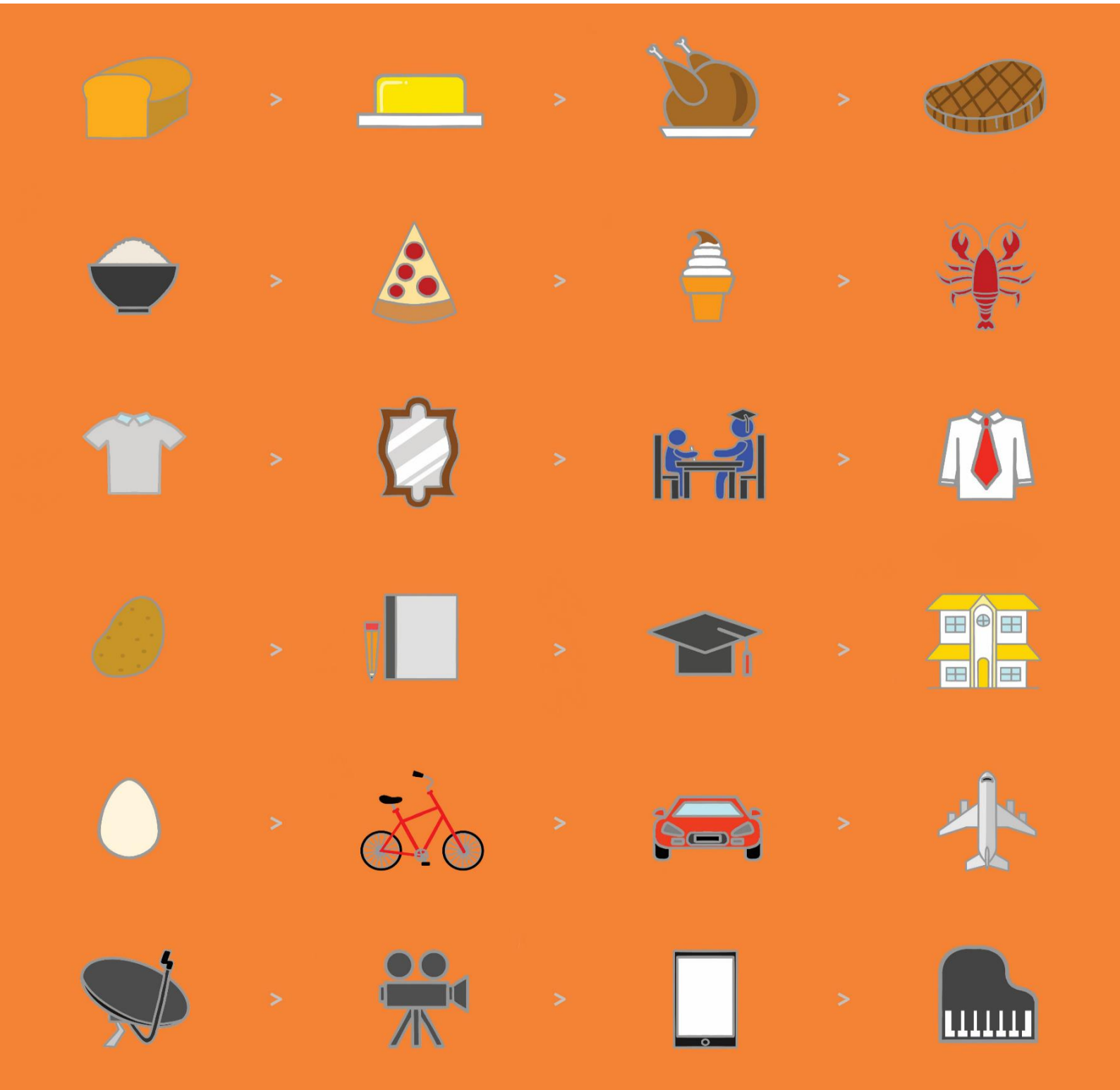
KHAZANAH
RESEARCH
INSTITUTE

DEMARCATING HOUSEHOLDS:
AN INTEGRATED INCOME AND CONSUMPTION ANALYSIS



Demarcating Households: An Integrated Income and Consumption Analysis. – Kuala Lumpur, Malaysia: Khazanah Research Institute

Published December 2019. Published by Khazanah Research Institute at Level 25, Mercu UEM, Jalan Stesen Sentral 5, Kuala Lumpur Sentral 50470 Kuala Lumpur, Malaysia.

Fax: +603 2265 0088; email: enquiries@KRInstitute.org

All queries on rights and licenses should be addressed to the Chairman's Office, Khazanah Research Institute at the address stated above.

Information on Khazanah Research Institute publications and digital products can be found at www.KRInstitute.org

Cover photo by Peh Cher Lyne

This report was prepared by the researchers of Khazanah Research Institute (KRI): Hawati Abdul Hamid, Gregory Ho Wai Son and Suraya Ismail, with excellent research assistance provided by Nur Aseken Md Ya'cob.

It was authorised for publication by the Board of Trustees of KRI.

ACKNOWLEDGEMENTS

The authors are grateful for the guidance and comments by Nungsari Ahmad Radhi, Chairman of KRI and Professor Jomo Kwame Sundaram, Senior Fellow, KRI. Our special thank you goes to Dr Ahmad Zafarullah Abdul Jalil, Senior economist, ASEAN Integration Monitoring Directorate for reviewing the report.

This research is made possible with the access to the Household Income and Basic Amenities Survey and Household Expenditure Survey microdata for 2014 provided by the Department of Statistics, Malaysia. We would like to extend our deepest gratitude to Dato' Sri Dr Mohd Uzir Mahidin, Nazaria Baharudin, Tuan Haji Ibrahim Jantan, Siti Asiah Ahmad, Shahriman Haron, Azura Arzemi, Azizul Abllah, Pazlina Waty Che Pah, Siti Nor Amalina Ghazali and Siti Ruhaya Sujunu for the dynamic teamwork and continuous support in completing this report. The views and opinions expressed in this report are those of KRI and do not reflect the position of the Department of Statistics, Malaysia.

We appreciate the endless support from all colleagues at KRI. We thank Jarud Romadan Khalidi, Christopher Choong, Rachel Gong, Nazihah Muhamad Noor, Nur Thuraya Sazali, Muhammad Nazhan Kamaruzuki, Adam Manaf Mohamed Firouz and Puteri Marjan Megat Muzafar for their editorial contributions. Our appreciation also goes to Kok Chun Chee, Rueben Ananthan Santhana Das, Wan Amirah Wan Usamah, and Puteri Nur Syafawati for their diligent assistance during their time as interns at the Institute.

While the report has benefited tremendously from the contributions of the people mentioned above, it would not be possible without the assistance of many other individuals and agencies that are not mentioned here.

CONTENTS

ABBREVIATION

9MP	:	Ninth Malaysia Plan
10MP	:	Tenth Malaysia Plan
11MP	:	Eleventh Malaysia Plan
b	:	billion
B20	:	Bottom 20%
B40	:	Bottom 40%
BNM	:	*Bank Negara Malaysia* (Central Bank of Malaysia)
BR1M	:	*Bantuan Rakyat 1 Malaysia*
BSH	:	*Bantuan Sara Hidup*
CAGR	:	Compounded Annual Growth Rate
CBN	:	Cost of Basic Needs
COICOP	:	Classification of Individual Consumption According to Purpose
CPI	:	Consumer Price Index
DOS	:	Department of Statistics, Malaysia
e.g.	:	for example
EPF	:	Employee Provident Fund, Malaysia
EPU	:	Economic Planning Unit, Malaysia
FEI	:	Food Energy Intake
GDP	:	Gross Domestic Product
GNP	:	Gross National Product
HES	:	Household Expenditure Survey
HIES	:	Household Income and Expenditure Survey
HIS/BA	:	Household Income and Basic Amenities Survey
ILO	:	International Labour Organisation
m	:	million
M40	:	Middle 40%
M50	:	Middle 50%

ABBREVIATION

MOF	:	Ministry of Finance, Malaysia
MTR-11MP	:	Mid-Term Review Eleventh Malaysian Plan
MPFS	:	Malaysian Population and Family Survey Report
NEAC	:	National Economic Advisory Council
NEM	:	New Economic Model
NEP	:	New Economic Policy
OECD	:	Organisation for Economic Co-operation and Development
PLI	:	Poverty Line Income
PMR	:	*Penilaian Menengah Rendah*
PPR	:	*Program Perumahan Rakyat*
PTPTN	:	*Perbadanan Tabung Pendidikan Tinggi Nasional*
RM	:	Malaysian Ringgit
SOCSO	:	Social Security Organization, Malaysia
SRP	:	*Sijil Rendah Pelajaran*
t	:	trillion
T20	:	Top 20%
T30	:	Top 30%
UNDP	:	The United Nations Development Programme, Malaysia

GLOSSARY

Compound annual growth rate (CAGR)	:	An annualised growth rate derived from a geometric progression ratio which provides a constant growth rate over a specified period. The formula is: CAGR = [(Ending value/ Beginning value) $^{(1/\text{Number of time periods})}$ -1] x 100 *Source: Anson, Fabozzi, and Jones (2010)*
Equivalence scale	:	A measure of the cost of living of a household of a given size and demographic composition, relative to the cost of living of a reference household (usually a single adult), when both households attain the same level of utility or standard of living. *Source: Lewbel, and Pendakur (2008)*
B40 households	:	The bottom 40% households in the income distribution
Consumption bundle	:	Consumption bundles represents a basket of goods and services which are co-consumed by households. Consumption bundles are constructed based on the Expenditure Space methodology.
Equivalised income	:	Equivalised income is an indicator of the economic resources available to a standardised household. It takes into account of the differences in a household's size and composition, and thus is equivalised or made equivalent for all household sizes and compositions. *Source: UNECE (2011)*
Expenditure space	:	The Expenditure Space methodology represents the concept of relatedness among different goods and services consumed by households. It is basically a means to identify ubiquitous or exclusive goods and services, in order to express them as a function of household well-being.
Gini coefficient	:	It is the most commonly used measure of inequality. The coefficient is between 0 for complete equality and 1 for complete inequality. The Gini coefficient may be represented by the area between the line of equality and the Lorenz curve. *Source: (Bundervoet, 2014)*
Hardcore poverty	:	Refers to households with an income below the Food Poverty Line Income. *Source: DOS (2017a)*
Income decile	:	A decile splits the households in the income distribution into ten equal groups (10% of households in each income decile).
Income quintile	:	A quintile splits the households in the income distribution into five equal groups (20% of households in each income quintile).

GLOSSARY

Income quantile	:	A quantile splits the households in the income distribution into four equal groups (25% of households in each income quantile).
Income percentile		A percentile splits the households in the income distribution into 100 equal groups (1.0% of households in each income percentile).
M40 households	:	The middle 40% households in the income distribution
OECD-modified scale	:	Assigns the value of 1.0 to the head of household, 0.5 to each additional adult member and 0.3 to each child. This scale first proposed by Haagenars *et al*. (1994). *Source: OECD (n.d.)*
Oxford scale (Old-OECD scale)		This assigns the value of 1.0 to the head of household, of 0.7 to each additional adult and of 0.5 to each child. This scale was mentioned by OECD (1982) for possible use in countries which have not established their own equivalence scale. *Source: OECD (n.d.)*
Poverty Line Income (PLI)	:	The monthly income earned by a household below which the household would be considered poor. The PLI is composed of the Food PLI and the Non-Food PLI. The Food PLI is defined as the amount of income necessary to meet a household's daily nutritional requirements as determined by the Ministry of Health (MOH). The Non-Food PLI is defined as the amount of income necessary to meet the basic amenities required by a household. *Source: DOS (2017a)*
Square root scale	:	A scale which divides household income by the square root of household size. For instance, a household of four persons has needs twice as much as one composed of a single person. *Source: OECD (n.d.)*
T20 households	:	The top 20% households in the income distribution

EXECUTIVE SUMMARY

Household Economic Well-Being

This report examines approaches in public policies in addressing households' needs, especially those with limited economic resources. It also discusses the welfare policies that have evolved from focusing on households in absolute poverty to those categorised in the poorest 40% households (B40). The analytical framework of this study is anchored on an integrated analysis of household income and consumption—two measures acknowledged in the literature as effective proxies in capturing material well-being and comparing the distribution of living standards across households.

The report addresses the following questions:

1. Is the present B40, M40 and T20 demarcation useful in classifying households according to their economic well-being?
2. Are the "B40" households homogeneous? Is it justifiable to equate the B40 as being "poor" and consequently, as a target group for government policies and assistance?
3. Do the "M40" households demonstrate characteristics of a "middle-income status" group; are they the aspirational/"middle-income class" group?

The findings of this report are based on the state of households in 2014 since we have utilised mostly microdata from the Household Income & Basic Amenities Survey (HIS/BA) and Household Expenditure Survey (HES) for that year.

The Bottom 40% Households

The B40 demarcation is a relative measure designed to monitor progress in addressing inequality and distributional concerns. In recent years, the concept of the B40 has increasingly been used as the target group for social assistance programmes. The focus on the poorest 40% of the population has taken place due to the relative success of reducing absolute poverty in the country. The shift in the focus from poverty eradication to elevating the bottom 40% households' welfare was undertaken on the back of concerns on income inequalities and the vulnerabilities of households due to low income.

Analysis of the characteristics of the 2014 Malaysian households indicates several common characteristics for the B40 households. A large proportion of these households were provided by a single income recipient, typically headed by individuals with lower educational attainment and lower-skilled jobs. Compared to the M40 and T20 households, a relatively higher share of the B40 households were headed by older aged individuals (defined as 60 years and above). Furthermore, the B40 households had much lower residual income (both in absolute and relative terms) compared to the M40 and T20 households. These characteristics appear to be even more pronounced when observing the bottom 20% of households (B20).

Refining the Income-based Approach and Analysing Household Consumption

This report provides the basis that the classification of households can be further refined through:

1. Adopting the most suitable income concept that captures the economic resources available at households' disposal to access goods and services;
2. Considering the varying income distributions at different geographical locations;
3. Factoring the household size and economies of scale of living together to better assess the living standards across households; and
4. Analysing households' consumption levels and patterns to complement the income-based approach.

1. **Adopting the most suitable income concept that captures the economic resources available at households' disposal to access goods and services**
   Differences in the components of income can affect the aggregated income statistics and other distributional measures like inequality and poverty. The definition of income customarily used in the official household income statistics in Malaysia is the gross household monthly income. Gross income does not exclude transfers and statutory payments that have to be set aside making lesser amount of income available to meet current consumption needs and wants.

   Using the net income measure results in a lower Gini coefficient compared to Gini coefficient for gross income, suggesting a more equitable income distribution after the effects of transfers and taxes paid by households are accounted for. Additionally, Gini coefficient is found to be higher when it is calculated based on the production income alone, implying a more unequal income distributions when transfers received by households are not accounted for. Meanwhile, the inclusion of non-monetary income such as imputed rent increases the average household income and reduces income inequality estimation.

2. **Considering the varying income distributions at different geographical locations**
   As the level of economic development is uneven between states, income distributions differ considerably across various geographical locations in Malaysia. Classification of households based on income could also be refined by accounting differences of income distributions in different locations. Using income threshold at national level to classify households into B40, M40 and T20 may discount the living realities of the households in their respective states, painting an inaccurate depiction of their welfare from a localised context.

   Instead, looking at the bottom 40% of the population based on the state-level income thresholds may give a better indicator of the standard of living of these households. Setting a uniform income eligibility criterion for social assistance for all states can be practical as it helps in reducing implementation and delivery complexities. However, applying a one-size-fits-all threshold could overgeneralise Malaysian households and conceal the diverse economic realities in different locations.

3. **Factoring the household sizes and compositions to better assess the living standards across households.**

   The current practice of identifying the households in the B40 group has not been adjusted to account for different household size and composition, as well as the economies of scale arising from living together. This method fails to capture situations in which households may have a higher income but also have a high number of dependants. Standardising household income by utilising an equivalence scale provides a more accurate estimate of living standards that would be comparable across households with different compositions.

   Based on the KRI-estimated scale, the equivalent scale elasticity ranges between 0.63 and 0.67, indicating that around 60% in income is required to maintain the same living standard per additional household member. As household size becomes larger, the marginal effect of each additional member tapers off after the 5th additional member.

   Using the KRI-estimated scale to adjust each household's income, this study finds that 80.2% of households that were initially identified as B40 remained as B40, while the residual B40 households were reclassified as M40. Among households that were initially in the M40 group, around 70.0% remained in the same income group, while another 20.0% moved down to the B40 and 10.0% moved up to the T20. Similarly, for those initially in the T20, only 78.4% remained in the same income cohort and the rest shifted down to M40.

4. **Analysing household consumption to complement the income-based approach**

   Households that were only able to fulfil their basic needs tend to be concentrated approximately in the bottom 20% households (B20 based on equivalised income distribution). These households spent most of their income on food, housing and clothing.

   The consumption pattern of households between the B20 and the T30 (or M50 based on equivalised income distribution) appeared to be remarkably similar. These households demonstrated minor differences in consumption. For example, some households were able to eat out, and some started to send their children for tuition classes or were able to spend more on household furniture.

   Households that exhibited aspirational consumption were concentrated in the top 30% of households (T30 based on equivalised income distribution). Aspirational households refer to households that were able to consume almost all expenditure items, thus endowing themselves with the ability to maintain or invest further for their own upward mobility and protect themselves from financial hazards.

Refining the Demarcation of Households: Tying Income and Consumption as Complementary Measures of Material Well-Being

By incorporating analysis from both consumption and income, it can be argued that the current demarcation which considers B40 and M40 as policy targeting mechanisms can be problematic. In the context of poverty or ensuring minimum living standards, the B40 demarcation would over-extend the coverage since half of those in the B40 may not require the same type of assistance as those in poverty.

Meanwhile, in the context of assisting households to achieve aspirational consumption, the B40 demarcation would exclude those households still constrained by monetary concerns and may need assistance. Meanwhile, we can also conclude that the existing "M40 households" of the income distribution did not exhibit the aspirational consumption.

The distinct characteristics of the households consuming basic needs (with equivalised income of below RM1,196), as well as the similarities found among households on a spectrum of trade-offs/well-being (with equivalised income between RM1,196 and RM3,015), suggest that government's social policies matter to households beyond the B40 group. These findings however entail different approaches in policy prescriptions.

The former i.e. those who are facing difficulty in fulfilling basic needs would require a more focused approach. As the government's capacity to provide social support would be constrained by fiscal conditions, direct welfare assistance in the forms of cash transfers and subsidies ought to be confined to the most vulnerable or neediest group in society. This would translate into a higher allocation per unit of household hence ensuring better assistance being provided to lift them out of their difficulties.

Meanwhile for the latter i.e. the households that are on a spectrum of trade-offs, a more holistic approach is required. Assistance policies should be focused on economic empowerment and widening the access to opportunities to assist households in the middle of the income distribution in achieving higher living standards. These can include enhancing educational attainment, improving employability and entrepreneurial skills. Social safety nets should continue to be strengthened and access to basic amenities and public services should be made universally available.

Malaysia can continue to provide the necessary initiatives in uplifting the well-being of all members of society. It is imperative to continue refining the measurements of welfare and the associated policies in order to achieve our nation's aspirations. A decent life for all households is not only a moral concern, it is also an economic imperative. Economic development can only be enhanced if all households are living decently and therefore able to contribute efficaciously to the development of the nation

While economics is about how people make choices, sociology is about how they don't have any choice to make.

- James Duesenberry (1960) –

CHAPTER

01

CHAPTER 1
INTRODUCTION

1.1 Economic Growth and Redistributive Measures

Economic growth has been a significant contributor to Malaysia's development. Growth is generally needed to eradicate poverty because without it there will be insufficient resources to invest in education, health, infrastructure and other foundations of development[1].

Since economic growth is an important engine of development, the development of a nation is often monitored through macroeconomic indicators such as the gross domestic product (GDP) or the growth of GDP per capita. Some scholars[2] argue against using GDP as a measure of development, and instead suggest looking at the decline of poverty, unemployment, and inequality as indicators of positive development growth.

On the other hand, others[3] have promoted the usage of economic growth in assessing development, though they acknowledge the limitations of solely using GDP as an indicator. They propose utilising the combination of GDP growth and the distributional pattern of income amongst different socio-economic groups; while placing a higher weightage on low-income groups, to monitor a country's development.

Presumably, this redistribution with growth approach would lead to the prioritisation of the poor's income growth, resulting in the reallocation of resources from the rich to the poor through a series of government intervention policies such as taxation and the funding of public services. Thus, through this view, both economic growth and the reduction of relative inequality are targets for policymakers, leading to a more comprehensive view of development.

1.2 Improving Households' Economic Well Being through Welfare Assistance

While economic growth is a common indicator of a country's development, the benefits of growth may not necessarily benefit the majority of society. Aiming for GDP growth alone is insufficient, as is evident from the continued prevalence of dire poverty in many countries which have enjoyed sustained growth[4]. The increasing gap between what is measured by the GDP and how it translates to the welfare of society has led to a growing need for improved measures[5].

[1] Goldin (2018)
[2] Seers (1969)
[3] Chenery et al. (1974)
[4] Goldin (2018)
[5] Stiglitz, Sen and Fitoussi (2010), Coyle (2015)

In this regard, this report is contextualised within the premise that in evaluating and monitoring the economic well-being of a nation, attention should also be given to the progress of households' economic well-being. This suggests looking at alternative measures of capturing society's welfare and standard of living, instead of solely focusing on GDP and GDP per capita growth.

The approach adopted in this report is anchored on quantitative monetary measures by taking household income and consumption as the basis of analysis. It is argued that income and consumption are essential components of society's material well-being[6] and serve as as good approximations (proxies) in comparing the distribution of living standards across households.

Under this approach, there are broadly two common approaches in identifying those in need i.e. first, the absolute approach, based on a certain predetermined set of living standards; and second, the relative approach, which reveals economic circumstances facing a subgroup relative to other subgroups.

Generally, Malaysia has adopted the absolute approach to measure poverty. The poverty line income (PLI) identifies a consumption bundle deemed to be sufficient to meet basic needs and subsequently provide estimates for the cost of purchasing the said bundle. Malaysia's success in reducing the incidence of absolute poverty has led the government to give more emphasis on the relative approach to poverty and well-being in public policy formulation. Since the mid-2000s, in the Ninth Malaysia Plan (9MP), the government has gradually moved the focus toward a "shared prosperity" agenda, with the aims of addressing inequality and raising the standard of living.

The Eleventh Malaysia Plan (11MP) sets the objective of elevating the standard of living of the bottom 40% (B40) of households, extending the government's policy target group from those living below the poverty line to include a greater coverage of the population. Consequently, this demarcation also resulted into two other groups of households namely the middle 40% (M40) and the top 20% (T20).

While this could be a reasonable approach, the choice of the cut-off point that delineates one household from another is a technical decision that could have been decided subjectively. Given that many of the recent assistance programmes aim at addressing the needs of the B40, this study revisits the classification of households and seeks to better understand its effectiveness in channelling resources to the most deprived or vulnerable members of society.

Key questions that this report attempts to address are:

1. Is the present B40, M40 and T20 demarcation useful in classifying households according to their economic well-being?
2. Are the "B40" households homogeneous? Is it justifiable to equate the B40 as being "poor" and consequently, as target groups for government policies and assistance?
3. Do the "M40" households demonstrate characteristics of a "middle-income status" group; are they the aspirational/"middle-income class" group?

[6] OECD (2013)

1.3 Outline of the Report

The structure of the report is outlined below:

This introductory chapter (Chapter 1) provides the objective of the study and outlines the approach and operational definitions adopted throughout the report.

