self-employed	12.2	12.0	17.0
Property and Investment	16.7	16.9	12.6
Current transfer received	7.9	7.9	8.5

Source: Department of Statistics Malaysia (2017e)

### 1.2.4 Perak

The largest among the Northern states, Perak has an area of 21,038 square kilometres (Department of Statistics Malaysia, 2017f). In 2016, Perak has a population of 2.48 million with a total of 1.26 million male and 1.23 million female. The average household size is 3.7 persons.

Table 1.12: Mean and median monthly household income, and poverty incidence in Perak, 2016

	Overall	Urban	Rural
Mean monthly household income (RM)	5,065	5,403	3,873
Median monthly household income (RM)	4,006	4,209	3,230
Poverty incidence (%)	0.2	0.1	0.5

Source: Department of Statistics Malaysia (2017f)

The mean monthly income for households in Perak in 2016 is RM 5,065, while for urban and rural area the mean monthly household income are RM 5,403 and RM 3,873 respectively (Department of Statistics Malaysia, 2017f). The median monthly household income in general is RM 4,006, RM 4,209 for those living in urban areas and RM 3,230 for rural areas. The poverty rate in Perak is 0.2% in overall, 0.1% for urban areas and 0.5 % for rural areas.

61.7% of the populations are participating in the labour force. The labour force participation for male is 76.1%, while the female is 46.7%. The unemployment rate in Perak is also the highest among the Northern states, which is 3.4%.

Perak also has paid employment as the main source of household income, with a percentage of 54%, followed by current transfer, which is 19.3%, self-employed (16.9%), and property and investment (9.8%). According to strata, the percentage for household income from paid employment is 55.2% for household living in urban area and 48.1% in rural area, while for current transfer, the percentage are 18.9 and 21.4 for urban and rural area respectively. Besides that, the