Chapter 2 begins with an overview of the Malaysian households, briefly discussing the evolution of their form and composition over the years. The chapter moves on to discuss the existing practices of classifying households and the use of absolute and relative approaches in monitoring progress over time. The profile of the B40 households and the progress in elevating the living standard of this group is briefly presented.

Chapter 3 discusses the differences in the definitions of income and the "unevenness" in the income distribution between states in Malaysia. This chapter argues that economic disparities in different geographical locations should be considered in measuring living standards and classifying households.

Chapter 4 further proposes how the current income-based approach of demarcating the households could be refined by considering the household size and composition to better reflect the distribution of households' economic well-being. The concept of an equivalence scale is introduced as a tool to "standardise" income and provide better comparisons of living standards across households in Malaysia.

Chapter 5 proposes the consumption-based approach as a complementary measure of material well-being. Households' consumption pattern is analysed to map their behavioural traits and subsequently to examine how this ties back with the way households are demarcated using the income-based approach. A hedonistic view is employed to analyse how well-being is reflected as "household revealed preference" in their consumption choice for a given level of income.

Chapter 6 utilises the findings in Chapter 5 and identifies the thresholds at which Malaysian households begin to fulfil their aspirations.

Chapter 7 combines the findings from the income and consumption perspectives, summarises the key findings and discusses how the results could inform policy-making.

1.4 Sources of Data

Two key datasets used for this publication are the 2014 Household Income & Basic Amenities Survey (HIS/BA 2014) and the 2014 Household Expenditure Survey (HES 2014) from the Department of Statistics Malaysia (DOS). The total samples covered in this study are 48,697 households, representing 6.65 million household at state and strata level (urban-rural). The samples cover only Malaysian households and do not include non-citizen populations.

Given the complexity of obtaining income and consumption information with the associated high costs involved, surveys to collect those two sets of information were usually done separately in the past in Malaysia. The HIS/BA is conducted approximately every two years while the HES is conducted approximately every four years, involving separate sets of individuals. As such, analyses for income and expenditure in the past were done separately as datasets from both sides were not integrated at the household level. This means that although the association between income and expenditure matched accordingly at the aggregated level, they may not be so at the individual household level.

The two surveys—HIS/BA and HES—were conducted simultaneously for the first time in year 2014. Access to microdata for each household (instead of at the aggregated level) has provided us with the opportunities to conduct integrated analyses on both dimensions for each household, rendering improved comprehension about households' economic well-being. With information from both sides linked, household consumption level and patterns can now be compared across income brackets instead of just according to consumption expenditure brackets. Availability of each household's demographic and socio-economic background allows analysis to be made in dimensions that were relatively limited previously, particularly with regards to the profile of particular groups of households. Unless otherwise stated, the majority of the analyses presented in this publication utilised the HIES 2014 data.

Box 1.1: Approaches and Operational Definitions

This section briefly outlines the approach and operational definitions adopted in the study.

1. Unit of Analysis – Households vs Individuals

This report analyses households in order to improve our understanding of their economic well-being. A household refers to an individual person or a group of related or unrelated persons who live together under the same housing arrangement and make common provisions for food and other living essentials. A household is headed by a person—male or female—considered as the head by other members. The household survey methodology specifies that the head of household must be an income recipient with the age of 15 years and above.[7]

In principle, economic well-being is an individual rather than a collective experience, implying the relevance of assessing the well-being of a nation should be at the individual level[8]. However, often, households are used as the unit of analysis. This could be due to practical reasons, particularly in Malaysia, since more comprehensive and relevant datasets are usually available at the household level. While the unit of analysis is different, yet they are not totally contradictory with each other since the well-being of individuals' can be indirectly inferred from the well-being of households[9].

From a theoretical viewpoint, referring to households can be more relevant since many decisions are taken at the household level and to some extent, resources are shared among household members[10]. Analysis at the individual level can sometimes become impractical and less meaningful especially when the household involve dependents like children, disabled and elderly persons who usually do not earn income, but only consume. Their living needs, especially in terms of consumption are typically fulfilled by parents or other household members, reflecting income transfers or exclusive transfers in-kind. Measuring the values of those transfers are often hard and problematic.

A consolidated measurement at household level becomes justifiable and practical as it avoids the need to measure such intra household's transfers while the available economic resources are aptly counted on a net basis.

[7] DOS (2015a)
[8] Canberra Group (2001)
[9] Ibid
[10] Ibid

2. Concept of Well-Being – Multidimensional vs Material Well-Being

At the core of household studies is indeed the well-being of the households and their members. The term "well-being" carries very broad connotations with numerous approaches exist to unravel the meaning. This could encompass from seeking the most basic material needs to a broader set of wants, as well as the attainment of non-material aspects such as happiness and spiritual well-being. Terms like quality of life, living standard, life satisfaction and happiness are often interchangeably used to infer the concept of well-being.

In addressing this definitional question, scholars from different disciplines interpret this in different terms. In the philosophical and anthropological traditions, the emphasis is typically on culture, value and power. Sociologists tend to focus on occupational status and/or education while, economists largely define it with regards to wealth or income. More recently, the distinction between the approaches adopted by the sociologist and economist's traditions has increasingly become less obvious due to the intertwined relationship between occupation and income.

Amartya Sen (1985) has provided one of the most widely used interpretations of the concept of well-being , which involves three main components i.e. (1) Commodities, (2) Functionings and (3) Capabilities[11].

Commodities are basically physical goods and services that are necessary to support life. Functionings reflect the various things that a person may value doing or being. These include being adequately nourished, being free from avoidable diseases or even having attained some level of education. Capabilities basically reflect a person's individual freedom to lead the kind of life they value – they refer to alternative combinations of "functionings" that is feasible for the individual to achieve.

The idea is not new. In 1943, Abraham Maslow described these claims through the "hierarchy of needs" which begins with basic physical needs such as food, shelter and security[12]. When fulfilled, they then go to a higher level of needs that reflect social class, esteem and self-actualisation.

In this regard, the approach to well-being adopted in this report is confined to the economic or material considerations only, hence discounting other subjective measures such as happiness and life satisfaction. It is hoped that more qualitative studies, from anthropological or sociological perspectives, will complement findings on this matter. In this report, the terms living standard, welfare, and economic well-being are often used interchangeably to mean households' material well-being.

[11] Sen (1985)
[12] Maslow (1943)

3. Measures of Material Well-Being – Income vs Consumption

As this study discusses households' well-being strictly from the material perspective, Chapters 2, 3 and 4 anchor the discussions on people's living standards and relative economic well-being based on income as the welfare measure. Incomes signify the economic resources available at people's disposal to gain access to goods and services and to satisfy their needs and wants. In this regard, with all else equal, it is normally assumed that those with higher incomes have higher command over resources which can be used to achieve a certain living standard.

Besides income, consumption is another indicator which is commonly used in practice to measure living standards. Households' needs and wants can be satisfied by consuming goods and services. Similar with income, consumption level is typically assumed to be positively associated with living standards, all else equal. Expenditure data from household survey is often used to measure living standards from the consumption perspective. This is discussed in Chapter 5 and Chapter 6.

Using either consumption or income as an indicator has its own strengths and weaknesses. Consumption tends to be less volatile since—apart from being fulfilled by spending income—it can be smoothened by drawing out wealth and through borrowing. This view is supported by studies such as Cutler and Katz (1992); and Jorgenson and Slesnick (1987), which find stronger relationships between consumption and well-being than between income and well-being. Another reason for using consumption as an indicator instead of income is that households may be more willing to report on what they spend rather than on what they earned.

However, there is a risk that households may underreport their expenditure e.g. spending on luxury goods such as jewellery and art pieces; adult goods like tobacco and alcohol; and illicit items like drugs[13]. Additionally, collecting reliable expenditure data is challenging as they are usually collected retrospectively or on an on-going basis using a consumption diary. Both are onerous to complete, making the information prone to errors and omissions. Furthermore, surveys collecting accurate household expenditure data can be very costly, hence they are conducted less often compared to income surveys[14].

Data collection on income may be more straightforward compared to expenditure data. Nevertheless, this too may suffer several problems in practice such as how income ought to be defined and at what level or unit of analysis it should be measured. The decisions made on these choices can result in different pictures of the situation. Income can be volatile or underreported as people may not be willing to disclose the full extent of their income (due to taxation reasons for example) or may be reluctant to report income earned illegally such as from money laundering, corruption or prostitution[15].

[13] Cutler and Katz (1992), Jorgenson and Slesnick (1987)
[14] OECD (2013)
[15] Ibid.

1.5 Limitations of the Study

1. Only limited to data in 2014

It is worth noting that the scope of this study was limited to the 2014 Household Income and Expenditure Survey (HIES 2014) dataset only. Thus, the findings presented in this report may offer only be a snapshot of the bigger picture. Due to being confined to a year's worth of data, the study was not able to observe long-term structural transformations that may have occurred throughout the developmental phases in Malaysia. In addition, we were not able to observe any substitution effects as those require data from other years.

From the expenditure's perspective, as the HIES 2014 only measures the household composition over a year, potential durable goods that the household may have already obtained prior to the data gathering processes would have been ignored. Additionally, though the expenditure data takes into consideration large value items (like vehicles and housing) up to a year prior to the survey, such purchases do not occur often, despite the household being able to afford it.

2. Considers only material well-being

Analysis of this study is hedonistic in nature, limiting the reflection of the households' welfare to their material well-being alone. While the existence of other estimations of welfare is acknowledged, the study does not take into consideration other measurements of households' standard of living such as "happiness" or "spiritual" levels.

Furthermore, as the study only utilises data from the HIES 2014 survey, we are only able to capture the commodities households have. Though we may derive some of the functioning of the household, we are unable to collect any data regarding a household's capability in leading the life they desire. Thus, we are not able to accurately draw and evaluate the quality of life of these households as per Sen's model of well-being.

3. No indicators on wealth, assets and non-market goods and services

The analysis of consumption patterns in Chapter 5 and Chapter 6 does not include items in group 13 of the Classification of Individual Consumption According to Purpose (COICOP), which comprise non-consumption expenditures including remittances and transfers. Consequently, analyses of households' indebtedness and savings which may influence resources available to households to smoothen their consumption during the survey period were not considered.

The expenditure dataset is constructed based on household expenditure over a given month, whilst also accounting for the purchase of long-term or medium-term durables taking place within one year of the survey period. Hence, the dataset may ignore potential goods and services that households may already own prior to the data gathering process. Public goods and services consumed by households, though can be expressed in monetary terms, may also not be captured in the households' expenditure diaries.

CHAPTER

02

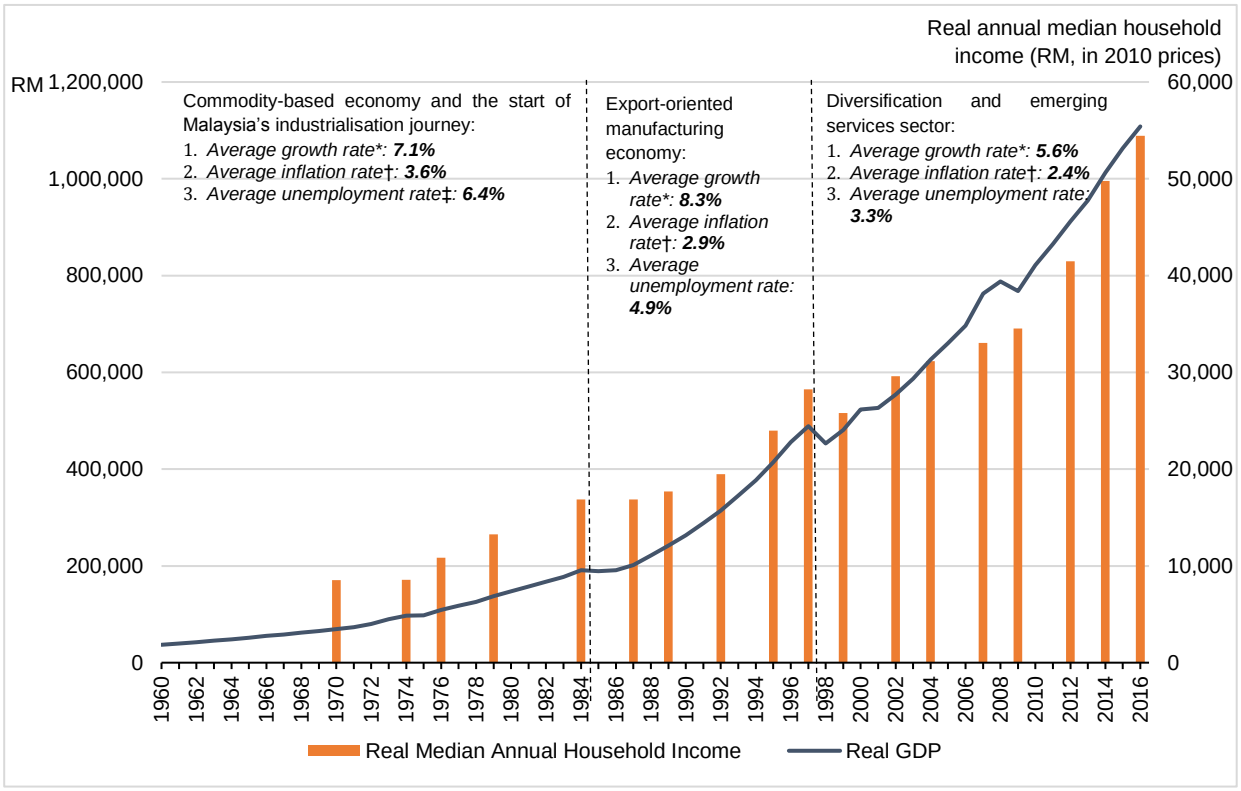
CHAPTER 2
DEMARCATION OF MALAYSIAN HOUSEHOLDS: CURRENT PRACTICES

2.1 Socio-economic Development and Households

The socio-economic development in Malaysia has influenced households in many profound ways. Since the independence of Malaya from British rule in 1957 to the formation of Malaysia in 1963, the country had transformed itself from an agriculture and commodity-based economy to a more diversified economy, marked by the increasing share of the manufacturing and services sectors. Together, these three sectors contributed to a sustained economic growth with real GDP increasing nearly 16-fold, from RM69.0 billion in 1970 to RM1.1 trillion in 2016.

As the national income grew, so did the households' income. The nominal median monthly household income grew around 30-fold from RM166 in 1970 to RM5,228 in 2016. Figure 2.1 illustrates the co-movements in the real GDP growth with the annual real median household income growth[16].

Figure 2.1: Real GDP and Real Annual Median Household Income, 1960 – 2016



Source: KRI (2018)

[16] KRI (2018)

Indicators for basic amenities, poverty, health, education and employment indicate improved living standards for most Malaysians, with inter-state, urban-rural and inter-ethnic disparities narrowing[17]. In 2017, Malaysia scored 0.802 in the Human Development Index (HDI) from 0.643 in 1990, classifying Malaysia as having very-high human development, with longer life expectancy, higher standard of living and knowledge status[18].

Apart from socio-economic development, population growth has also changed Malaysian households over the last three decades. Notably, the rate of household formation has risen faster than the population's growth rate. Between 1980 and 2016, the total number of households increased from 2.5 million to 7.6 million, while the population rose from 13.9 million to 31.6 million[19]. This indicates that although the population grew at a compounded annual rate of 2.3%, households formed faster at 3.2% annually.

While the number of households continues to grow, the size of households has been shrinking. The average household size declined from 5.2 persons in 1980 to 4.1 in 2016[20]. This can be contributed to several factors, one of which is the role of government policies.

In the mid-1960s, the government took a stronger view on family planning and attempted to reduce the annual population growth rate from 3.0% to 2.0%[21]. At that time, rapid population growth was seen as an impediment to the efforts of raising income levels and improving public services. The First Malaysia Plan (1966 – 1970) was designed "to lay the groundwork for less rapid population growth by instituting an effective participation in the process of economic and social development". Subsequently, family planning programmes were introduced to limit the size of families in order to improve populational health and well-being[22].

Second, the positive progress in socio-economic conditions has also changed the size and composition of Malaysian households. For example, increased access to education and employment opportunities has changed the role of women in society. As more women seek higher education and entered the labour market[23], the fertility rate declined from 5.0 in 1970s to around 2.0 in 2016[24]. Concomitantly, young adults have increasingly preferred to marry later in life. Between 1980 and 2014, the mean age at first marriage for women rose from 23.5 to 25.7 years old. Meanwhile for men, the mean age at first marriage has increased from 26.6 to 28.0 years old[25]. Additionally, some chose to delay having children until they were professionally secured or economically stable.

[17] Hawati, Jarud and Jomo (2019)
[18] UNDP (2018)
[19] DOS (1980), DOS (2010) and DOS (2017a). Inclusive of citizens and non-citizens of Malaysia.
[20] Ibid.
[21] EPU (1965), page 15
[22] EPU (1965)
[23] Tang and Tey (2017)
[24] DOS (2017b)
[25] DOS (1990), DOS (2010)

Third, the structural changes in the economy—shifting from agriculture to manufacturing and subsequently to services—have also had a significant impact on society. Employment and economic opportunities that came together with rapid industrialisation have led to growing urbanisation. This led to a massive out-migration from rural to urban areas as many sought better jobs and economic opportunities. While there were only 34.2% households residing in urban areas in 1980[26], the share increased to 71.0% in 2010[27] and 80.0% in 2016[28].

The changing economic landscape and its interaction of migration and urbanisation has also contributed to the changes in the population's living arrangement. While extended families was a common phenomenon more than 30 years ago, there has been a rising trend in living in a nuclear family, increasing from 55.2% in 1980 to 62.8% in 2010[29]. Conversely, the percentage of extended family households has declined from 27.8% to 20.5% in the same period. The percentage of single-person households has also risen from 7.5%[30] to 8.3% during the same period[31].

2.2 Measuring and Monitoring Household Well-Being: From Absolute to Relative Approach

While the improvements in the state of Malaysian households over the decades has been intrinsically linked to the economic development and transformation of the nation, the benefits of growth may not necessarily have trickled down to everyone. This can be made worse when economic growth no longer plays the role of a "rising tide that lifted all people". Fuelled by unequal income and asset distribution, growth can concentrate wealth further, making the rich richer while leaving the poor behind.

Many suggest that economic inequality, often referred as inequality of outcome, can be damaging and destabilising to society. While some level of inequality is unavoidable due to differences in talent, initiative and luck, extreme inequality and deliberate exclusion erode social cohesion, leading to political polarisation and consequently hampering economic growth[32]. This underscores the role of the government in correcting imbalances in the distribution of income and wealth as well as in levelling the playing field and equalising opportunities to improve society's livelihoods.

[26] DOS (1980)
[27] DOS (2010)
[28] DOS (2017a)
[29] DOS (2010)
[30] DOS (2018)
[31] DOS (2010)
[32] Berg and Ostry (2011), Rodrik (1999)

In Malaysia, the welfare and distributional concerns have been at the forefront of the country's public policy and their progress has been largely monitored at the household level using data from household surveys. The Household Income Survey (HIS) was conducted by DOS since 1973. Starting from 1987, the Basic Amenities Survey was conducted together with Household Income Survey and known as Household Income/Basic Amenities Survey (HIS/BA). On the other hand, the first Household Expenditure Survey (HES) was published in 1957/58. The main objective of HES is to collect the information of households' consumption levels and patterns on a comprehensive range of goods and services[33].

During the early period after Malaya gained independence in 1957, welfare policies focused heavily on reducing poverty and providing basic needs, besides narrowing inter-ethnic disparities. The New Economic Policy (NEP) were introduced in 1971 with two-pronged objectives; (1) to eradicate poverty irrespective of race and (2) to eliminate the identification of race with economic function[34].

The eradication of poverty is dependent on the definition of the term "poverty" itself. The absolute poverty approach was adopted with the establishment of the poverty line income (PLI) as an indicator to identify those existing below the minimum standard of living. The line was generally set as a "constant line" across time periods (except for the annual adjustment to account for price changes) to ensure that progress made in eradicating poverty can be monitored over the years.

"Poor households" refer to those whose income fall below a threshold that is considered adequate to cover the cost of consuming basic needs. These needs include food and non-food items such as clothing, housing, transportation and durable household items. A household is considered to be in extreme poverty when its income is less than half of the PLI or insufficient to cover the cost of food.

[33] DOS (n.d.)
[34] EPU (1976), Chapter 4, Outline Perspective Plan 1 (1971-1990)

The first official PLI in Malaysia was formulated in 1977 based on the food and non-food needs of a household of five persons as reference, since the average household size then was around 5.4 persons[35]. The PLI was updated annually to adjust for price changes, and the PLIs for Peninsular Malaysia, Sabah and Sarawak were differentiated to reflect the geographical living cost variations.

The 1977 methodology was later revised in 2005 when the "five-member household" model was found to be an inaccurate representation of the Malaysian household size leading to misclassification of "poor". For example, a one-person household can be classified as poor when the income level is below the five-member household reference even when the income may be sufficient for one person's needs.

On the other hand, a household with more than five members could be inaccurately identified as "non-poor" when the total income is higher than the reference household. Additionally, different standards of living across areas were not adequately taken into account other than the use of different PLIs for Sabah and Sarawak. Acknowledging these weaknesses, the 2005 revision accounted for different household sizes and living costs by state and strata. Moreover, the food component for PLI is calculated based on a balance dietary requirement for males and females and adjusted by age.

Based on the 2016 Household Income and Basic Amenities Survey, the PLI averaged at RM960, RM1,180 and RM1,020 for the poor in Peninsular Malaysia, Sabah and Sarawak, respectively. The thresholds are different between the urban and rural areas and are slightly higher in Sabah and Sarawak, reflecting the living cost differentials.

Using this absolute approach to assess people's living standard, it appears that considerable success has been achieved in lifting people out of poverty. This is manifested by the incidence of absolute poverty falling substantially from almost 50.0% in 1970 to 0.4% in 2016.

Despite the significant reduction in absolute poverty, the government has recognised that people's susceptibility to fall back into poverty due to low incomes or other disadvantaged circumstances remain a serious concern[36]. The government also acknowledged that progress towards reducing poverty is insufficient without also addressing distributional issues in tandem. This led the government to look beyond the poor, extending the focus on low-income groups[37].

Following this new policy emphasis, a relative approach[38] was gradually adopted. This refers to the method that rank the households (or population) according to their incomes—from lowest to highest—then classify them into equal size groups. Depending on analytical types or needs, various groupings can be arranged by partitioning or dividing the households.

[35] UNDP (2007). The five-person model household comprises one male adult aged 20 – 39 years, one female adult aged 20 – 39 years, and three children of either sex with ages of 1 – 3 years, 4 – 6 years, and 7 – 9 years.
[36] EPU (2010, p. 151)
[37] Ibid
[38] Refers to the analytical approach that divide households or people—ordered by income from lowest to highest—into equal size groups to classify them based on their relative position in the income distribution.

For instance, using the "decile" criteria will split the households into ten groups with the same number of households i.e. 10% of the households in each decile. Similarly, the "quintile" splits households into five groups (20% of households in each) and "quantile" splits them into four groups (25% of households in each). The adoption of the relative approach describes the relative position of a household in the income distribution, hence, enabling classification and comparison of living standards among households.

A common application of this relative approach is to "slice" the income distribution for the lowest 40% (i.e. the B40), then the next 40% (the M40) and the next 20% (the T20). This provides a way to "define" the bottom, middle and top households in the income distribution and allows the economic standing between and within income groups to be analysed and compared.

The division of households into B40, M40 and T20 demarcation employs the operative words "slicing" and "defining", which warrants further deliberation. Should we slice the households into these demarcations and then subsequently define the households corresponding economic criteria, or should we define the characteristics of the economic groups and then 'slice' the income distribution? Currently, in the B40, M40 and T20 approach in our country, we appear to be slicing first, and then finding ways to define the households.

The following sections will illustrate the inaccuracies of this current approach to justify government's targeted policies, as well as its inability to allow any meaningful insights on the economic standing between and within income groups to be analysed and compared.

2.3 Approaching the Bottom 40% of Income Distribution: The B40 Households

As the government has shifted its policy focus to the low-income group while simultaneously aiming to address distributional concerns, the relative approach has been gradually adopted with the goal of elevating the well-being of the B40.

Focusing on the B40 to address poverty and distributional issues is not new. The World Bank adopted a similar relative concept in the 1970s, noting that the poorest 40% in developing countries (i.e. equivalent to the B40 in today's discourse) were living in absolute poverty "degraded by disease, illiteracy, malnutrition and squalor"[39].

In 2013, the Bank adopted two goals that simultaneously took into account the poverty and inequality perspectives: (1) to end global extreme poverty, and (2) to promote shared prosperity. To ensure the success in achieving these goals, the growth of the B40's mean income was extensively monitored, and this was compared with the growth of the average household income[40].

[39] McNamara (1980)
[40] World Bank (2016)

As suggested the by the term, the B40 refers to the group of people with the lowest 40% income. Since the nationally representative income distribution data is primarily available from the Household Income Survey (HIS), the interpretation of the B40 group in Malaysia typically refers to the bottom 40% households, calculated based on the distribution of gross monthly household income[41]. However, to use the B40 working definition from the World Bank's reference point in the 1970's as households living in absolute poverty is out-dated and not relevant in our context. To determine that the B40 is a short-hand for the "poor" (those who cannot cover basic needs) warrants further investigation.

Based on the HIES 2014 data, households earning below RM3,852 monthly would fall into the B40 group (Table 2.1). The B40 households' income share to total Malaysian households stood at 16.6% in 2014 while the monthly mean income for this group was RM2,563, and the median was RM2,671.

Notably, the B40's mean income is lower than the median, implying a left-skewed income distribution for the B40 group with many lower income households pulling down the mean income. This contrasted with the M40 and T20 groups whose mean incomes were higher than the median incomes. In 2014, the mean and median income for M40 were RM5,660 and RM5,458, respectively, while for T20 the values were RM14,207 and RM11,552[42].

Table 2.1: Mean, median and income thresholds for B40, M40 and T20, 2014[43] (RM)

	Bottom 40%	Middle 40%	Top 20%
Mean	2,563	5,660	14,207
Median	2,671	5,458	11,552
Income threshold	Below 3,852	3,852 – 8,319	8,320 and above

Source: Authors' calculations based on HIES 2014

The emphasis on the B40 as a policy target group could be traced back to the Ninth Malaysia Plan (9MP). In 2006, the government's five years development policy document briefly highlighted the deterioration of the B40's income share that decreased from 14.0% in 1990 to 13.5% in 2004 while the top 20% (T20) income share increased from 50.0% to 51.2% during the same period. As a result, the national Gini coefficient worsened from 0.442 in 1990 to 0.462 in 2004[44]. To increase the income share of the B40, the 9MP proposed to promote human capital development in order to increase the productivity of the B40[45].

[41] The classification of the B40 could also be derived from income distribution from other data sources although that may not be representative of Malaysians' total population. For example, income distribution based on the Employee Provident Fund (EPF) data only considers the working citizens that contributes to the EPF. Meanwhile distribution based on income tax data typically leave out citizens whose income levels are not taxable.

[42] All numbers here are slightly different from the published official statistics due to minor differences in sample size and post-sampling weightst.

[43] Ibid

[44] EPU (2006, p. 10)

[45] Ibid

The Tenth Malaysia Plan (10MP) went further in shifting the focus from poverty eradication to elevating the B40. It was apparent at that time that despite a significant reduction in absolute poverty, the prevalence of vulnerable groups[46] in society due to low-income or other disadvantaged circumstances remained a serious concern.

It was noted in the 10MP that B40-based policies essentially would not be similar to poverty-centric policies. Instead of the government dispensing aid to targeted groups, programmes had to be designed to ensure that the groups would be provided with access to opportunities which would improve their living standards such as educational attainment, entrepreneurial skill developments as well as access to basic amenities and affordable housing[47]. Programmes were also devised for subgroups with specific needs such as the Bumiputera in Sabah and Sarawak, Orang Asli in Peninsular Malaysia, the Chinese in new villages and the Indian estate workers.

More recently, this renewed direction of the policy target group was manifested in the New Economic Model (NEM) document with an emphasis on inclusive growth:

> *"The NEM will shift the approach from ethnicity to the low-income households. As the economy grows and progresses towards a high-income economy, the focus of redistributive measures should be those on low-income groups. The low income will include those households that fall below the poverty line and also that are in the bottom 40% of the distribution of income"[48].*

Drawing from the strategies outlined in the NEM, the 11MP set a target of "uplifting B40 households towards a middle class society" as one of the focus areas to be achieved by 2020[49]. Three main indicators were identified to monitor the progress of achieving this target:

1. To double the mean monthly income of B40 households from RM 2,537 in 2014 to RM5,270 in 2020.
2. To increase the percentage of B40 households with tertiary educational attainment from 9.0% in 2014 to 20.0% in 2020.
3. To increase the income share of B40 households to national household income from 16.5% in 2014 to 20.0% in 2020.

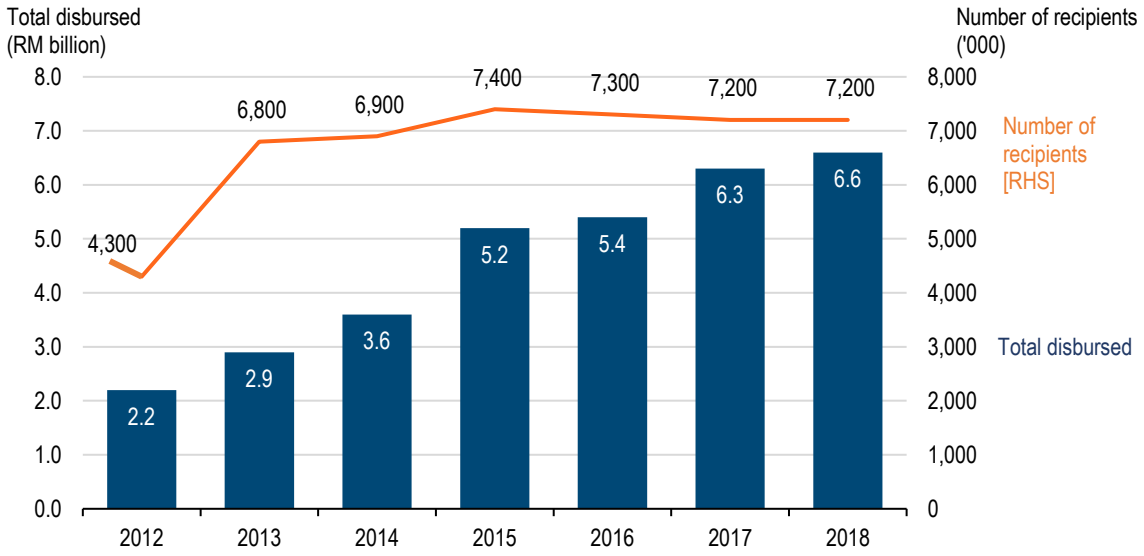
[46] A single definition of vulnerability does not exist. Vulnerability is generally viewed as forward-looking, or ex ante, measure of well-being. Hence, vulnerability differs from the concept of poverty, which assesses current (rather than future) well-being status. At a household level, vulnerability is often defined as the likelihood or risk of being poor or of falling into poverty in the future. Feeny et. al. (2013)
[47] EPU (2010, p. 151)
[48] NEAC (2009, p. 91)
[49] EPU (2015)

These policy targets would then be achieved through:

1. Raising the income and wealth of B40 households;
2. Addressing the increasing cost of living; and
3. Enhancing the delivery system of the B40 household programmes.

Guided by the overarching objective of uplifting the livelihood of the B40 households, budget allocations were channelled accordingly to initiatives that target this group. For example, the cash transfer programme or *Bantuan Rakyat 1 Malaysia* (BR1M), and later redesigned as *Bantuan Sara Hidup* (BSH) aims to cushion the impact of rising living costs. BR1M/BSH was devised for the B40 households, with the total disbursement amounting to RM32.2b between 2012 and 2018[50] (Figure 2.2)

Figure 2.2: Total BR1M/BSH disbursed and number of recipients, 2012-2018



Source: MOF (various years)

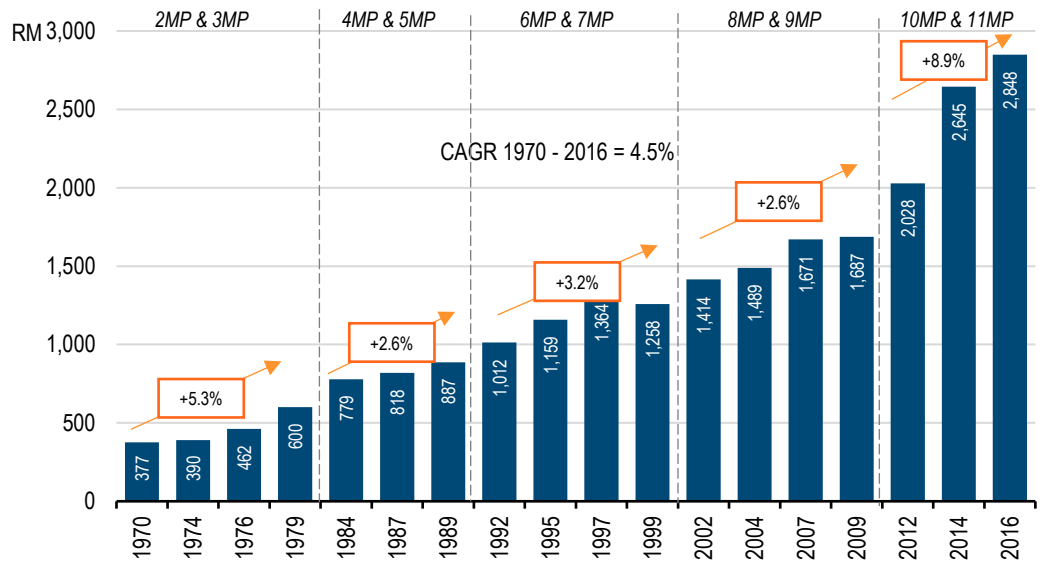
Apart from cash aid, other forms of intervention programmes were also implemented. These included RM1.24b to assist the involvement of B40 households in entrepreneurial activities in 2016[51], RM200m to build MyBeautiful New Homes nationwide in 2017[52], RM328m for schooling assistance and an additional RM200m to increase the loan limits for student from the B40 households in 2018 for the National Higher Education Fund (PTPTN)[53].

[50] MOF (various years)
[51] MOF (2015b)
[52] MOF (2016b)
[53] MOF (2017b)

2.4 Progress of the B40 Households over the Years

The B40's income levels (both in nominal and real terms) have experienced growth since the 1970s. In real terms, the rate of household income growth was at highest during the 10MP and 11MP period, at 8.9%, potentially contributed by the intensified efforts to uplift the well-being of the B40 group (Figure 2.3). Between 1970 and 2016, the growth rates for the B40's incomes were also generally higher than the growth rates of M40 and T20's incomes, albeit much lower in terms of absolute amount.

Figure 2.3: B40 household real monthly mean income growth, 1970 – 2016[54]



Source: Authors' calculations based on HIES 2014

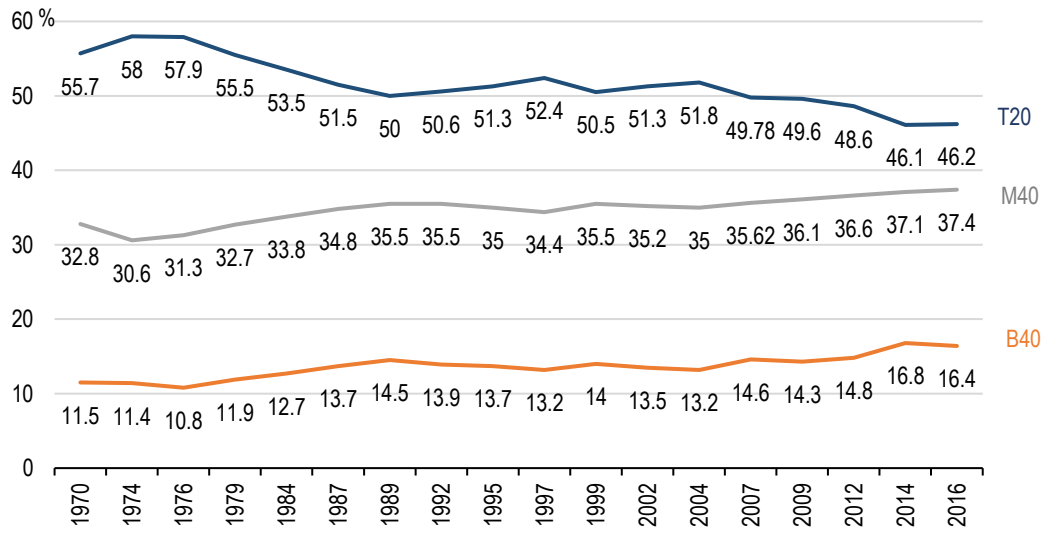
Compared to the absolute poverty measure where interventions can be put in place to reduce or alleviate poverty, the adoption of a relative measure such as the B40 classification inherently means that the bottom 40% of households or population will continue to exist, which may necessitate deliberate policy interventions. In 2014, it was estimated that there were 2.66 million[55] B40 households and the number increased to 2.78 million in 2016[56]. The addition of 120,000 households was due to the formation of new households that rose from 6.67 million to 6.95 million between 2014 and 2016. Compared to the absolute poverty measure (which is based on PLI definition's delineation), the relative measure may increase the number of household recipients for government aid simply due to the higher formation of new households.

[54] Compounded annual growth rate (CAGR); based on 2016 prices
[55] Based on a total of 6.67 million Malaysian citizen households in 2014 (DOS, 2015a)
[56] Based on a total of 6.95 million Malaysian citizen households in 2016 (DOS, 2017a)

As mentioned earlier, the 11MP outlined a target that aimed to double the mean monthly income of B40 households from RM 2,537 in 2014 to RM5,270 in 2020, equivalent to 12.9% per annum. Referring to the latest data available i.e. the HIS 2016, it can be observed that the median monthly income rose from RM2,629 in 2014 to RM3,000 in 2016 while the mean increased from RM2,537 to RM2,848. The income threshold that delineates between B40 and M40 households has risen from around RM3,860 in 2014[57] to RM4,360 monthly in 2016[58], signifying the overall success in raising the B40 income. However, considering the 11MP's goal of increasing the B40's mean monthly income to RM5,270 by 2020, the income level of RM2,848 recorded for 2016 indicates that significant growth would need to occur before 2020 to achieve the desired income target.

Nevertheless, the growth in the household income observed so far has been broadly inclusive. Inequality, measured by the Gini coefficient, declined from 0.513 to 0.399 between 1970 and 2016. The income share of the B40 increased from 11.5% to 16.4% while that of T20 declined from 55.7% to 46.2% during the same period, narrowing the gap between the two groups (Figure 2.4). The mean income of the B40, which was only 10.3% of the mean income of T20 households in 1979, increased to 17.7% by 2016.

Figure 2.4: Income share of B40, M40 & T20, 1970 – 2016



Source: DOS (2017a)

[57] DOS (2015a)
[58] DOS (2017a)

2.5 Profile of the B40 Households

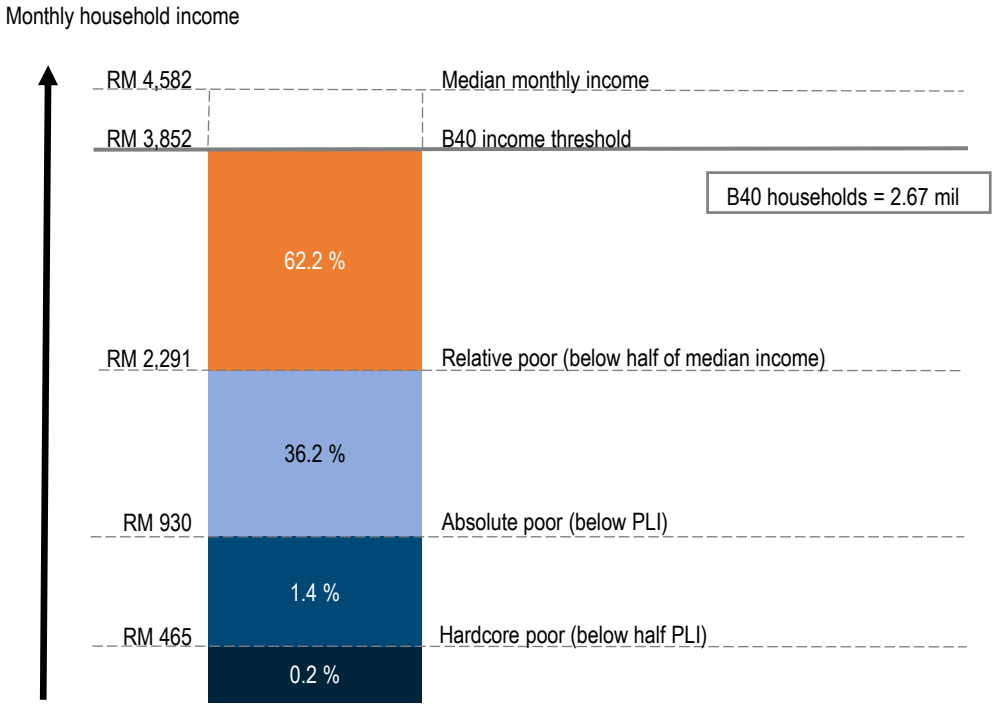
Given that an increasing number of public policies are targeted to the B40, it is useful to understand the profile of those who make up this group. The analysis in this section uses a sample of 21,654 households, which represents a total of 2.7 million B40 households in the country in 2014, to characterise the profile of the group.

Income subgroups within the B40

Based on the national income threshold for the B40 in 2014—earning RM3,852 and below per month[59]—it was estimated that around 3.0% households within the B40 group were living in absolute poverty i.e. living below the poverty line of RM930 per month on average. These were the most deprived households with difficulties to fulfil basic needs.

As Malaysia's absolute PLI is often criticised as being too low[60], applying the relative poverty line measure—typically defined as half the median income[61]—shows that 36.2% of the B40 household were living below the relative poverty line income (including the 1.6% of household living in absolute poverty). This implies that in 2014, around 60.0% of the B40 households lived above both the absolute and relative poverty line i.e. at least above RM2,291 monthly (Figure 2.5).

Figure 2.5: Income subgroups within the B40 households, 2014



Source: Authors' calculations based on HIES 2014

[59] The amount is slightly lower compared to the published official statistics of RM3,860 due to sample size adjustments.
[60] Alston (2019), Ravallion (2019), Nair and Sagaran (2017), Jolliffe and Prydz (2016)
[61] The 11MP Midterm Review report also adopted this half median income measure but termed the group living below the line as low-income households.

Box 2.1: Households in Absolute Poverty

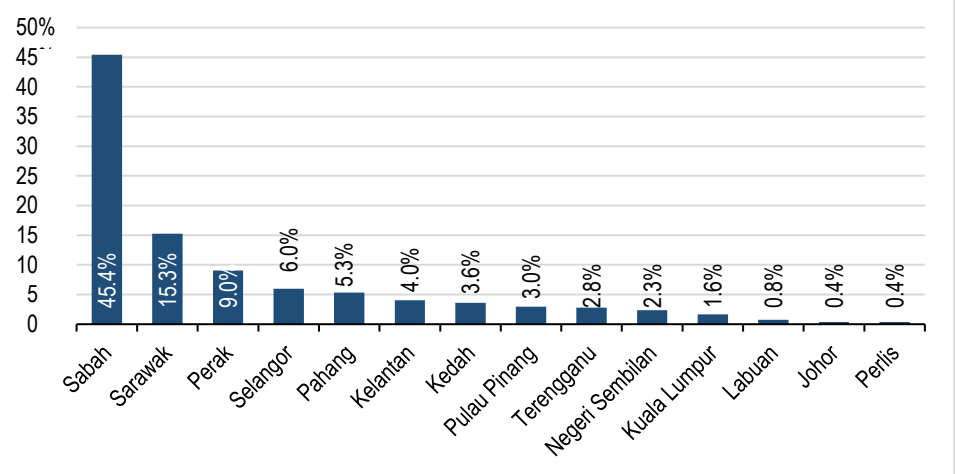
Based on 2014 data, Malaysia recorded a poverty rate of 0.6% with the average poverty line income of RM930 monthly per household. The poverty gap between urban and rural areas has narrowed in recent years with the share of poor households in the rural areas only slightly higher at 55.8% compared to urban areas at 44.2%.

Three quarters of Malaysia's poor households lived in four states. The state with the highest share of poor households was Sabah (45.4%), followed by Sarawak (15.3%), Perak (9.0%) and Selangor (6.0%). Poverty rate as a percentage of each state's total household showed that Sabah was at the top of the list at 4.0%, followed by Labuan, Sarawak and Pahang. Although Selangor stood at the fourth place in terms of its share of poor household, the poor as a percentage of its total households was among the lowest at 0.2% (Figure 2.6a).

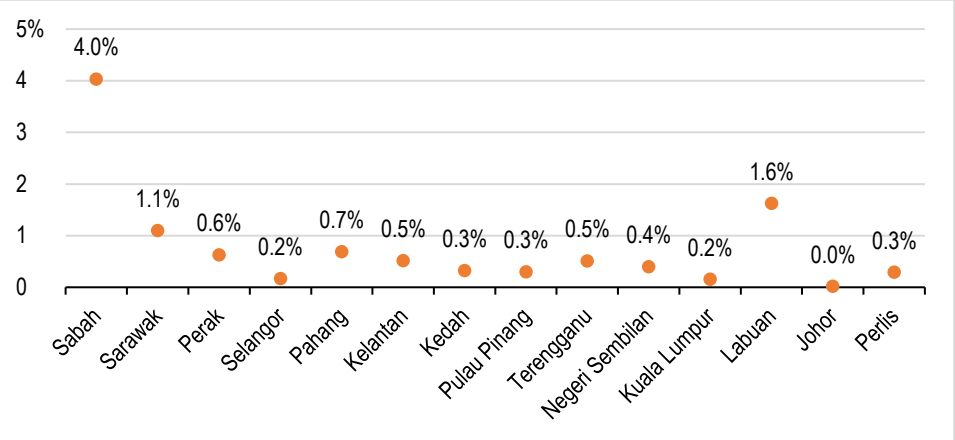
The share of rural poverty was more prevalent in the states with lower urbanisation levels like Sarawak (81.7%), Kelantan (73.5%) and Sabah (70.7%). Meanwhile, the share of urban poverty was larger in urbanised states like Pulau Pinang (87.9%), Johor (65.7%) and Selangor (63.8%) (Figure 2.6b).

Figure 2.6: Absolute poverty in Malaysia, 2014

(a) Percentage share of poor households by state, 2014



(b) Poverty rate by state, 2014



Source: Authors' calculations based on HIES 2014

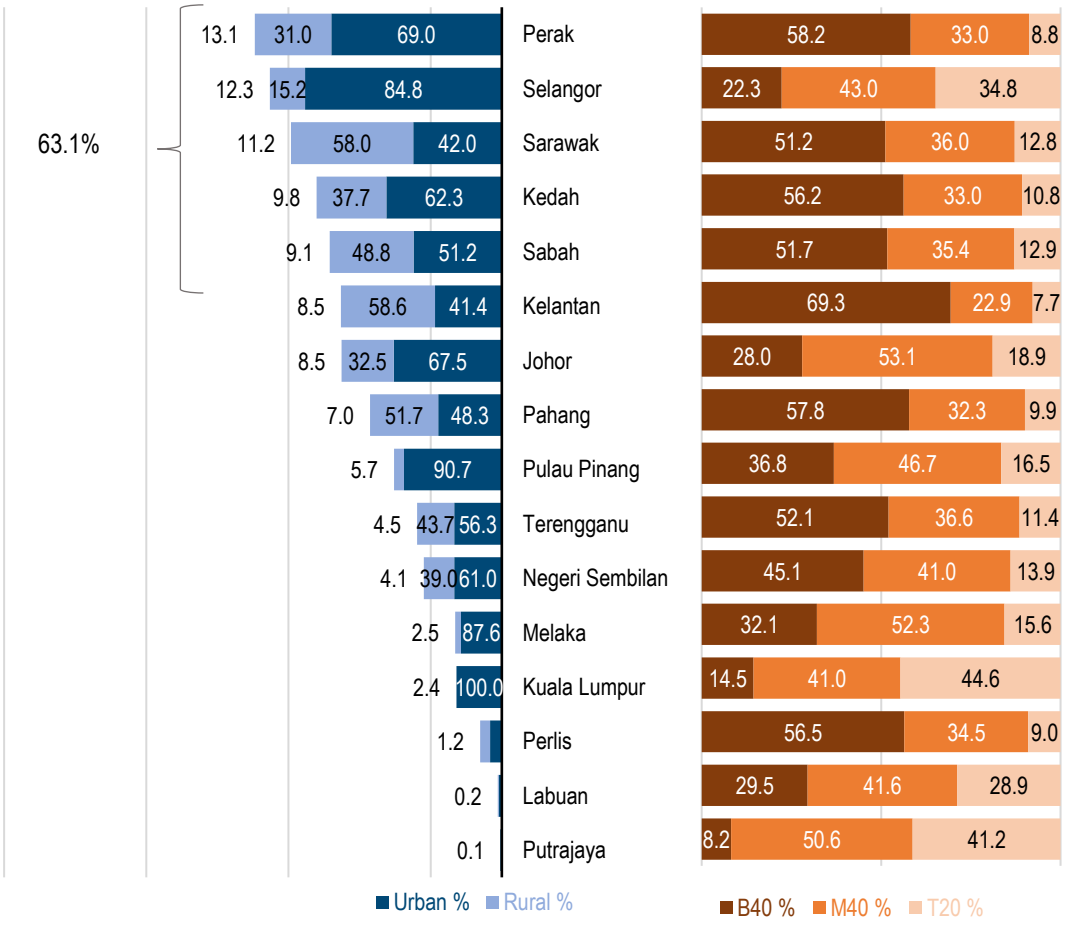
Geographical location of the B40 households

While poverty rates are slightly higher in rural areas, the proportion of the B40 households was higher in urban areas at 63.1% versus 36.9% in rural areas. This was the case for all states except for less urbanised states such as Sabah, Sarawak and Kelantan where the distribution between urban and rural areas were more equal, if not higher in rural areas. 64.0% of the total B40 population in Malaysia were concentrated in six states—Perak, Selangor, Sarawak, Kedah, Sabah and Kelantan (Figure 2.7). Within each state, B40 households were also more prevalent in states like Kelantan, Perak, Pahang, Kedah and Perlis. These states had a higher share of B40 households compared to the M40 or T20 households (Figure 2.7).

Figure 2.7:

(a) Share of B40 households, by state and urban/rural proportion, 2014

(b) Percentage of B40, M40 and T20 by state, 2014

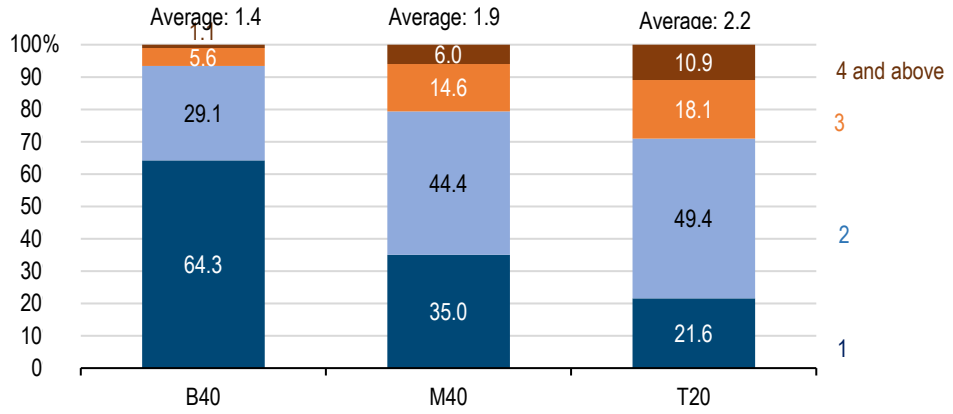


Source: Authors' calculations based on HIES 2014

Number of income recipients and number of working household members

About two-thirds of the B40 households had only one income recipient, a major contrast to the M40 and T20 households. In 2014, the percentage of single income recipients amongst the M40 was half of that of the B40 at 35.0%, while the percentage among the T20 was even lower at 21.6%. (Figure 2.8).

Figure 2.8: Percentage of households, by number of income recipients, 2014



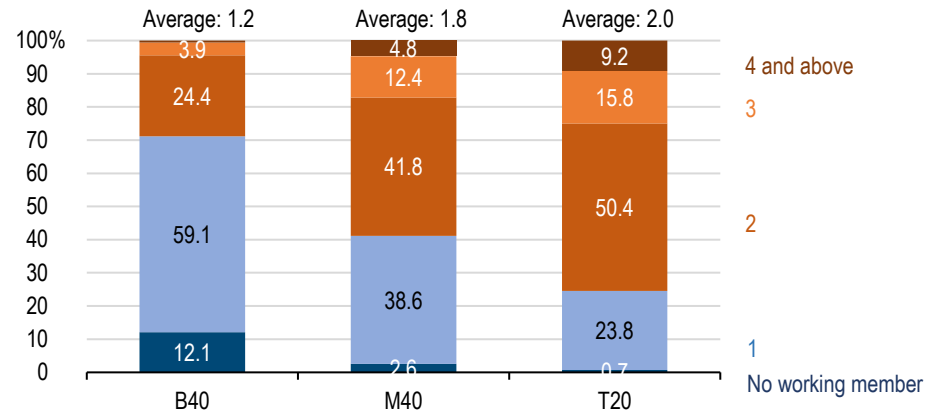
Source: Authors' calculations based on HIES 2014

While any household member could be an income recipient, their source of income may not necessarily be from paid employment or self-employment alone, but also income from properties or financial assets, and non-production incomes such as cash transfers received.

Figure 2.9 shows that almost 60.0% of B40 households have only one breadwinner, a marked contrast to the M40 and T20 households in which 59.0% and 75.5%, respectively, have at least two members working to earn a living. Additionally, the proportion of households that were not working (yet maybe earning income in the form of transfers) was higher among B40 households (12.1%), compared to M40 and T20 households (2.6% and 0.7%, respectively)[62]. It was found the head of households who fell into this category were mostly elderly aged 60 years and above (around 77.0%) and many of them were classified as pensioners.

[62] Among households with not working heads, 80.5% were in B40 group. Among households with only one working member, 53.9% were in B40.

Figure 2.9: Percentage of households, by number of working household members, 2014



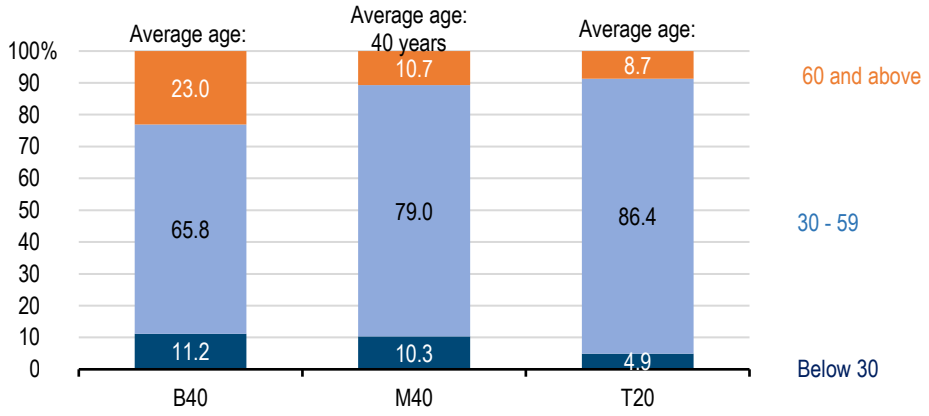
Source: Authors' calculations based on HIES 2014

Heads of households and age

Consistent with the demographics of the Malaysian population, 75.2% of heads of households were largely middle-aged persons aged between 30 and 59 years, 15.2% aged above 60 years and the remaining 9.6% aged below 30 years. As for the B40 households, a higher proportion of the group comprised of older heads of households (23.0%) compared to M40 and T20 households (10.7% and 8.7%, respectively) (Figure 2.10).

If we consider the heads of households who were in the post-working age only (defined as 60 years and above), then, more than half of these heads of households were in the B40 group (60.5%). This was vastly different from the combined total of the M40 and T20 households at 39.5%. The age dimension offers plausible explanations on the reasons why younger and older heads of households held a significant share in the B40. Household incomes generally tend to be lower among younger heads of households (at the start of employment) as well as among older heads of households (in retirement).

Figure 2.10: Percentage of households, by age group of household heads, 2014



Source: Authors' calculations based on HIES 2014

Heads of households and gender

The gender dimension is another noteworthy observation to be highlighted. Overall, 84.9% of the Malaysian households were headed by men and the remaining 15.1% by women. If we consider the B40 households only, the proportion headed by women was slightly higher at 19.4%, almost double the proportion of T20 households headed by women (10.4%) (Figure 2.11).

Figure 2.12 further shows that out of 19.4% female heads of households, 72.9% were widows, divorcees or had never been married. Male heads of households were predominantly married with only 14.6% being widows, divorcees or had never been married. Although in absolute numbers the B40 households headed by females were relatively smaller, it still raises the question on whether single women can fulfil their financial responsibilities or take care of their dependents in a gender-neutral operating environment. While the heads of households typically must ensure the needs of household members are fulfilled irrespective of their gender, the means available to do so may not be gender neutral.We foresee that this data might be an input to other sociological studies to inform policy interventions to provide support for households headed by single mothers and old-aged women.

Figure 2.11: Percentage of households, by gender of household heads, 2014

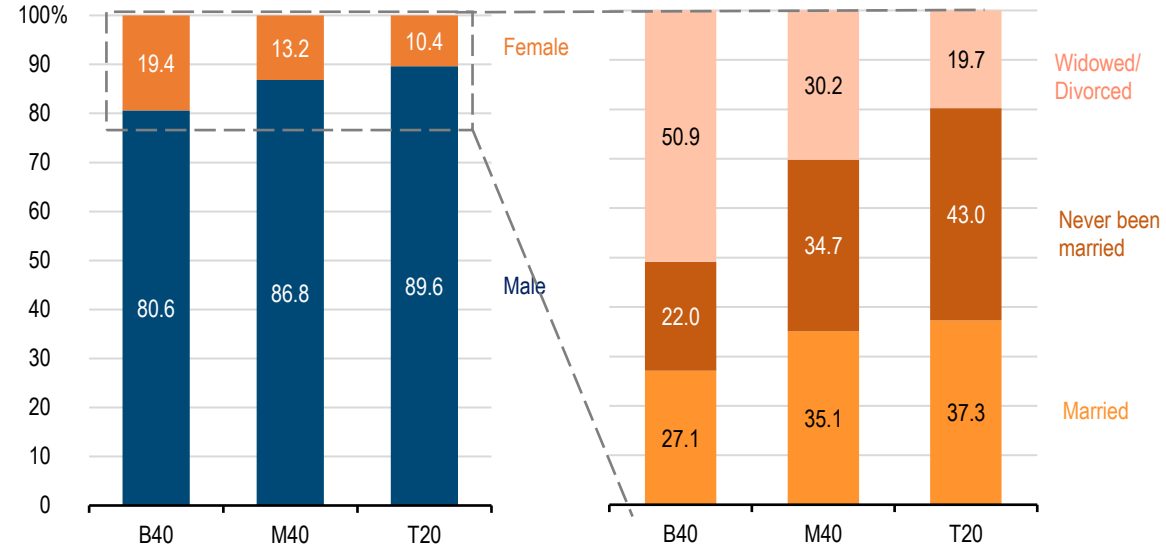


Figure 2.12: Percentage of households headed by female, by marital status, 2014

Source: Authors' calculations based on HIES 2014

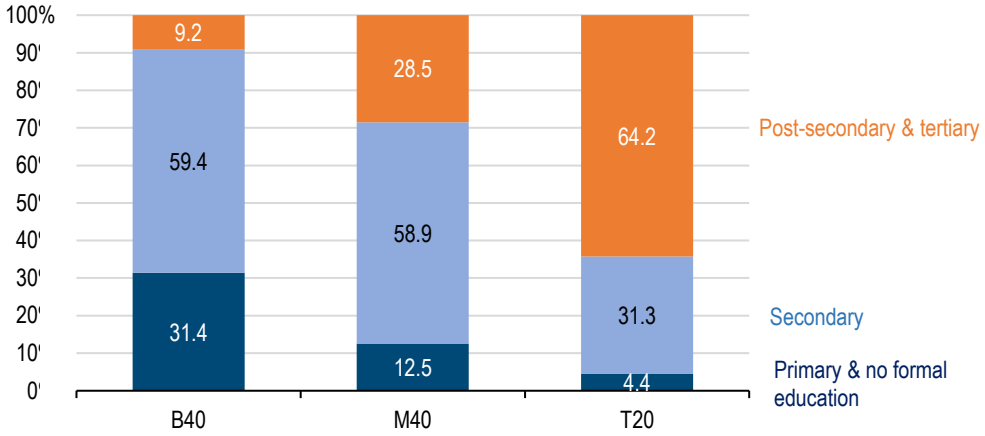
Educational attainment of the heads of households

59.4% of the B40 heads of households had secondary education while another 31.4% had no formal education or attained only primary education. Comparatively, 87.4% of M40 heads of households have secondary education or higher. The differences in the education levels were even more apparent when compared to the T20 households, in which more than half of the T20 had tertiary education qualifications (64.2%) (Figure 2.13).

Reconciling this fact with the microdata on the highest formal education level implies that, while some heads of households may have completed primary level schooling, many may have dropped out of schooling before obtaining the Lower Secondary Evaluation Certificate (PMR/SRP).

9.2% of the B40 household heads were categorised as having post-secondary and tertiary education. Data shows that most of them possessed either a diploma, certificate, matriculation or form six qualification and they worked in semi-skilled jobs. This suggests that their income-generating capabilities could be limited by their level of education.

Figure 2.13: Percentage of households, by educational attainment of household heads, 2014



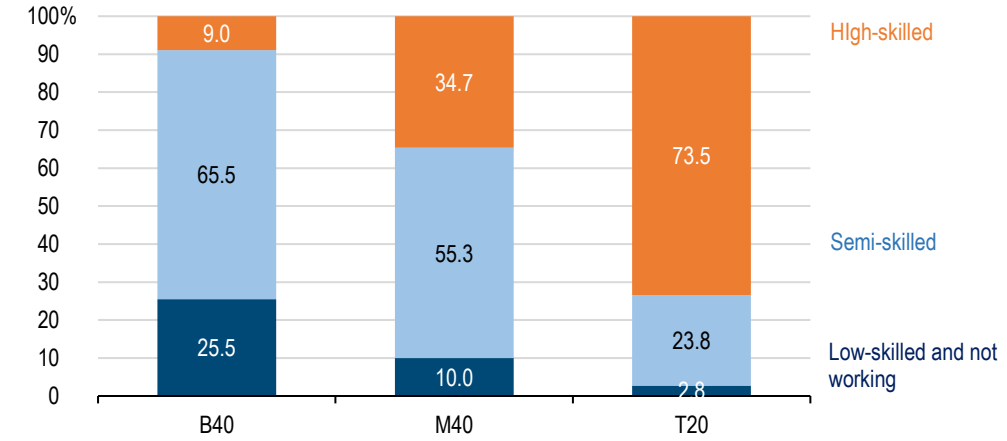
Source: Authors' calculations based on HIES 2014

Occupational skills of the heads of household

A significant proportion of the B40's heads of households held lower academic qualifications compared to the M40 or T20, and consequently involved in lower paying jobs. 25.5% of the B40 heads of households either worked as elementary workers or reported as not working while another 65.5% were occupied in semi-skilled jobs (Figure 2.14).

For the 9.0% of B40 heads of households who were categorised as having high-skilled jobs, 66.6% of them worked as technicians and associate professionals—the lower end of the high skilled jobs. While some of them were identified as managers working in the private sector (22.0%), the majority designated as managers were self-employed (49.2%), while only 18.4% reported to be employers.

Figure 2.14: Percentage of households, by occupational skill level of household heads, 2014[63]

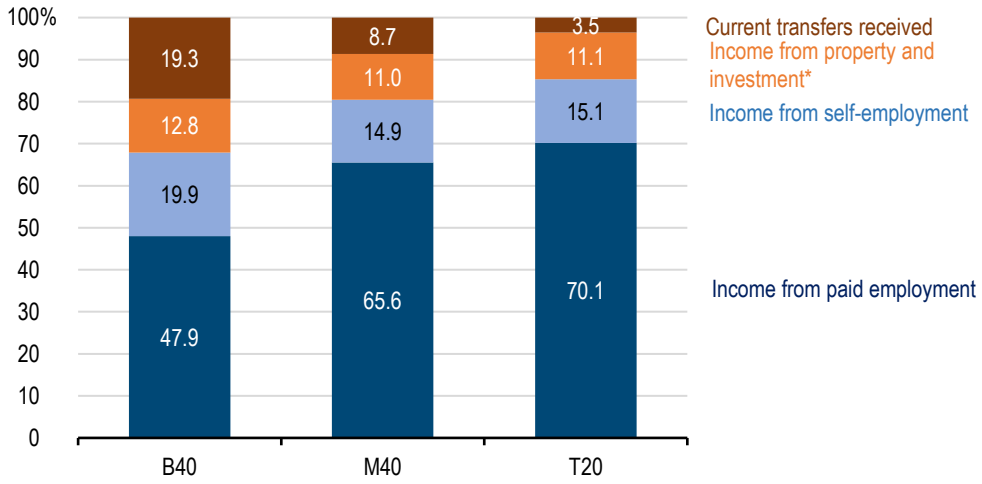


Source: Authors' calculations based on HIES 2014

Sources of income

With regard to the activity status, although around half of the B40, M40 and T20 heads of households worked in the private sector, a greater proportion of the B40 were self-employed. Consequently, Figure 2.15 shows that a greater percentage of the B40's household income came from the self-employment (almost 20.0%) compared to about 15% amongst the M40 and T20.

Figure 2.15: Percentage of households' sources of income, by income group 2014



Source: Authors' calculations based on HIES 2014
* inclusive of income from properties e.g. rental and imputed rent of owner-occupied house; and financial assets e.g. dividend, interest and royalty

[63] High-skilled jobs include managers, professionals, technicians and associate professionals. Not working include the unemployed, housewives, students and retirees.

Household expenditure: consumption and non-consumption expenditure

Household expenditure can be divided into consumption expenditure and non-consumption expenditure. In the Household Expenditure Survey, 13 main groups of expenditure items are classified according to the Classification of Individual Consumption According to Purpose (COICOP), by the United Nations[64]. The COICOP is an internationally recognised classification of household expenditure. The objective of the COICOP is to provide a framework of homogeneous items and classify them into categories or groups of goods and services[65].

Table 2.2 shows the classification of household consumption expenditure items into 13 main groups. Items of consumption expenditure include 12 main groups (Group 01 – Group 12) while the only item of non-consumption expenditure is in Group 13.

Table 2.2: The classification of expenditure items

Group	Expenditure Item	Remarks
01	Food and non-alcoholic beverages	Consumption expenditure
02	Alcoholic beverages and tobacco	
03	Clothing and footwear	
04	Housing, water, electricity, gas and other fuels	
05	Furnishings, household equipment and routine household maintenance	
06	Health	
07	Transport	
08	Communication	
09	Recreation services and culture	
10	Education	
11	Restaurants and hotels	
12	Miscellaneous goods and services	
13	Miscellaneous expenses and financial expenses	Non-consumption expenditure

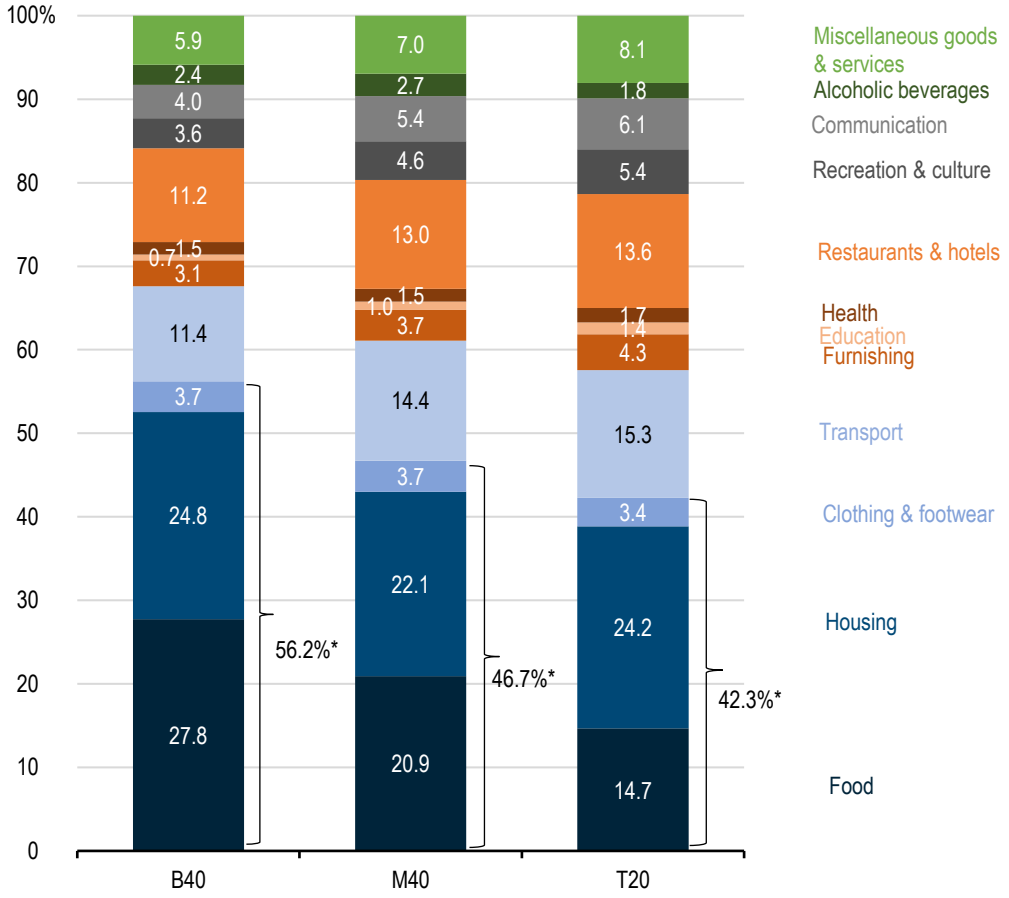
Source: UNSD (2018)

[64] DOS (2015b)
[65] UNSD (2018)

Consumption expenditure

The consumption expenditure for 12 main groups among the B40, M40 and T20 households is illustrated in Figure 2.16. The figure shows the pattern of consumption expenditure in terms of the average monthly budget share for each consumption group.

Figure 2.16: Average monthly budget share, by consumption group, 2014



Source: Authors' calculations based on HIES 2014
* Refers to average bundle share for food, housing, clothing and footwear

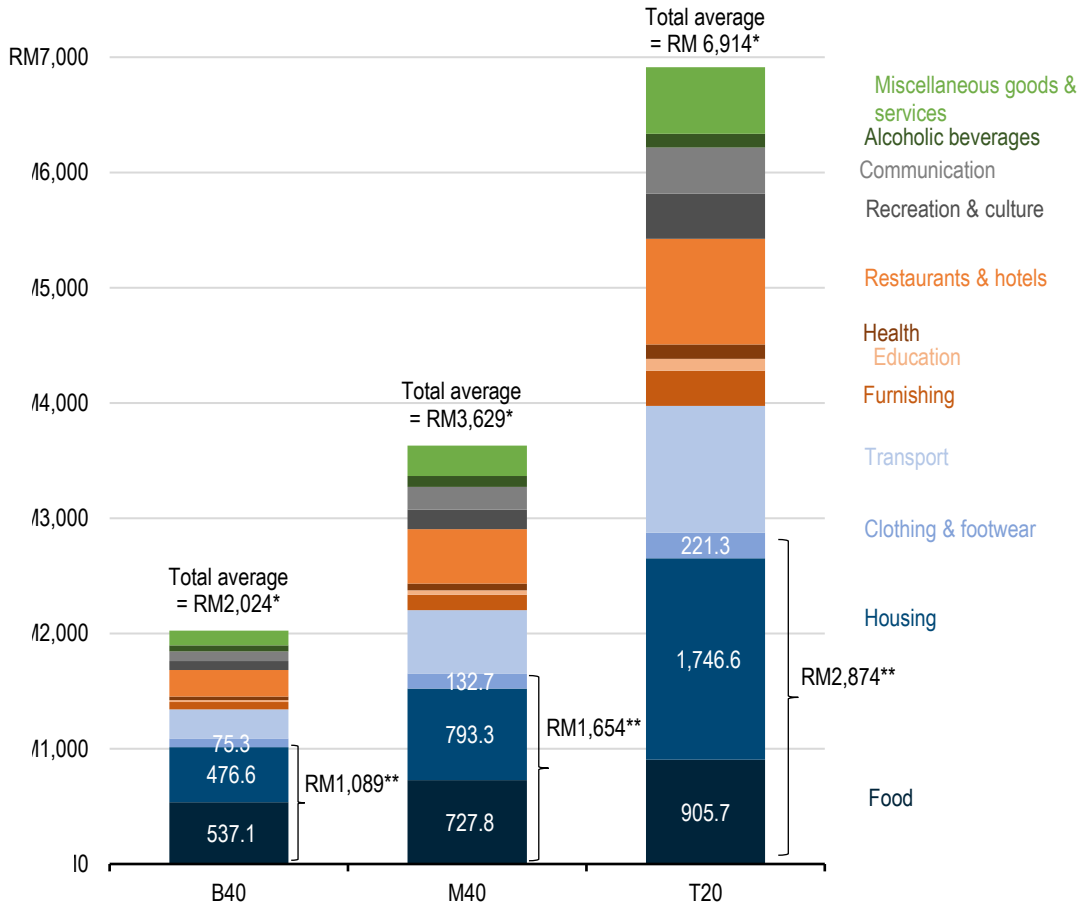
On average, Malaysian households dedicated a significant share of their budget on consumption items that are generally considered as necessities in Malaysia[66]. For example, the expenditure on food, clothing and housing[67] accounted for around 56.0% of the B40's monthly budget share. Meanwhile, the budget share on those items was lower for the M40 and T20 households at around 46.7% and 42.3% of their total expenditure respectively.

[66] Noorhaslinda Kulub Abd Rashid et al. (2018), BNM (2018)
[67] Food and non-alcoholic beverages (Group 01); housing, water, electricity, gas and other fuels (Group 04); and clothing and footwear (Group 03)

The previous observations do not necessarily imply that the consumption levels of the B40 households and those of the M40 and T20 households were similar. Figure 2.17 shows the average consumption expenditure for 12 consumption groups for the B40, M40, and T20 households in absolute ringgit terms. In 2014, the average consumption expenditure for the B40 households was RM2,024 monthly. This is slightly more than half of the average expenditure of M40 households which stood at RM3,629.

When it comes to expenditure on necessities like food, clothing and housing, the M40 and T20 households outspent the B40 households by a wide margin. M40 and T20 households spent an average of RM1,654 and RM2,874, respectively, compared to the B40 which only spent an average of RM1,089.

Figure 2.17: Average monthly expenditure, by consumption group, 2014



Source: Authors' calculations based on HIES 2014
* Refers to total monthly average consumption expenditure
**Refers to average monthly expenditure for food, housing, clothing and footwear

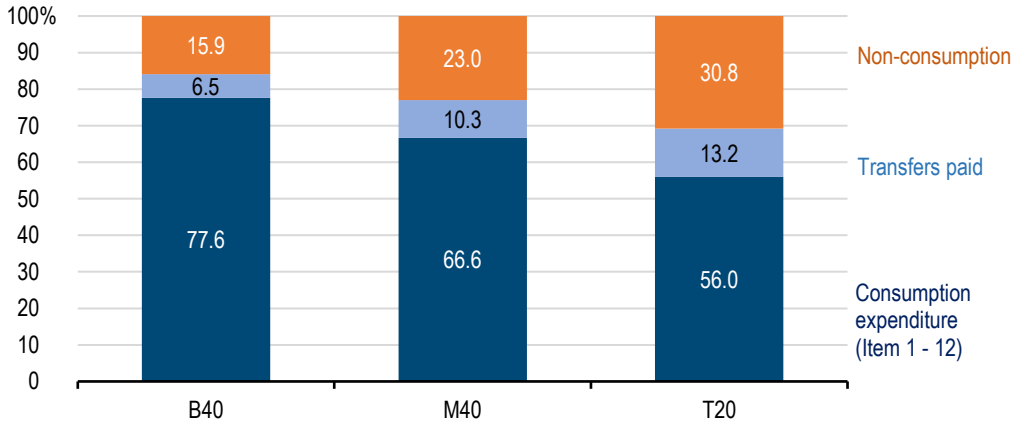
Non-consumption expenditure

Apart from consumption expenditure, households also spend their income on non-consumption items. The non-consumption expenditure refers to the "Miscellaneous expenses and financial expenses" (Group 13) in the Household Expenditure Survey. These include expenditure or income spent on:

- Transfer payments (e.g. taxes paid on income, consumption and wealth; retirement and social insurance contributions; and regular inter-household cash transfers);
- Expenditure for fixed capital formation (e.g. purchase of lands, properties and machineries; and/or
- Acquisition of financial assets (e.g. mortgage and other loan repayments; and bank deposits).

Figure 2.18 illustrates the budget share of consumption and non-consumption expenditure for the B40, M40, and T20 households. On average, the B40 households allocated 22.4% of their total budget for non-consumption expenditure. On the other hand, the M40 and T20 households spent 33.3% and 44.0% of their total budget on non-consumption expenditure, respectively. Among the non-consumption expenditure, B40 households allocated only 15.9% of their spending on non-consumption expenditures. This suggests that the capability of the B40 households to save and accumulate wealth or assets was more constrained given that their monthly expenditure level on non-consumption items was much lower compared to the M40 and T20 households of whom allocated 23.0% and 30.8%, respectively.

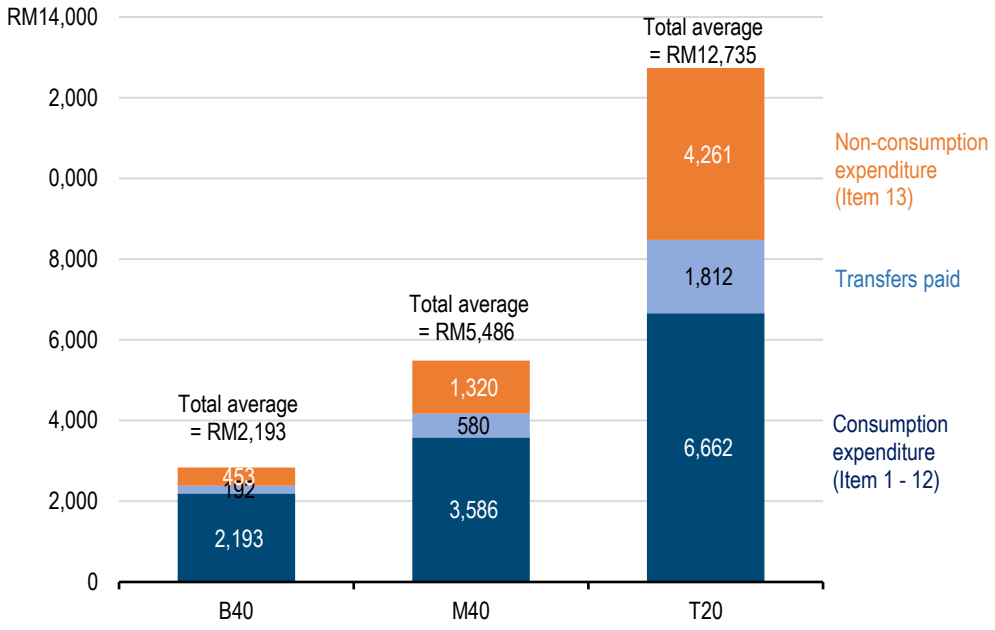
Figure 2.18: Budget share, by type of expenditure, 2014



Source: Authors' calculations based on HIES 2014

In absolute terms, the B40 households allocated an average of RM645 of their total outlays on non-consumption expenditure, compared to an average of RM1,900 and RM6,073 for the M40 and T20 households, respectively (Figure 2.19). Of these amounts, the B40 spent around RM450 on items related to acquisition of assets like the purchase of properties and financial assets; mortgage and other loan repayments; and bank deposits. This is roughly only a tenth of the amount spent by T20 households.

Figure 2.19: Average expenditure, by type of expenditure, 2014



Source: Authors' calculations based on HIES 2014
* Refers to total monthly average consumption and non-consumption expenditure

Households' residual income

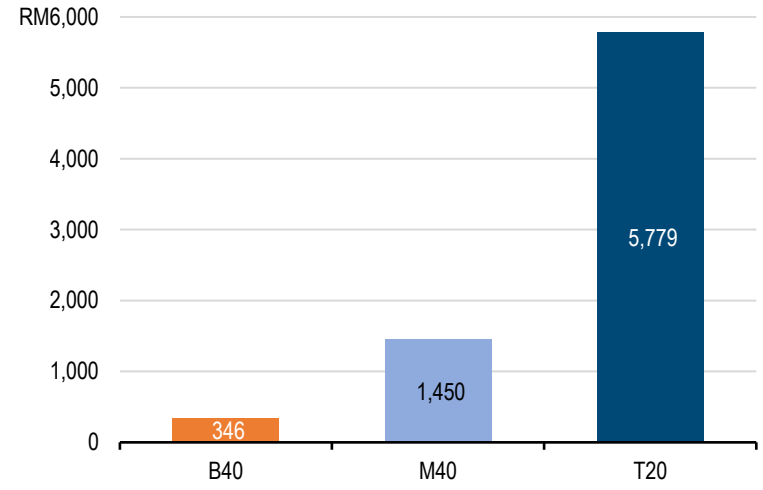
While consumption is an indicator of economic well-being, the expenditure for a particular period or month may not be from the income received during that current period. Likewise, households may not spend all the incomes they earn during a given period but choose to save. When there is a deficit between the current income and the intended expenditure that households would like to undertake during a particular period or month, they may choose to draw from savings or take on debts to pay for the excess expenditure.

It is also important to include the level of savings (or debts) of households as it reflects households' economic resilience (or vulnerability) in a more comprehensive manner. The availability of wealth, which is typically accumulated via savings and the purchase of assets, is essential since it provides immediate assistance to smoothen consumption during difficult times (for example unemployment) or economic shocks. It also acts as additional income streams at later stages of a household's life-cycle (i.e. post-retirement when income levels are lower), or when needs are higher. Likewise, a negative current income-expenditure gap increases the probability of households experiencing economic distress.

The residual income can be used as a proxy to analyse the current income-expenditure gap facing each household. Residual income refers to the amount of income left after deduction of transfer payments and total consumption expenditure (Group 01 – Group 12).

Figure 2.20 presents the residual income among the B40, M40 and T20 households. The average residual income among the B40 households amounted to RM346 while the M40 and T20 households recorded an average residual income of RM1,450 and RM5,779, respectively. This implies that the B40 households were left with a much smaller out-of-pocket monies to accumulate wealth for future adverse financial circumstances. The differences in the level of residual incomes between these households also reflect the significant gaps in the capabilities for savings and broadly explains the wealth inequality between poorer households and richer households.

Figure 2.20: Residual income, by income group, 2014

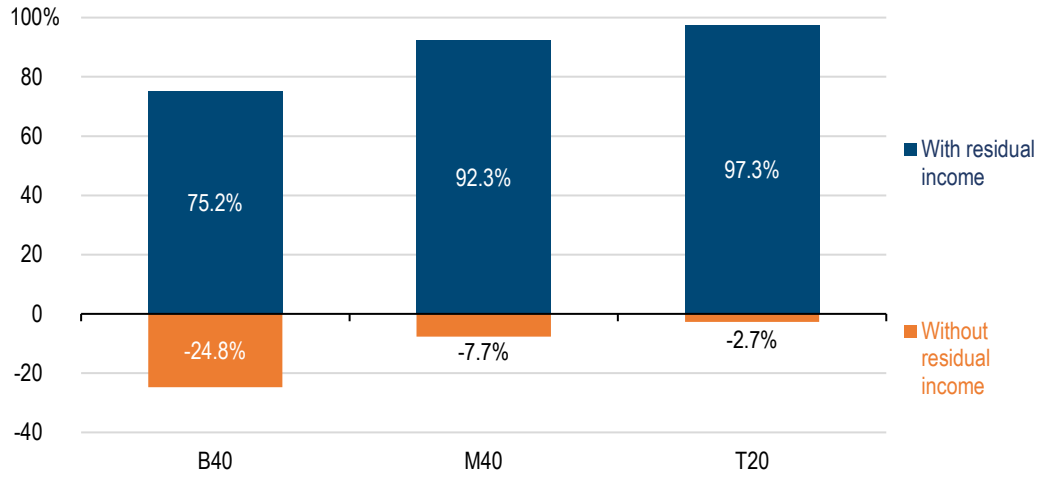


Source: Authors' calculations based on HIES 2014

Meanwhile, Figure 2.21 shows the proportion of households with and without residual income in 2014. Almost a quarter of the B40 households ended up with a deficit in income as a result of consumption expenditure exceeding their current income. A number of the M40 and T20 households have also ended up with current income deficits, yet these were incurred after transfers paid were accounted for or due to the purchase of big-ticket items during the period of analysis. However, information is unavailable to determine whether the extra spending was financed through savings or debts. Nevertheless, more than 90% of the M40 and T20 households have residual incomes and coupled with their relatively higher income levels, it can be inferred that their savings would be sufficient to cover the income deficits.

Overall, the findings have shown that the B40 households save much less as a proportion of their income as opposed to the M40 and T20 households. The lower level of residual income among the B40 households indicates that these households spent a staggering share of their income on consumption expenditures, disposing them with less residual income to allocate for savings or accumulate wealth.

Figure 2.21: Percentage of households with and without residual income, by income group 2014



Source: Authors' calculations based on HIES 2014

2.6 Discussion: What Can We Decipher When Looking at a More Granular Level?

Social assistance programmes that target the poorest 40% households imply that there will always be 40% of the population eligible for assistance. This poorest 40% translates into a substantial number of around 2.7 million households in 2014. We analyse the characteristics of household incomes by dividing them into 10 income deciles to further refine our observations. For ease of reference, the bottom 10% is termed B10 and the top 10% is termed T10. The rest of the deciles are referred to as they emerge in the distribution; for example, the third income decile (20 – 30) is referred to as such.

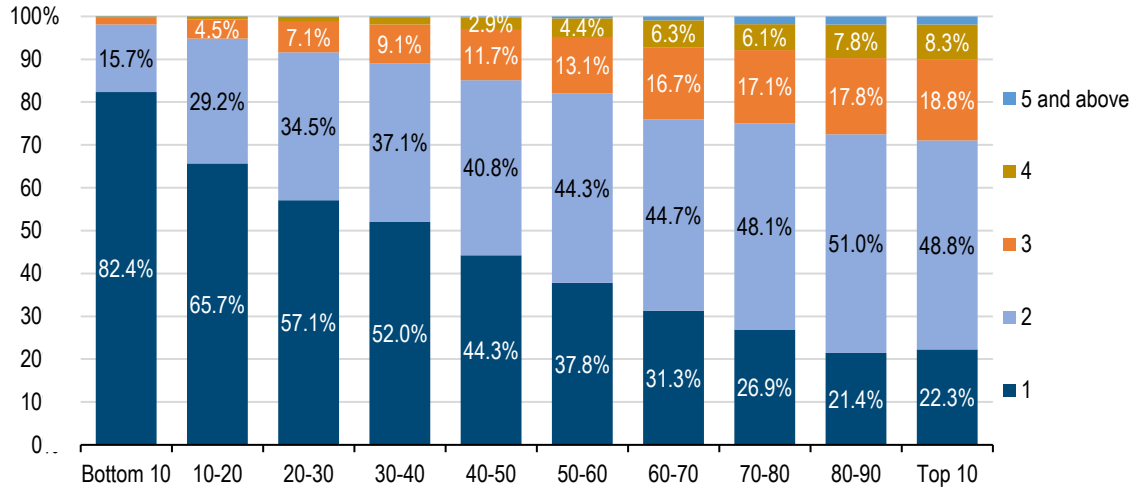
Number of income recipients per household

The percentage of households that relied on a sole income recipient was much higher in the B10 and the second decile (10 – 20) when compared to the other deciles. Among the bottom 10% households (B10), 82.4% of them had only a single income recipient. The number was still high among households in the second income decile, where almost a third (65.7%) of these households had only one income recipient.

Households in the third (20 – 30) and fourth (30 – 40) income deciles had similar percentages for one income recipient, 57.1% and 52.0%, respectively. For households in the sixth (50 – 60) income decile and above, more than half of them had two or more income recipients. This percentage was even more significant among the ninth (80 – 90) and T10 households, where around 80% of these households had more than one income recipients (Figure 2.22).

Meanwhile, households in the fifth income decile (44.3%) is nearer to the fourth decile (52.0%) rather than the sixth decile (37.8%). If we compare this trend to the earlier classification of B40 (64.3%), M40 (35.0%) and T20 (21.6%) (see Figure 2.8), then clearly the M40's 35.0% is not consistent to the fifth income decile, but the fifth decile is in the M40's economic group.

Figure 2.22: Percentage of households, by the number of income recipients, 2014

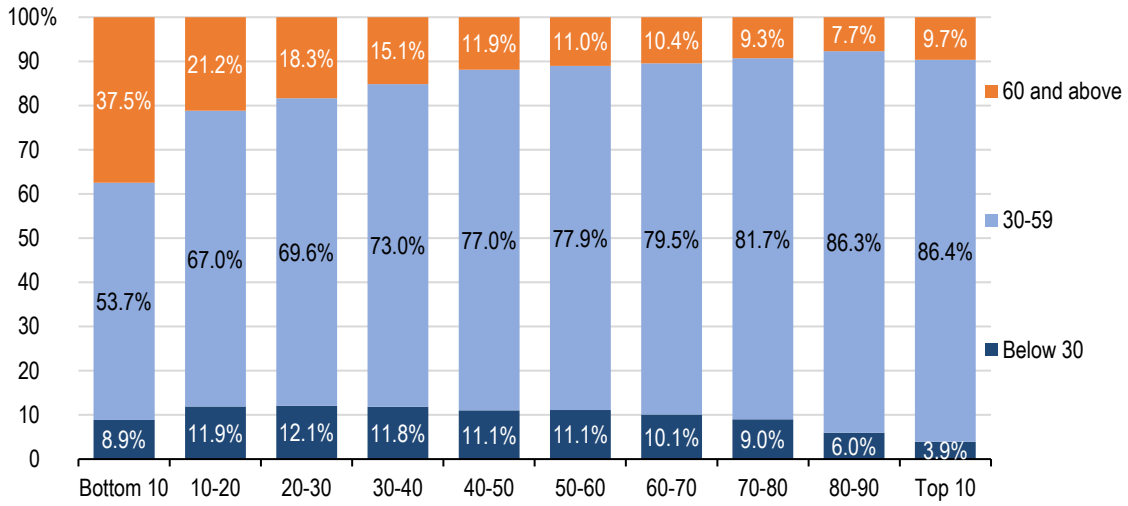


Source: Authors' calculations based on HIES 2014

Age distribution of heads of households

When observing the age of the heads of households, the B10 had the highest percentage of those aged 60 and above. The percentage, at 37.5%, was almost double of those in the second income decile, and around four times the percentage of those in the top 10% (Top10) (Figure 2.23).

Figure 2.23: Percentage of households, by age group of household heads, 2014

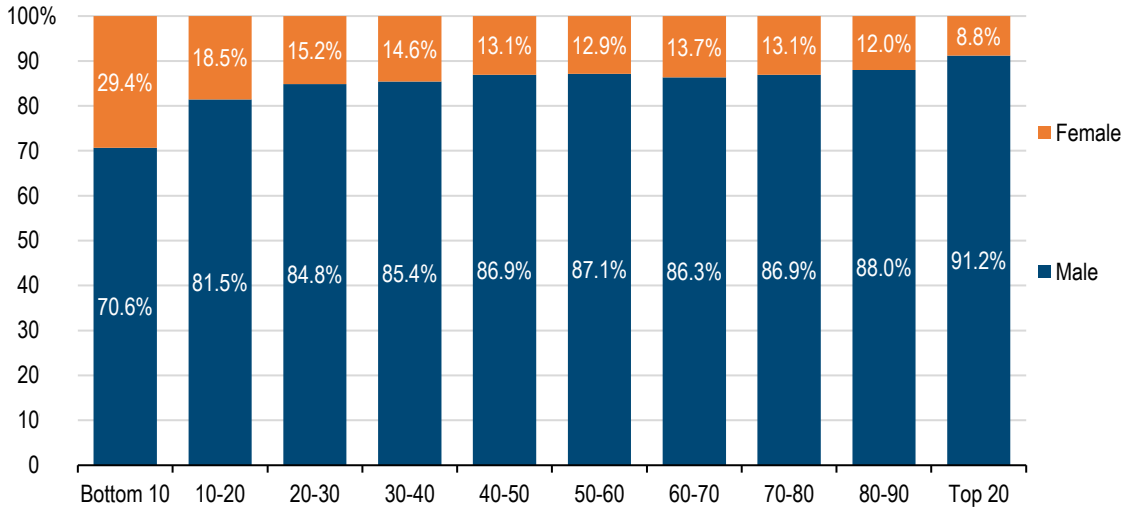


Source: Authors' calculations based on HIES 2014

Gender distribution of heads of households

A large majority of heads of households in each decile were male. However, the bottom 10% had the highest share of female household heads at 29.4%. This was a significant difference when compared with the top 10% who only had around a third of that percentage at 8.8% (Figure 2.24).

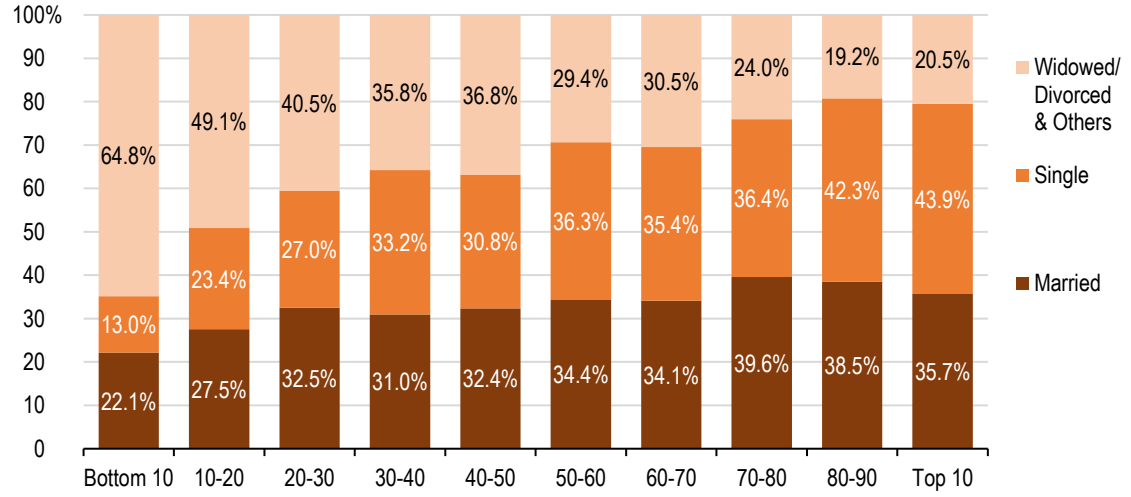
Figure 2.24: Percentage of households, by gender of household heads, 2014



Source: Authors' calculations based on HIES 2014

When observing the marital status of households headed by women, around half of the women heads in B20 households were widows or divorcees (64.9% in the B10 and 49.1% in the second income decile. This was largely different from the T20 women headed households where only around 20% of them were widows or divorcees (Figure 2.25).

Figure 2.25: Percentage of households headed by female, by marital status, 2014



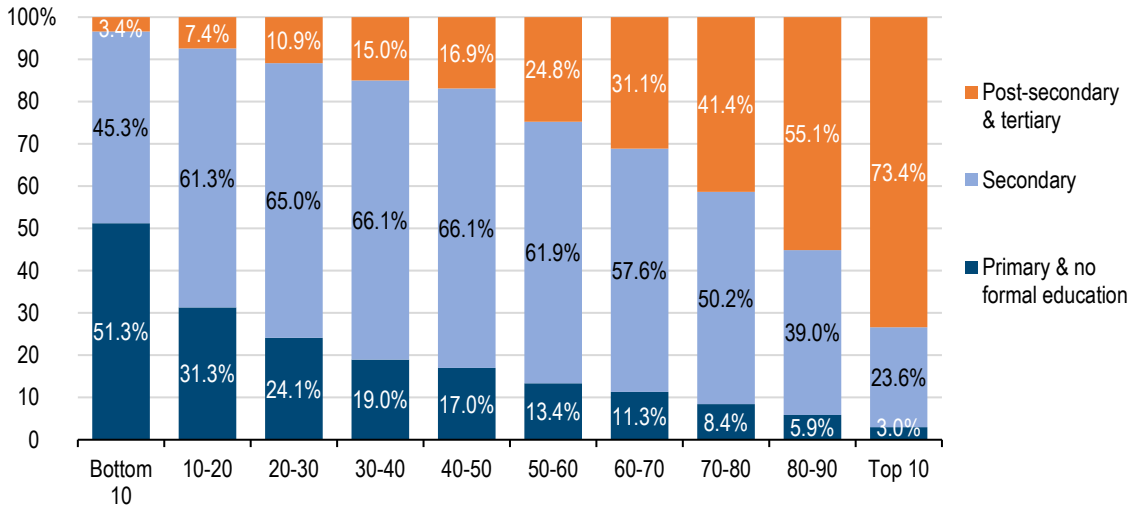
Source: Authors' calculations based on HIES 2014

Education qualifications among the heads of households

In terms of education qualification, about half (51.3%) of the B10 head of households had completed only primary education or did not have any formal education. The percentage of those who only completed primary education or had no formal education is also significant in the second income decile at 31.3% (Figure 2.26).

Comparatively, more than half of those in the T20 had attained post-secondary or tertiary education, with 55.1% in the ninth income decile and 73.4% in tenth income decile. This shows that higher education qualification was more prominent among the higher income group while a majority of those in the lower income group have lower education qualifications.

Figure 2.26: Percentage of households, by highest educational attainment of household heads, 2014



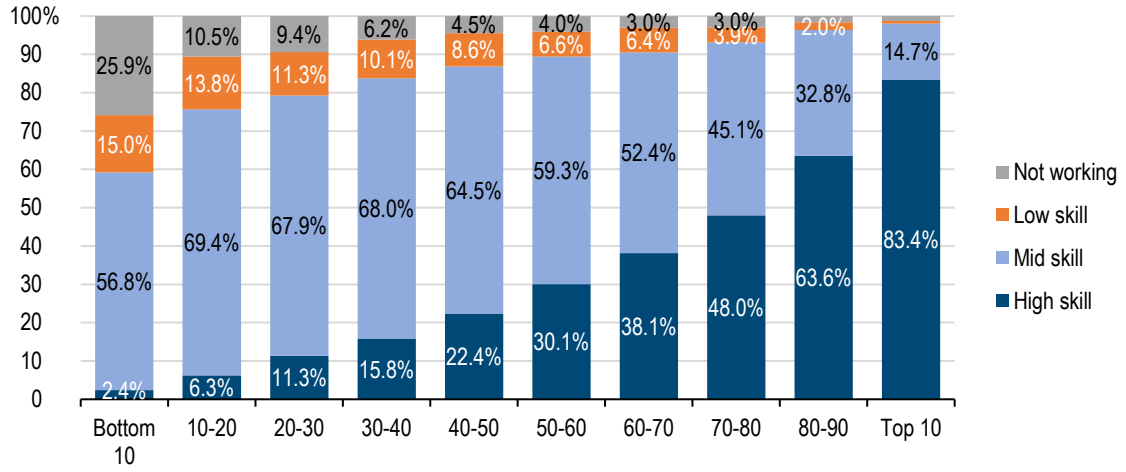
Source: Authors' calculations based on HIES 2014

Occupational skills of heads of households

The percentage of household heads who were not working was the highest among the B10 at 25.9%, more than double the percentage of the second income decile (at 10.5%) (Figure 2.27). This indicates that around a quarter of the B10 were receiving income (such as through government assistance or pension) despite not being employed.

Meanwhile, those who were in low skill jobs were also highest among the B20. However, most of these heads of households were working in mid skill jobs. This is reflected by more than half of the household in the B70 were in mid skill occupations. The majority occupational skill type only changes amongst the T20, in which more than half was reported to be working in high skill jobs.

Figure 2.27: Percentage of households, by occupational skill level of household heads, 2014



Source: Authors' calculations based on HIES 2014

2.7 Chapter Conclusion

Similar to numerous countries[68], low-income households such as the B40 share common characteristics such as relying more heavily on a single income recipient. Furthermore, the household heads typically held lower educational qualifications and were employed in lower skilled jobs compared to the M40 and T20 households. A much higher share of the B40 households comprised of household heads who were in their post working age (defined as 60 years and above). They also had a much lower residual income as opposed to those in the M40 and T20 households.

On the other hand, the B40 households were heterogeneous and can be further categorised into several income subgroups at a more granular level. Each subgroup may differ in needs and require different intervention strategies. This information is critical in order to craft better policy interventions since different assistance are needed in assisting the diverse households' characteristics existing within the B40 income group. For instance, as the rural and urban needs may vary, intervention programmes that consider geographical factors are also required in reaching these two segments of the B40s.

[68] World Bank (2013)

If we are to utilise the relative income approach to analyse households, we suggest the use of deciles as a superior tool that will produce a clearer depiction on the state of the households. Analysis at the decile levels demonstrate the characteristics of the poorest 20% of households as pronouncedly different from the households in the subsequent income brackets. A greater percentage of the first (0 – 10) and second (10 – 20) income deciles were relying more on single income recipient, possessing lower educational attainment and working in lower skilled jobs. Furthermore, the age of the heads of households shows more similar characteristics for the fourth (30 – 40) to the sixth (50 – 60) income deciles as a group. And as far as percentage of heads of households by mid-skill occupational category, the income group with similar characteristics would be from the second (10 – 20) to the fifth income deciles (40 – 50). The characteristics depicted at the decile levels will render the economic clustering of groups, be it B20, B40-B60 or T10, a more coherent and justifiable targets for policy interventions.

CHAPTER

03

Refining the Income-based Approach I: Accounting for Differences in Income Definitions and Geographical Income Disparities **44**

CHAPTER 3

REFINING THE INCOME-BASED APPROACH I: ACCOUNTING FOR DIFFERENCES IN INCOME DEFINITIONS AND GEOGRAPHICAL INCOME DISPARITIES

3.1 The Basis of Income Cut-off

The use of income and consumption has been widely acknowledged as appropriate measures of material well-being and in comparing the distribution of living standards across individuals or households[69]. As we have seen in Chapter 2, income was used as an indicator to classify households' material well-being. The chapter discusses the common practice of grouping households into three income categories, the B40, M40 and T20. This is done by taking each household's level of income and their position in the overall income distribution. Households are grouped together when they fall within a certain income threshold and the relative living standard of each group could be assessed.

These income groups indicate the relative welfare experienced by household in one group compared to the other two groups. However, this approach sometimes does little in informing policymakers in prescribing measures specifically tailored for the targeted group since even households within the same income groups differ in characteristics and needs.

Additionally, the choice of the cut-off point that delineates one household group from another can be subjective. As we have seen earlier, household income data is sliced at the first 40% households in the income distribution. Then, the next 40% of households are grouped in the middle; and finally, the last 20% are grouped to identify the most affluent households at the top. Some would argue whether it would be fair for a household at the 41st percentile to be excluded. How different is the 41st percentile household compared to the 40th percentile household, for instance, in terms of their consumption patterns?

In the case of slicing the household data at the first 40%, even the World Bank, who advocated the approach noted that, "the choice of the bottom 40% is somewhat arbitrary"[70]. In order to circumvent these problems, Chapter 2 advocates for a more granular analysis at the decile levels (at each 10%) in order to provide for a more detailed and accurate depiction of households and consequently the clustering of the economic groups for comparison purposes.

[69] Canberra Group (2001), UNECE (2011), OECD (2013)
[70] World Bank (2016, p. 24)

3.2 Refinement in Analytical Approach of Material Well-being Distribution

This chapter proposes two parameters that could refine the measurement of material well-being of Malaysian households along the income distribution. The first refinement will be on the concepts of income. It shows how the intended inclusion/exclusion of certain income components could affect the aggregate income statistics as well as distributional estimates (i.e. inequality and poverty). The second part will discuss the geographical diversities of household income, highlighting the uneven distributions in different locations within Malaysia.

3.3 Accounting for Differences in Income Definitions

People generally interpret income in terms of cash or monetary terms, earned in exchange for something they produced. It is also common that when talking about income, people think of it in terms of salaries and wages since these are the two major source of income for most people. At aggregate level, around 80% of Malaysian households' income in 2014 was contributed by salaries and wages including earnings from self-employment.

However, the definition of income is broader than employment incomes. Income could also include non-employment incomes such as rent, interest and dividend flowing from the assets owned, as well as cash transfers received by some households without having to produce anything. Interestingly, what is considered as income may also include benefits flowing from goods and services received, owned or produced by households; but not in cash terms, such as gift received in-kind, imputed rent from owner-occupied dwellings and vegetables grown for owned consumption.

Conceptual issues could arise in empirical work that utilises income as a proxy for material well-being measurement. Moreover, income can be constructed based on several definitions that serve different purposes. For instance, the income components for the purposes of welfare and distributional measurements may be different from taxation purposes. The former may include income received in kind to allow for a more meaningful comparison of the economic resources available among households. Meanwhile, the latter would exclude this type of income since, arguably, there is no income in monetary terms flowing into the households.

Box 3.1: Concepts of income in household material well-being measurements[71]

Two important concepts of income typically employed in the measurement of household material well-being and living standards are highlighted below:

1. Income from production vs non-production incomes (transfers received)

Earnings derived from paid employment or self-employment are perhaps the best known and significant source of income for most households. Typically, earnings

[71] Adapted from Canberra Group (2001)

include salaries and wages, and other payments such as overtime, allowances, bonuses and employers' social insurance contributions.

Besides earnings from employment, incomes can also be derived from financial assets or properties in the forms of interest earned on deposits, dividends and capital gains from investments; rents from houses, equipment, land, buildings; as well as capital gains from both types of assets. Together, these incomes are termed as "income from production" because there is a production of goods and services in exchange for incomes (also known as market income).

Meanwhile, one may also receive income without producing goods or services. This refers to current transfers or incomes received from donors such as governments, charities, corporations or other households. Examples include pensions, social assistance benefits, scholarships and support payments from other households such as alimony, child and parental supports. These receipts are included in the income component as they directly increase the level of economic resources available to household and their ability to consume goods and services.

2. Money income vs income received in-kind

Existing literature has recognised that cash income alone is not sufficient to fully capture the well-being of individuals and households without including the non-cash incomes[72]. As income is meant to measure the economic resources available to households, a more comprehensive measure of this requires non-monetary incomes or payments received in kind (good and services) to be included as well. Examples include food, housing, education and healthcare provided by the government, employers, charities or other households. Although the inclusion of incomes received in kind would improve the analysis of household welfare and poverty, yet, in practice, they are less straightforward to measure, and complete information is often difficult to obtain.

Also falling into this category is the income from household production of services for own consumption. Households' non-monetary productions are included on the income side because they raise the level of resources available and hence their living standard.

The production of goods and services can be significant for certain groups of households such as households in rural areas who produce vegetables, fruits and dairy products for their own consumption. Besides, for households living in their own dwelling, imputed rent is included as part of their total income. However, due to the difficulty in measuring the volume and value of other household production for own consumption, the HIES 2014 only includes the data for imputed rent.

[72] UNECE (2011)

The omission of income from various sources such as government subsidies for food, childcare and housing can add up to a large amount. However, it is not the intention of this report to examine the missing income in that respect.

The components of income can be summed up in stages to produce hierarchical measures of income suited for varying analytical purposes. Table 3.1 presents four common variations in the income definition and the items under each:

Table 3.1: Types of income definition and their components

Component	Production Income	Gross Income	Net Income	Money Income (Gross)
Income from employment				
Wages and salaries (before deduction for income tax, EPF and SOCSO contributions, etc.)	√	√	√	√
Allowances (e.g. living costs, specialist, housing and expatriate allowances)	√	√	√	√
Bonuses and other cash (e.g. commissions, tips and earnings from overtime work, etc.)	√	√	√	√
Free/concessional consumer goods and services (e.g. food and lodging)	√	√	√	×
Other payments received in kind (e.g. paddy, rubber, coconut, etc.)	√	√	√	×
Employer's contributions to EPF, SOCSO	√	√	√	√
Income from self-employment	√	√	√	√
Property income				
Rent from houses, land or other property (exclude owner-occupied house)	√	√	√	√
Rent from lodging (e.g. rental from living quarters)	√	√	√	√
Royalties (e.g. copyrights, patents and similar rights)	√	√	√	√
Rent from agricultural land	√	√	√	√
Interest (e.g. bank deposits, bills, bonds and loans)	√	√	√	√
Dividends (e.g. shares, unit trusts, etc.)	√	√	√	√
Income from production for own consumption				
Imputed rent of owner-occupied house	√	√	√	×
Current transfer received				
Remittances from other households (local/overseas)	×	√	√	√
Alimony and pensions	×	√	√	√
Scholarships, bursaries and fellowships	×	√	√	√
Other periodic payments received (e.g. from an inheritance, trust fund, etc.)	×	√	√	√
In-kind gift	×	√	√	×
Minus: Current transfer paid				
Taxes, duties, fees, EPF, SOCSO, zakat, remittances	×	×	√	×
Net income (or disposable income)				

Source: DOS (2015a)

As highlighted in Table 3.1:

1. **Production income** refers to income that arises from the production of goods and services, as defined by the Expert Group on Household Income Statistics (the Canberra Group)[73], which has been adapted to the local context of Malaysia. Sources of production income include employee's income or salary, income from self-employment and property income (second column).

2. **Gross income** refers to production income as well as non-production income i.e. current transfers received by households without performing productive economic activities (third column).

3. **Net income** refers to the remaining income after deducting all transfers paid by households from their gross income. Typically known as disposable income or post-transfers income, this is the income available for households to buy goods and services (fourth column).

(Note that the above three measures include both cash and in-kind incomes.)

4. **Money income** refers to the income received in realised monetary terms only. Money income excludes payments received in kind such as food and lodging; as well as income from production for own consumption such as fruits and vegetables grown by households and imputed rent of owner-occupied homes (fifth column).

Table 3.2 summarises the components of the four types of income definition:

Table 3.2: Four types of income

Type of income	Components
Production income	Income from employment + property income + income from production for own consumption
Gross income	Production income + current transfers received
Net income	Gross income – current transfers paid
Money income	Gross income – imputed rent – other payments received in-kind

[73] UNECE (2011)

3.4 Varying Income Definitions and Effects on Households Income Statistics

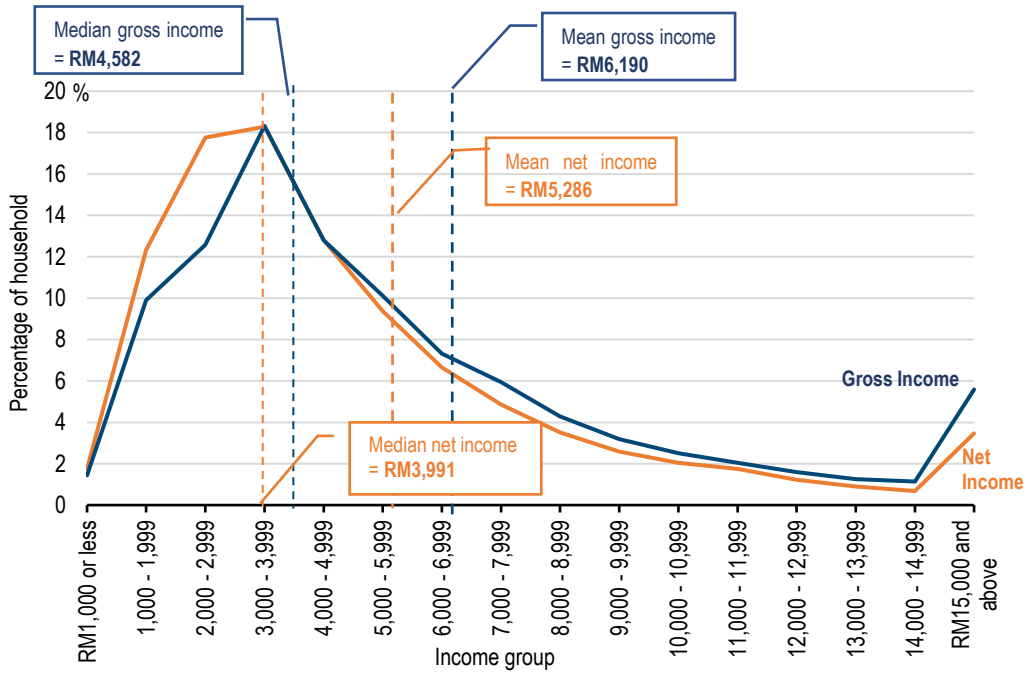
Gross and net income

The definition of income customarily used in the official household income statistics in Malaysia is the gross household monthly income. This was the income definition used in the analysis presented in Chapter 2 to compare material living standards across all households.

For distributional analysis, it is imperative that the most appropriate definition of income is used to correctly capture the economic circumstances of households. The choice of income definition would in turn influence income related statistics such as the rate of income growth, incidence of poverty and inequality.

Figure 3.1 reveals the shape of the frequency distribution curve for Malaysian household incomes when income is defined on a "gross" and a "net" basis. As mentioned earlier, gross income refers to production incomes plus current transfers received, while net income refers to gross income excluding any current transfers paid (e.g. taxes, zakat, contributions to EPF and SOCSO as well as remittances to other households).

Figure 3.1: Household income distribution, by gross and net income definitions, 2014



Source: Authors' calculations based on HIES 2014

The figure illustrates that the income distribution is not evenly distributed across all households. Instead it is positively skewed with a larger proportion of households clustering towards the left side of the distribution. For gross incomes, the mean (RM6,190) lies above the median (RM4,582) as households with higher incomes had pushed up the average value. In the case of skewed income data like this, the median—the middle value that divides the population evenly into two groups—generally serves as a better indicator to represent the "average" household income.

In the context of living standards measurement, the net income is often viewed as a better indicator to represent households' economic circumstances since it excludes income that could not bring direct consumption benefits. The use of gross income may obscure the actual amount of economic resources available at households' disposal to consume goods and services. Ideally, transfers and statutory payments like taxes and social security contributions should be excluded from income since a portion of income would always have to be set aside for the payments, resulting in lesser amount available to meet current consumption needs and wants.

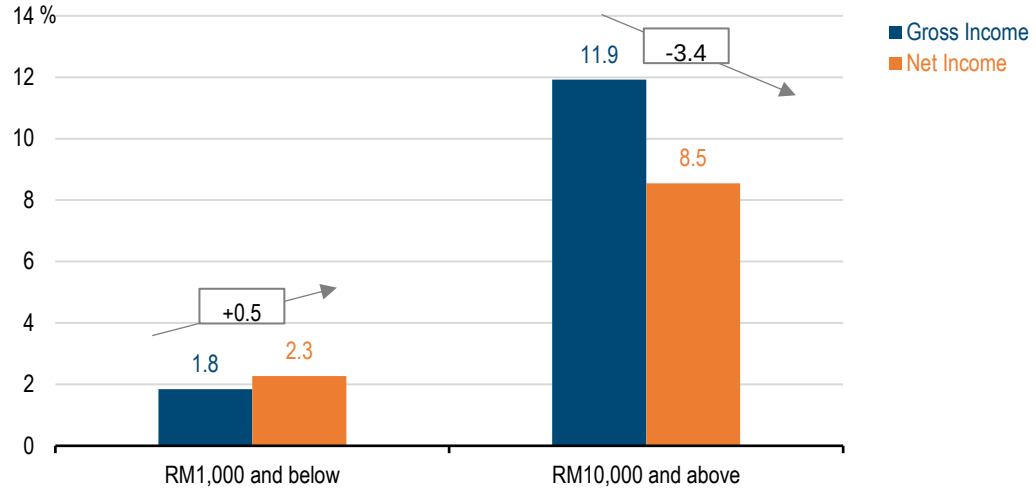
Furthermore, Figure 3.1 also shows that the median and mean for the net income were around 13.0% – 15.0% lower compared to the corresponding values for the gross income. For net income, the median and mean were RM3,991 and RM5,286, respectively, while for the gross income, the median and mean were RM4,582 and RM6,190, respectively.

The income distribution data illustrates that excluding transfer payments pushes more households to the lower income groups (below RM4,000, which can be considered the approximate middle value of the distribution), with fewer households in the higher income groups (above RM4,000). After excluding transfers paid, the proportion of households with net income below RM4,000 per month was higher at 50.1%, compared to 42.2% of households with gross income below RM4,000 per month.

Subsequently, the proportion of households with net income of RM4,000 and above was lower at 49.9%, compared to the corresponding proportion of households based on the gross income (57.8%). This was manifested by the line curve for the net income being lower than the one for gross income for all income groups above RM4,000. The number of households in this income category decreased when transfers paid were excluded from their income.

Another approach to demonstrate the consequence of the use of gross versus net income is to look at the proportion of households that fall in the bottom and top income groups. For instance, Figure 3.2 shows the percentage of households with monthly incomes of RM1,000 and below, as well as those with RM10,000 and above. Using gross income, it is estimated that about 2.0% of total households fall in the bottom income group, while around 12.0% were in the top income group. On the other hand, using net income, these shares increased by 0.5 percentage points to 2.3% for the bottom income group and fall 3.4 percentage points to 8.5% for the top income group.

Figure 3.2: Households at the bottom and top of the income groups, by gross and net income definitions, 2014



The findings from the above illustrations eventually will lead us into asking about the net effect on income distribution. This can be indicated by the Gini coefficient—a measure of inequality. The Gini coefficient for income distribution based on net income was 0.386, compared to 0.403 for the gross income. The smaller value of Gini coefficient for net income reflects the redistributive effect of transfers and taxes paid, suggesting a more equal income distribution among households. This finding is consistent with studies in the literature that found inequality-reducing impact of transfers and taxes. For example, in 2015, direct taxes and transfers reduce income inequality on average by about one-third in OECD countries, with the average Gini coefficient for net income reduce to 0.31 compared with 0.49 for market or production income[74].

Production and non-production income

One important way for households to earn income is by selling the factors of production that they own in the market e.g. labour, capital, property and entrepreneurship. Households could also be receiving income in the forms of transfers without performing productive activities. These are incomes flowing between one household and another, between households and government, or between households and charitable bodies (non-production income). Apart from transfers paid that would have some bearing on income distribution statistics, transfers received is the other side of the coin that could bring a similar effect.

If we consider the production income alone—hence deducting any income received in the forms of transfers—the prevalence of inequality is found to be higher as indicated by the Gini coefficient of 0.445. Table 3.3 shows that the median and mean values for production income (RM4,165 and RM5,715, respectively) were around 8.0% – 9.0% lower compared to the corresponding values for gross income when various transfers that households received are taken into account.

[74] Wang and Caminada (2011)

As depicted in Table 3.3, the Gini coefficient for gross income is found to be at 0.403 which is 0.042 point lower compared to 0.445 for production income that excludes direct transfers component. This shows that income redistribution in the form of direct transfers has a positive impact on the overall income distribution.

Table 3.3: Mean income, median income and Gini coefficient

Income definition	Median (RM)	Mean (RM)	Gini
Gross income	4,582	6,190	0.403
Net income	3,991	5,286	0.386
Production income	4,165	5,715	0.445
Paid and self-employment income	3,654	4,997	0.441
Money income	4,065	5,544	0.417

Source: Authors' calculations based on HIES 2014

Monetary and non-monetary income

Non-monetary incomes are also included in the measurement of incomes to capture the non-cash resources that contribute to households' well-being. One important item under this is the imputed rent, which represents the income "invisibly received" by households that live in their own dwellings. This follows the 1977 United Nations[75] recommendation that imputed rent from owner-occupied homes should be included in the compilation of household incomes for distribution analysis purposes. The Canberra Group has also noted that the inclusion of imputed rent will produce a "fairer and more accurate picture of income distribution", particularly when making international comparisons[76].

Imputed rent is the estimated value of housing services flowing from owner-occupied homes. The value is typically estimated based on the on-going actual rental rates of similar homes in the neighbourhood. Arguably, the inclusion of imputed rent as part of income statistics may overstate a household's income level since no monetary income is actually received.

[75] UNSO (1977)
[76] Canberra Group (2001)

Box 3.2: Imputed rent as expenditure

Interestingly, imputed rent is also reported as part of expenditure for households that live in the house they own. Hence, on the net basis, the associated housing costs for these households (which is different from households that are renting) will be the costs associated with home ownership such as assessment tax, quit rent and maintenance cost (presumably these costs are typically not borne by households that are renting).

The impact of imputed rent (as expenditure) will depend on the types of housing tenure:

1. For home owners who are still paying their housing loan, imputed rent paid may serve as a proxy for the monthly instalment since mortgage repayment is not part of the housing expenditure but classified as non-consumption expenditure. However, in reality this payment is made out of household's actual income rather than income augmented by the imputed rent. As such, household's actual expenditure may be understated or overstated.
2. For home owners who have already paid off the loan or otherwise own the home outright, the inclusion of imputed rent paid as part of the expenditure may overstate the households' actual expenditure.
3. For households that live in rented accommodations, only rental paid at actual rate is recorded as household expenditure. Imputed rent (as income or expenditure) is not relevant for these households hence has no effect in understating or overstating either the income or expenditure components.

Overall, imputed rent may affect households' own account in different ways, depending on the status of ownership of the home they are living in.

Table 3.3 shows that when non-monetary component was excluded from the gross income, the median and mean for money income were 11.0% lower, at RM4,065 and RM5,544, respectively. Meanwhile, inequality appears to be higher when income from imputed rent is not included, as indicated by the Gini coefficient that increased from 0.403 to 0.417. This finding is consistent with several empirical studies that show that income inequality declines when imputed rent was included in the income concept[77].

Home ownership rate exceeds 70% in Malaysia with the rate in rural areas slightly higher (85.6%) compared to urban areas (73.7%). This high ownership rate means that the flow of "income" from housing services has benefited far beyond the top 20% households. In fact, home ownership represents a substantial store of wealth for many households in the bottom 40%. This helps to explain the inequality-reducing effect of imputed rent.

[77] See, for examples, Smeeding et al. (1993), Yates (1994), and Frick and Grabka (2003)

3.5 Discussion: Fitting the Right Income Concept for Well-being Measurement

The analyses presented above show that distributional estimates can be influenced by the different concepts and definitions of income adopted. Using net income resulted in lower Gini coefficient, suggesting a more equitable household income distribution as it takes into account the effects of transfers and taxes paid by households. Additionally, the Gini coefficient was found to be higher when it was calculated based on the production income alone. This suggests a more unequal income distribution when the redistribution initiatives in the forms of transfers to households were not accounted for.

Meanwhile, the inclusion of imputed rent in the income component increases the average household income. Imputed rent seeks to factor in the benefits of owning a home compared to renting. Presumably, homeowners enjoy a higher level of welfare as compared to renters and this was captured by the "invisible income" in the form of a rent that otherwise would have to be paid to a landlord.

However, it is crucial to acknowledge that imputed rent is an estimated value that can be evaluated via several approaches[78] without any broad consensus on the most appropriate[79] method. For example, even though the rental equivalence is a fairly a common approach, it could be ambiguous in neighbourhoods where the rental market is less active or when there is insufficient number of renting households to compare with[80].

In short, it is important to recognise the differences in income definitions and their components to comply with the intended analytical purposes. For distributional analysis, transfer incomes and payments should be adequately accounted for to better estimate the welfare measures such as inequality and poverty. When a component of income involves estimation (for instance, in the case of income received in-kind or income for own consumption), the valuation should be undertaken with care in order to minimise under or over estimations.

[78] For examples (1) Rent-to-value approach (2) User-cost approach (3) Rental equivalence approach and (4) Hedonic approach; Balcazar et al. (2014)
[79] See Balcazar et al. (2014) for a review of the advantages and disadvantages of existing techniques in estimating imputed rent
[80] Lanjouw (2009)

3.6 Accounting for Income Disparities in Different Locations

The discussions in Chapter 2 highlighted that the categorisation of households into three main income groups is done by considering the income thresholds at the national level. This means that a household will be classified as B40, M40 or T20 based on the income distribution of all households in the country.

In 2014, the middle 40% (M40) households were those with monthly income between RM3,852 and RM8,319—an income range set at the national level. Subsequently, households with income below RM3,852 were the B40, and those with income above RM8,319 were the T20.

However, as the level of economic development is uneven between states in Malaysia, household income distributions differ considerably across different geographical locations. *The State of Households 2018* report[81] highlights that, if we consider the income distribution at the state level, the equivalent state-level thresholds vary significantly. For example, a household that would be considered to be part of the T20 in Kelantan by the state's income distribution may have income which is equivalent to a B40 household in Kuala Lumpur. Only Melaka, Johor and Pulau Pinang's income distributions coincide roughly with the national threshold, indicating that only around 20% Malaysian households have an economic standing that is reflective of the national benchmark[82]. Thus, using the national income thresholds to classify households seems to be discounting the disparities of living standards between states in Malaysia.

In light of the current public policy focus on the B40 households, there is a strong justification for establishing accurate income thresholds to identify households that may require welfare assistance or other government initiatives. It can be argued that aside from the existing practice of identifying them based on the national income threshold, the state-level threshold is another viable approach as it takes into account the income distributions of Malaysian households in different locations.

Table 3.4 shows the state-level thresholds for the B40, M40 and T20 income groups for all states in Malaysia. For the B40 households, the highest state-level income threshold was in Putrajaya at RM6,447, while the lowest threshold was in Kelantan at RM2,348, signifying a gap of RM4,099 or a 63.6% difference between the two extreme locations. States such as Melaka, Pulau Pinang, Negeri Sembilan and Terengganu had the thresholds of about ±13.0% or ±RM500 around the national threshold.

[81] KRI (2018)
[82] Ibid

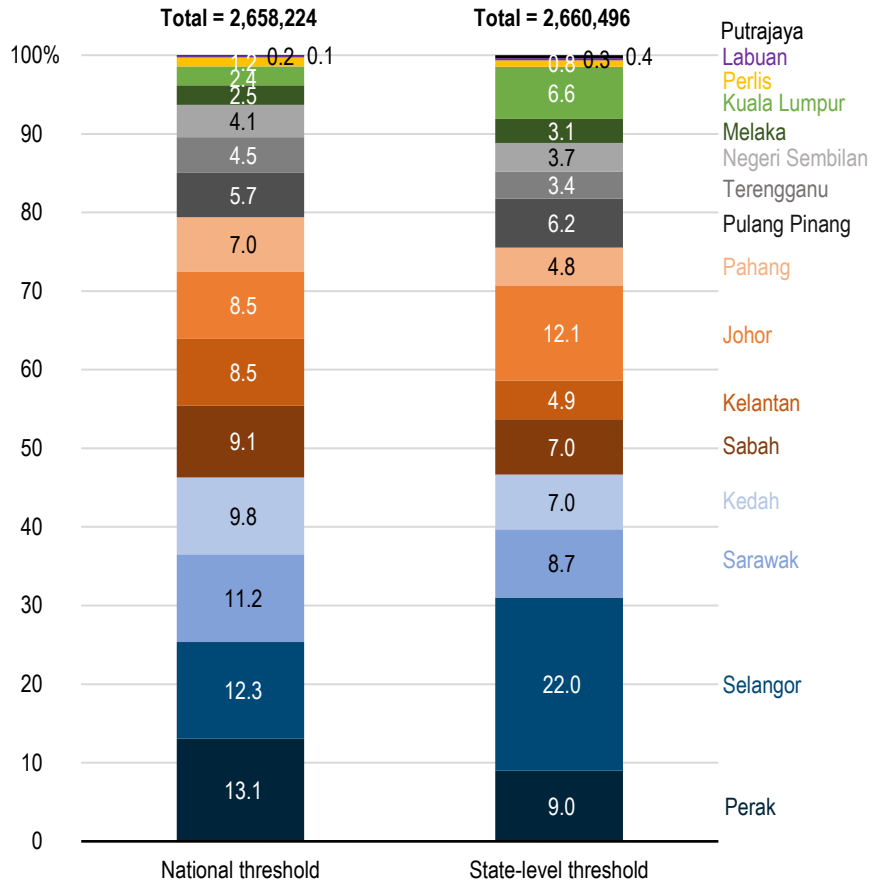
Table 3.4: State-level income thresholds for B40, M40 and T20, 2014 (RM)

State	B40	M40	T20
Putrajaya	< 6,447	6,447 – 11,005	≥ 11,005
Kuala Lumpur	< 6,361	6,361 – 13,780	≥ 13,780
Selangor	< 5,279	5,279 –11,674	≥ 11,674
Labuan	< 4,699	4,699 – 10,338	≥ 10,338
Johor	< 4,582	4,582 – 8,169	≥ 8,169
Melaka	< 4,339	4,339 – 7,811	≥ 7,811
Pulau Pinang	< 4,066	4,066 – 7,635	≥ 7,635
National	**< 3,852**	**3,852 – 8,319**	**≥ 8,320**
Negeri Sembilan	< 3,568	3,568 – 7,097	≥ 7,097
Terengganu	< 3,316	3,316 – 6,430	≥ 6,430
Sarawak	< 3,160	3,160 – 6,840	≥ 6,840
Sabah	< 3,146	3,146 – 6,911	≥ 6,911
Perlis	< 3,087	3,087 – 5,876	≥ 5,876
Perak	< 3,086	3,086 – 5,826	≥ 5,826
Kedah	< 3,045	3,045 – 6,203	≥ 6,203
Pahang	< 2,993	2,993 – 5,992	≥ 5,992
Kelantan	< 2,348	2,348 – 4,955	≥ 4,955

Source: Authors' calculations based on HIES 2014

Adopting the state-level threshold means that at any given period there will always be 40% of each state's households being identified as the B40. However, the share of each state in the overall B40 population will be different from the share calculated based on the national threshold. Figure 3.3 shows the comparison between the two approaches in terms of the total number of B40 households and the share of B40 households of each state at country level.

Figure 3.3: Share of B40 households by state, based on national and state-level thresholds, 2014



Source: Authors' calculations based on HIES 2014

Based on the national threshold, the total number of B40 households is 2,658,224. The left-side bar in Figure 3.3 shows that most of the B40 households were located in Perak (13.1%), followed by Selangor (12.3%), Sarawak (11.2%), and Kedah (9.8%), while Putrajaya had the lowest share of the B40 households (0.1%).

On the other hand, applying the state-level thresholds led to a slightly higher number of B40 households at 2,660,496 (an increase of 2,272 households). Yet, each state's share in the total numbers of B40 households differs from the national-level case. This is because when state-specific thresholds are adopted, all states will have their own populace of the poorest 40% households. The number of B40 households in each state will thus depend on the total number of households in the respective states. By definition, the higher the number of households, the higher the number of the B40 households.

The right-side bar in Figure 3.3 shows that being the most populous state in Malaysia with a total of 1.46 million households, Selangor had the largest share of B40 households at 22.0%. This was followed by Johor at 12.1% and then Perak at 9.0% (by contrast, Perak had the largest share of B40 households under the national threshold approach). Labuan's share in the total pie was the smallest at 0.3%, as it was a territory with the lowest number of households (0.19 million).

3.7 Discussion: Income Distribution and Welfare Assistance

The prevalence of B40 households appears to be dependent on whether the national or state thresholds are used. The question thus is, which is the most efficacious approach for filtering households for welfare assistance programmes—the level state-level threshold or national-level threshold?

Currently, several assistance programmes targeted for the B40 limits the qualifying income criteria at a maximum of around RM3,000 to RM4,000 per month nationwide. For example, the federal government has set a maximum gross household income of RM4,000 as the eligibility criteria for Program Bantuan Sara Hidup (myBSH). Subsequently, recipients of myBSH would also be entitled for other social programmes such as Skim Perlindungan Kesihatan Nasional (mySalam) and Skim Peduli Kesihatan (Peka 40). Meanwhile, the government's social housing programme for B40 or Program Perumahan Rakyat (PPR) set the income criteria as below RM3,000 per month.

A nationally standardised income eligibility criterion for all states can be viewed as a practical approach as it helps reduce implementation and delivery complexities. However, applying a one-size-fit-all threshold could be imprecise and conceal the diverse economic realities of Malaysian households across states.

For example, the average income levels in more developed and urban states/federal territories like Selangor, Kuala Lumpur and Putrajaya are known to be higher than the national average. Consequently, these states' income thresholds for the B40 households are usually higher compared to other states. Therefore, setting the cut-off point of RM3,000 for social housing (PPR) will translate into a smaller number of B40 households in Selangor entitled for it as compared to Perak—the state with the highest number of B40 households according to the national definition in 2014. Some households could be deprived in accessing social housing amid higher living cost in Selangor. Inadequate consideration in policy formulation on the differences in the income distribution and living costs in various states may result in uneven access to public assistance, especially for low-income and vulnerable households in the more economically advanced states.

Nevertheless, setting a qualifying criterion based on the B40 income threshold is just one of the many ways in identifying the deserving population or households' segments in need. The problems associated with establishing the maximum threshold arise due the fact that this is a relative measure based on income distribution. Hence, policymakers will need to meticulously assess and decide on the appropriate scale (state or national level) of income distribution at which government assistance will be given. The National Affordable Housing Policy has taken a positive step in this direction by setting the pricing for affordable homes not to exceed RM300,000, yet prices will vary across different states based on the average household income and construction costs in each area[83].

[83] JPN (2019)

Apart from this, it is also important to recognise that in most cases the qualifying criteria based on income only applies to the average household. As will be pointed out in next chapter, the income level should ideally be adjusted to the size of household at the operational level. This can be achieved by using equivalence scales that account for the additional cost each member of the household would add from the reference threshold.

The design of cash aid under the myBSH programme has started to account for the number of children in a household. Under myBSH, households earning RM2,000 and below would receive a cash assistance of RM1,000, households earning between RM2,0001 and RM3,000 would receive RM700 and households earning between RM3,001 and RM4,000 would receive RM500. On top of this, an additional amount of RM120 will be added for every child under the age of 18 (limited to four children). However, the differentials of households living in different locations is not yet operationalised. At the same time, household income is not adjusted to account for the number of dependents first, this resulted in outright exclusion of households with income above RM4,000 yet have a high number of dependants.

Welfare distribution is a concern for both policymakers and the public at large, especially in deciding the qualifying criteria for government aids. Therefore, efforts to refine decision-making for these pertinent issues are critical. In this chapter, we suggest considering both the income and spatial differences when making these decisions.

State governments may want to consider re-calibrating the pre-qualifying income criteria based on local conditions to better reflect the operating environment of households. Granular data at state and district levels are available in the Household Income and Basic Amenities Survey reports and would provide a more refined understanding on the diversities in income distribution in different locations. Policies can be formulated to better reach households in need.

Meanwhile, the federal government would want to view inequality at country-level in assessing each state's needs when allocating financial and other resources to the state governments. The unevenness in income distributions as depicted by nationally representative data such as the HIES would be able to guide the federal government in allocating resource more equitably and achieving its welfare objectives.

3.8 Chapter Conclusion

Differences in the components of income in measuring the households' material well-being have effects on the aggregated income statistics as well as the distributional measures such as inequality and poverty. The definition of income customarily used in the official household income statistics in Malaysia is the gross household monthly income. The use of gross income may obscure the actual amount of economic resources available at households' disposal to consume goods and services. Ideally, transfers and statutory payments like taxes and social security contributions should be excluded from income since a portion of income would always have to be set aside for the payments, resulting in lesser amount available to meet current consumption needs and wants.

Using the net income measure produces a lower Gini coefficient compared to gross income, suggesting a more equitable income distribution after the effects of transfers and taxes paid by households were accounted for. Additionally, the Gini coefficient was found to be higher when it was calculated based on the production income alone, implying a more unequal income distribution when transfers received by households were not accounted for. Meanwhile, the inclusion of non-monetary incomes such as imputed rent has increased the average household income and reduced income inequality. By factoring in imputed rent, all else being equal, homeowners appear to be enjoying higher welfare levels compared to renters.

Classification of households based on income could also be refined by accounting for differences in the income distributions in different locations. As the level of economic development is uneven between states in Malaysia, income distributions differ considerably across various geographical locations in Malaysia. Thus, using a national threshold to classify households into B40, M40 and T20 may discount the living realities of the households in their respective states, giving an inaccurate picture of their welfare from the localised context. Instead, looking at the bottom 40% of the population based on the state-level income thresholds may give a better indicator of the standard of living of these households.

CHAPTER

04

CHAPTER 4

REFINING THE INCOME-BASED APPROACH II: ACCOUNTING FOR HOUSEHOLD SIZE AND COMPOSITION

4.1 The Case for Household Size Adjustment

The discussion in Chapter 3 suggests refinements to the income-based approach through the understanding of the varieties of income definitions and geographical income distributions to better assess the living standards across all households. This chapter seeks to introduce household size as another parameter to provide better comparison and comprehension of the Malaysian households' well-being.

Malaysia's income data (from various sources for employments, properties, transfers, etc.) are typically consolidated at the household level instead of at the individual level. This explains the adoption of "household" as a common unit of analysis for distributional measures for economic well-being. While this approach provides satisfactory outcomes when each household is analysed independently, comparison across households can be misleading when the varying household size and composition are considered.

The classification of households by income groups discussed in Chapter 2 directly delineates households at the bottom 40%, middle 40% and top 20% without considering the size and composition of each household. For example, households that earned monthly incomes below RM3,860 in 2014[84] fall into the B40 group based on the first 40% cut-off criterion of slicing the income distribution.

The rudimentary way of applying these cut-offs can be misleading when comparing living standards across households with varying size. For example, take two households with an income of RM10,000 per month each. Under the current practice, both households would be classified in the top income quintile, i.e. the T20 group. However, if the first household is a two-person household while the second is a 10-person household, it is unreasonable to assume the living standards of both are the same.

On the other hand, when comparing a 10-person household with RM10,000 monthly income against a two-person household with RM2,000 monthly income, it is more likely that the standard of living of both are similar although the former's income level is higher. Yet, under the current practice, the household with RM10,000 monthly income is classified in the top income quintile, the T20 group, while the latter with RM2,000 monthly income falls into the lower income quintile, the B40. Thus, adjusting for household size and composition will potentially change the

[84] DOS (2015a); [2016 = RM4,360 monthly - DOS (2017a)]

households' position in the income distribution and affect the identification of them being in the B40 and non-B40 group.

Furthermore, it is also reasonable to assume that economies of scale arise when people live together and make collective provisions for living essentials[85], i.e. the per capita cost is lower as household size increases. Hence, doubling the household size would not necessarily require a two-fold increase in the consumption expenditure and similarly in the required income to maintain the same living standards[86].

In general, households consume a variety of goods categorised as (1) personalised goods (or private goods) such as food away from home, education and healthcare services; and (2) non-personalised goods (public goods) which can be shared among household members. It is reasonable to assume that economies of scale particularly from the consumption of public good[87] arises when people live together, resulting in lower expenditure per person for a larger size household.

The greatest economies of scale are usually attained from the consumption of public goods such as housing. Additional expenditure for shelter may not be necessary when additional members join the housing unit. Likewise, collective provision for living essentials like food, utilities and clothing would result in lower cost per person due to bulk purchases and savings in the food preparations as well as in the use of water, fuel and electricity. Spending on clothing could be saved as the items are passed down from older to younger siblings or shared among adults[88].

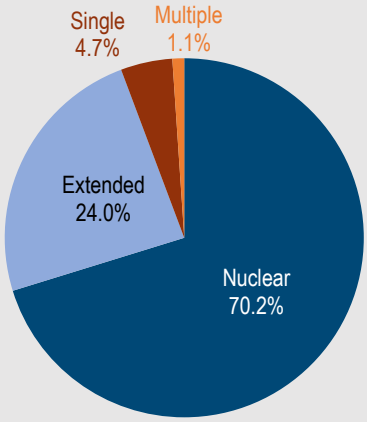
Since this chapter will critically assess the impact of household size to the general analysis, the next section will begin with an overview of the current forms and compositions of the Malaysian households as an overview for further discussions in the following sections.

[85] Prais and Houthakker (1971)
[86] Lazear and Michael (1981)
[87] Public good here refers to sharable and non-personalised goods
[88] See Deaton and Paxson (1998), Kakwani and Son (2005) and Nelson (1988)

Box 4.1: Malaysian Households and Families in 2014

The most common form of living arrangement among Malaysian households in 2014 was "family", with 94.2% of households comprise of members who were related by blood, marriage or adoption. Based on the demographic information available in the HIES 2014 dataset, nuclear family households, which consist of parent(s) with at least one unmarried child, was the most prevalent form of living arrangement in 2014 (70.2%). This was followed by extended family households at 24.0% while the remaining shares were lone or single-person households (4.7%) and multiple households (1.1%) (Figure 4.1)[89].

Figure 4.1: Types of households, 2014



Source: Authors' calculations based on HIES 2014

Definition of household type

1. **Nuclear family household:** Refers to a household that consists of members related by blood, marriage or adoption. A nuclear family may comprise of a childless couple, a married couple living with unmarried children, or a single parent (i.e. divorced/separated/widowed and never married) living with unmarried children. This type of household also includes child-headed household who live with married parents and/or brothers and sisters.

2. **Extended family household:** Refers to two or more generations of households that live together. Examples include an elderly couple living with their married children and grandchildren. This type of household may also include the head of household living together with members who are related to him/her (other than parents, siblings and children) and not related to him/her.

3. **Single-person or lone household**: Refers to a person living alone. Such a household may include a never married person who has moved out from his/her parents' house, a married person who lives

[89] These statistics are comparable to the data reported in the 5th Malaysian Population and Family Survey 2014—a survey conducted by the National Population and Family Development Board (NPFDB), focusing on the demography and dynamic scenario of population and family in Malaysia. MPFS 2014 documented that the majority of Malaysian households were family-based (almost 90%), with 66.4% was nuclear family and 22.5% was extended family. Meanwhile, the single-person households share was 8.5%. Source: MPFS (2016)

separately from his/her spouse and/or family due to work-demand, and a widowed/separated/divorced person whose children have moved out from the parental home.

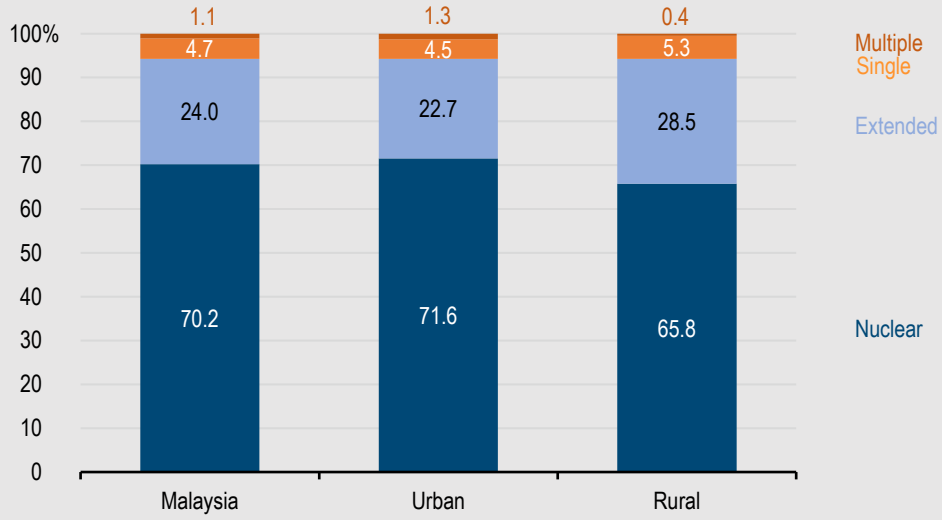
4. **Multiple family household**: Refers to a household that consists of the head of household and other members who are not related to him/her. This household may include several individuals who are living together in a household and are not related to one another by blood marriage or adoption, including house maids.

Source: MPFS (2016) and KRI definitions

Household type by strata, state and ethnic group

The percentage of nuclear family households was marginally higher in urban areas (71.6%) compared to rural areas (65.8%). It is the opposite for the extended family, which was higher in rural areas (28.5%) compared to urban areas (22.7%) (Figure 4.2).

Figure 4.2: Type of household, by strata, 2014



Source: Authors' calculations based on HIES 2014

The above findings are also present at the state level. A higher percentage of nuclear family households can be observed in urbanised federal territories/states like Putrajaya (90.3%), Kuala Lumpur (75.3%) and Selangor (72.8%). This could be the result of people's migration to the urban areas, leaving behind their extended family members (Table 4.1).

On the other hand, less urbanised states showed a greater share of extended family households. These include Labuan (36.1%), Sabah (31.3%) and Sarawak (30.0%). This type of living arrangement could be more prevalent in states with communal dwellings like the longhouse or "*rumah 65anjang*".

Table 4.1 : Type of household, by state, 2014

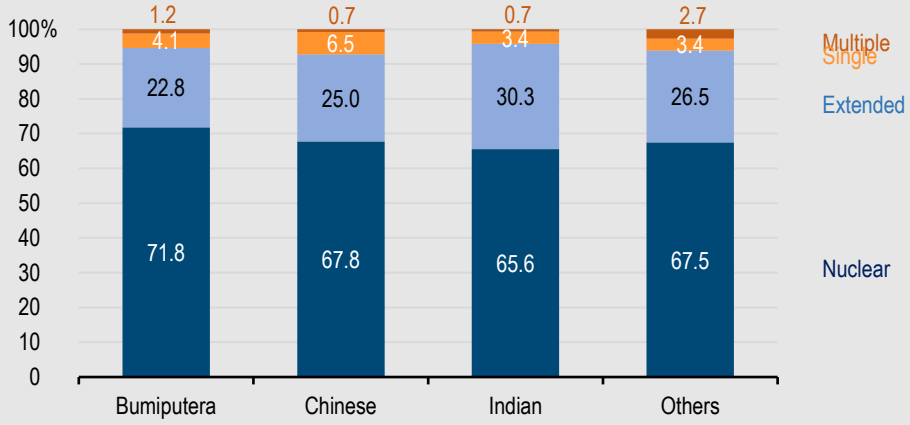
	Nuclear (%)	Extended (%)	Single (%)	Multiple (%)
Putrajaya	90.3	4.7	4.7	0.3
Kuala Lumpur	75.3	17.9	4.8	2.2
Pahang	74.4	20.1	5.2	0.3
Terengganu	74.0	22.5	3.3	0.2
Selangor	72.8	22.2	3.3	1.7
Melaka	71.7	23.7	4.1	0.5
Johor	71.0	24.6	3.6	0.8
Perak	70.8	22.9	6.0	0.3
Kedah	70.3	23.9	5.6	0.2
Negeri Sembilan	69.7	22.9	6.3	1.1
Kelantan	69.6	26.2	3.9	0.3
Perlis	69.6	25.8	3.8	0.8
Pulau Pinang	69.3	24.5	5.3	1.0
Sabah	63.2	30.0	4.9	1.8
Sarawak	60.6	31.3	7.0	1.1
Labuan	58.4	36.1	2.1	3.4
Overall	**70.2**	**24.0**	**4.7**	**1.1**

Source: Authors' calculations based on HIES 2014

For less urbanised states with higher percentage of nuclear families (e.g. Pahang, Terengganu and Melaka), this might be influenced by the high composition of Bumiputera Malays in the population, who typically prefer to live in a nuclear family setting. This contrasts with the Chinese and Indians who traditionally were more likely to live in one dwelling with other family members, although this has slowly changed in recent years[90].

Figure 4.3 shows that the percentage of nuclear family households was slightly higher among Bumiputera households (71.8%), compared to other ethnic groups (less than 70%). The Indian households topped the percentage of extended family household type while single-person households were marginally more prevalent among the Chinese (6.5%).

Figure 4.3: Type of household, by ethnic group, 2014



Source: Authors' calculations based on HIES 2014

[90] MPFS (2004)

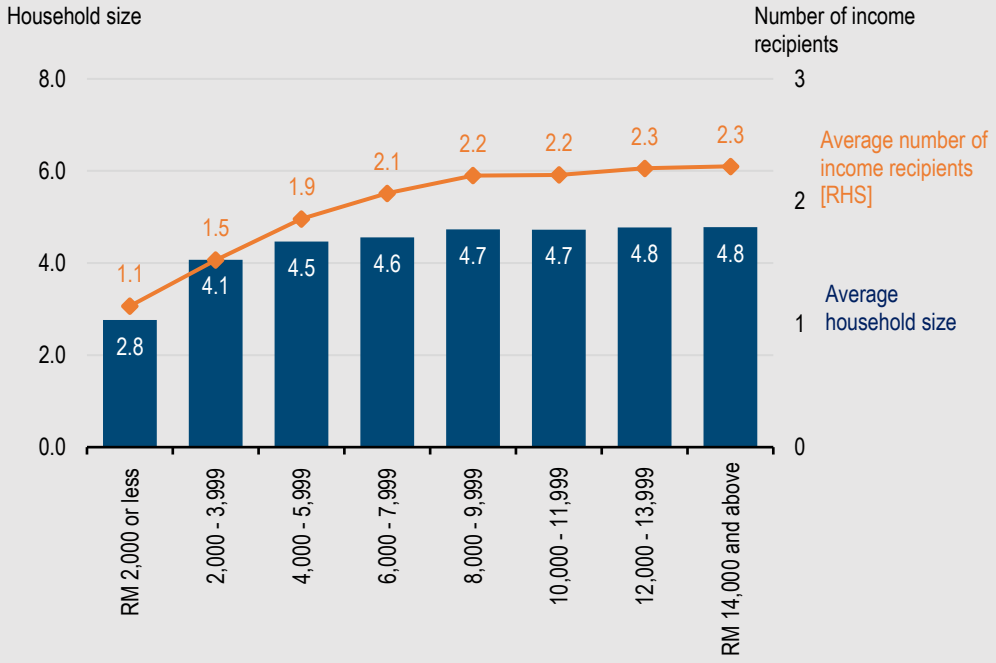
Household size and income earners

The size of Malaysian households has been gradually getting smaller over the years. The average household size in 2014 was 4.3 persons[91] with the smallest being among the Chinese (3.7 persons), followed by the Indians (4.2 persons) and the Bumiputera (4.5 persons).

The average number of income earners was 1.8 persons in 2014, in which around 44.0% had one income recipient only. The number of income recipients has an important effect on the household income and where the households are placed in the distribution. Households with single income recipient tend to fall in lower income group.

Figure 4.4 shows that households with monthly income of RM2,000 and below typically have only one income recipient. 62.1% of them have one income recipient while only 31.4% have two income recipients. The positive relationship between the number of income recipients and household income level is to be expected. With fewer number of members receiving income in a household, the take-home income is typically lesser. This explains why these households are prone to fall in the lower income group. On the other hand, households with multiple income recipients would be more likely to fall in higher income groups.

Figure 4.4: Average household size and income earners, by income group, 2014



Source: Authors' calculations based on HIES 2014

[91] DOS (2015a)

4.2 The Concept of Equivalence Scale

For a more meaningful and better comparison, household income needs to be adjusted to account for varying household sizes and compositions in order to better determine the actual living standard of all households in the country.

One method is to compare living standards across households while simultaneously accounting for differences in household size. This can be done by dividing the income of a household by the number of its members, hence transforming income into per capita basis. In doing so, this approach assumes that each member in the household exhibits uniform needs and consumption patterns, and that there are no economies of scale associated with living together.

In reality, needs and consumption can differ between children and adults, men and women, as well as between households in different geographical locations. At the same time, sharing opportunities arise when people live and make provision for living essentials together, resulting in expenditure savings.

The equivalence scale is a common tool used to adjust households' income to account for varying household sizes and compositions, as well as to account for the economies of scale arising from household members pooling their income and sharing available resources.

The scale can be construed as a "factor" that indicates the living cost variation of a household, relative to a reference household—usually a single adult—when both households have the same standard of living[92]. When the scale is applied to the unadjusted "nominal" income, it serves as a deflator that standardises the incomes by accounting for the heterogeneity in household compositions, making the state of welfare comparable across households. As such, household "equivalised income" is derived by dividing the income by "a factor" as indicated by the estimated equivalence scale.

If we take a single-person household as a benchmark, the equivalised income of another household with two adults and three children will be the income level required by the household unit to enjoy the same welfare state of the benchmark household. The examples in Table 4.2 and Table 4.3 illustrate the situation of a single-person and a family household each with income of RM3,000 per month.

Table 4.2: Income after adjusted for household size and composition

Household size and composition	Unadjusted income (RM)	Equivalence scale	Equivalised income (RM)
1 adult (benchmark[93])	3,000	1	3,000
5-member family (2 adults and 3 children)	3,000	2.5	1,200

[92] Lewbel and Pendakur (2008)

[93] The benchmark household is the reference household type against which the differential cost of having different household sizes is compared to. For the benchmark household, the equivalence scale takes the value of 1, i.e. the equivalent income is equal to the unadjusted "nominal" income.

Assuming that the equivalence scale for the five-member household is 2.5, the fourth column in Table 4.2 shows that the living standard of that household is lower at RM1,200 compared to the benchmark household, despite both having the same level of "nominal" income of RM3,000. The hypothetical equivalence scale of 2.5 demonstrates that to bring the material well-being of the household of five members to the same level as the benchmark household, that household needs to have 2.5 times more income or equivalent to RM7,500 total income (Table 4.3).

Table 4.3: Income to maintain the same living standards

Household size and composition	Unadjusted income (RM)	Equivalence scale	Equivalised income (RM)
1 adult (benchmark)	3,000	1	3,000
5-member family (2 adults and 3 children)	7,500	2.5	3,000

4.3 Equivalised Income for Malaysian Households

Numerous studies have sought to devise the most appropriate and universal equivalence scale, yet no single standard has generally been established. Challenges in devising an ideal equivalence scale have led many studies to subjectively resort to straightforward scales while making the underlying assumptions transparent to users[94]. The per capita income technique may be the easiest to adopt as total income is simply divided by the number of household members. However, this measure inadequately accounts for heterogeneity within households such as the age of household members and the implications on the consumption needs and patterns.

Other than the straightforward per capita measure, the "expert" scales that assign weights to different household members are commonly used (Table 4.4). Most of these scales normally take into account the household size and members' characteristics such as age and gender. For example, the OECD-modified scale assigns a weight of 1.0 to the first adult, 0.5 to additional adults and 0.3 to children under 15 years old.

Table 4.4: Examples of equivalence scales

Method	Equivalence scale factor		
	First adult	Additional adults	Children
Per capita income	1.0	1.0	1.0
Oxford scale (Old-OECD scale)	1.0	0.7	0.5
OECD-modified scale[95]	1.0	0.5	0.3
Square root scale[96]	Household income is divided by the square root of household size. This implies that the needs of a four-members household are twice as great as those of a single-person household. No distinction is made between the differing needs of adults and children.		

Source: UNECE (2011)

[94] UNECE (2011)
[95] Hagenaars et al. (1994)
[96] Rainwater (1974)

In this study, the equivalence scale for Malaysian households was estimated by adopting the Engel framework for a bundle of necessity goods comprising food, clothing and housing expenditure using HIES 2014 data.

The household composition is differentiated between adult and children because child costs matter in comparing households[97]. Also, the cost of an additional adult is typically lower than the first adult[98]. Children are grouped according to their schooling ages i.e. 6 years and below; between 7 and 12 years; and between 13 and 17 years[99]. Members above the age of 17 years are considered adults. The scale is interpreted relative to a single-person household[100]—i.e. the reference household— who carries a weight of 1.0.

Regression analyses are carried out separately for each state in Malaysia and further broken down to urban and rural areas since as discussed in Chapter 3, these are the salient dimensions that exhibit large variations in the households' living standards.

Adoption of this methodology subsequently means that each household—at different state and stratum (urban/rural), and of different size and composition—has its own scale. For a more detailed discussion on the methodologies, refer to the *Technical Paper I: Estimating the Equivalence Scale for Malaysian Households*[101] accompanying this report. The overall result (average for Malaysia) is presented below in Table 4.5 to provide a broad idea of the values of the scale:

[97] Deaton and Muellbauer (1986)
[98] Chanfreau and Burchardt (2008)
[99] Children below age 7 are attending pre-school or not yet started schooling session, children between 7 and 12 years old go to primary schools and children between 13 to 17 years old are attending secondary schools.
[100] According to the HIES 2014, 4.7% of Malaysian households were made up of single-person households in 2014, with almost three quarters of them living in urban areas. The median monthly income of single-person households is RM2,390 compared to all households' median income of RM4,581.
[101] Hawati and Nur Aseken (2019)

Table 4.5: Summary of equivalence scale

Overall	Scale factor	Adult equivalence scale Average scale per person	Marginal increase
Reference household = 1 adult	**1.00**	**-**	**-**
Additional adults			
1 additional adult	0.61	0.61	-
2 additional adults	0.96	0.48	0.35
3 additional adults	1.11	0.37	0.15
4 additional adults	1.12	0.28	0.01
5 additional adults	1.06	0.21	-0.06
Children aged 6 years and below			
1 additional child	0.56	0.56	-
2 additional children	0.83	0.42	0.27
3 additional children	0.91	0.30	0.08
4 additional children	0.87	0.22	-0.04
5 additional children	0.75	0.15	-0.12
Children aged 7 – 12 years old			
1 additional child	0.64	0.64	-
2 additional children	1.02	0.51	0.38
3 additional children	1.21	0.40	0.19
4 additional children	1.26	0.32	0.05
5 additional children	1.23	0.25	-0.03
Children aged 13 – 17 years old			
1 additional child	0.59	0.59	-
2 additional children	0.90	0.45	0.31
3 additional children	1.02	0.34	0.12
4 additional children	1.01	0.25	-0.01
5 additional children	0.92	0.18	-0.09

Source: Authors' calculations based on HIES 2014

Table 4.5 shows that the scales for additional adult and child are less than that for the first reference adult. Starting from that reference point, the income (or expenditure) required to maintain the same living standard due to one additional adult is 61% of the current level. The scale factor thereafter increased by 35 percentage points (i.e. = 0.96 – 0.61) for the second additional adult, indicating an even lesser amount of income (or expenditure) required to maintain the same living standard.

Meanwhile, for the first child aged 6 years and below, the required additional income is slightly lower at 56% of the reference adult and it is even lower at 27% for the second additional child. Similar patterns are observed for children in other categories.

4.4 Equivalent Scale Elasticity and Economies of Scale

By having the equivalence scales, household incomes can be standardised or equivalised so that the economic resources available within all households are comparable after the household's size effect is adjusted for. The equivalised income (Y_e) is calculated by dividing the gross monthly income, (Y_i) with the estimated equivalence scale (ES), i.e. $Y_e = \left(\frac{Y_i}{ES}\right)$.

The estimated scales presented in Table 3.5 comprise the net effects of the extra cost of having additional household members and the spill-over benefits rising from living together. Due to the presence of economies of scale in consumption, the scale for additional household member, either an adult or a child, is less than 1.00 (i.e. 1.00 being the scale assigned for the first reference adult). This means that the required increase in income to maintain the same welfare level is less than the increase in household size.

Since the underlying determinant here is the household size, Buhmann, Rainwater, Schmaus, and Smeeding (1988)[102] showed that nearly all equivalence scales can be approximated by the equivalence elasticity, (α), the degree by which economic resources or incomes change with household size, (n)[103].

The value of α can range between 0 and 1. In the case of unadjusted gross monthly income, α = 0 indicating no adjustment is done on income to account for household size. Meanwhile, α = 1 when per capita household income is used, suggesting no economies of scale in households' consumption. Doubling household size will require income or expenditure to increase two-fold to maintain the same living standard.

Without differentiating between adults and children, Table 4.6 illustrates how the elasticity, α, changes as household members increase for two extreme cases i.e. (1) unadjusted gross monthly income and (2) per-capita income which assume no economies of scale in resource sharing.

[102] Buhmann et al. (1988)
[103] The value of α can be derived as follows:

$$\alpha_i = \frac{\ln\left(\frac{Y_i}{Y_e}\right)}{\ln(n)}$$

where:

α_i is the coefficient of economies of scale for i[th] household
Y_i is the gross monthly income for i[th] household
Y_e is the equivalised monthly income for i[th] household
n is the number of household member for i[th] household

Table 4.6: Equivalent scale elasticity and household size, 2014

Household size	Gross income	KRI-estimated scale	OECD-modified scale	Square root scale	Per capita income
1 (Reference)	0.00	0.00	0.00	0.50	1.00
2		0.67	0.58	0.50	
3		0.64	0.58	0.50	
4		0.62	0.59	0.50	
5		0.62	0.59	0.50	
6		0.63	0.61	0.50	
Average	1.00	0.63	0.59	0.50	0.00

Source: Authors' calculations based on HIES 2014

The average elasticity value for an additional member using the scale estimated by KRI is 0.63. This means that on average, the income (or expenditure) level needs to increase by 63% to maintain the same living standard when one additional member joins a household. This average value is slightly higher compared to the value using the OECD-modified scale (α = 0.59), as well as the value using the square root scale (α = 0.5). However, all of them still fall within the range found in the existing empirical studies of between 0.2 and 0.8[104].

The increment in the required income to maintain the same living standard as the reference household decreases as the household size increases. This can be seen in Table 4.6 where the scale decreases as the household size increases. Note that the same pattern can be observed in Table 4.5, where the marginal increase in required income (to maintain the same living standard) is lower when there are more adults or children in the households.

Indirectly, the result also implies the extent of economies of scale and potential savings that arise from living together. The smaller the value of α (the degree by which incomes need to change as household size changes to maintain the same living standard as the reference household), the higher the economies of scale in consumption. As shown in Table 4.6, in the case of the KRI-estimated scale, the scale elasticity initially declines with additional household members and then rises again after the fifth member. This suggests that the effect of economies of scale starts to taper when households have more than five members.

[104] Buhmann et al. (1988)

4.5 Relationship between Income and Household Size

The relationship between household income and household size is contingent upon the use of household income that is adjusted or not adjusted to account for household size. Table 4.7 shows that the median gross monthly income (unadjusted) has a strongly positive relationship with household size as indicated by the correlation coefficient of 0.86. It implies that the household income is generally higher for larger households. As pointed out earlier, assessing households' welfare this way can be misleading as households differ in size and composition.

The per capita measure is typically adopted to adjust for household size effect, hence improving the comparability of households' welfare. Table 4.7 shows that when household income is equivalised using the per capita approach, a strong negative association between household size and median income prevails with a correlation coefficient of -0.93.

Table 4.7: Correlation between household size and income, 2014

Type of income	Gross income (unadjusted)	Per capita income
Overall median	4,583	1,191
Number of household members	Median income (RM)	
1	2,390	2,390
2	3,463	1,731
3	4,335	1,445
4	5,035	1,259
5	5,061	1,012
6	5,104	851
7	5,199	743
8	5,268	658
9	5,254	584
10	5,782	578
Correlation between household size and median income	0.86	-0.93

Source: Authors' calculations based on HIES 2014

The relationship between household income and household size is an area of great interest to many, particularly the policymakers. For example, the strong negative correlation between household size and per capita income is particularly the case for many developing countries as found in numerous household surveys spanning Asia, Africa and Latin America[105]. Subsequently, this has led to the conclusion that household members in larger size household tend to be poorer or have lower living standards compared to those in smaller size households[106].

One possible explanation is attributed to the consumption of food, largely considered a private good, although economies of scale may arise in terms of food preparation and bulk purchases. As the food budget share is usually high in developing countries, an increase in the household size would result in an increase in food consumption foremost compared to other goods and services.

[105] For example, see Visaria (1980), Lipton and Ravallion (1994), Sundrum (2003)
[106] Lanjouw and Ravallion (1995)

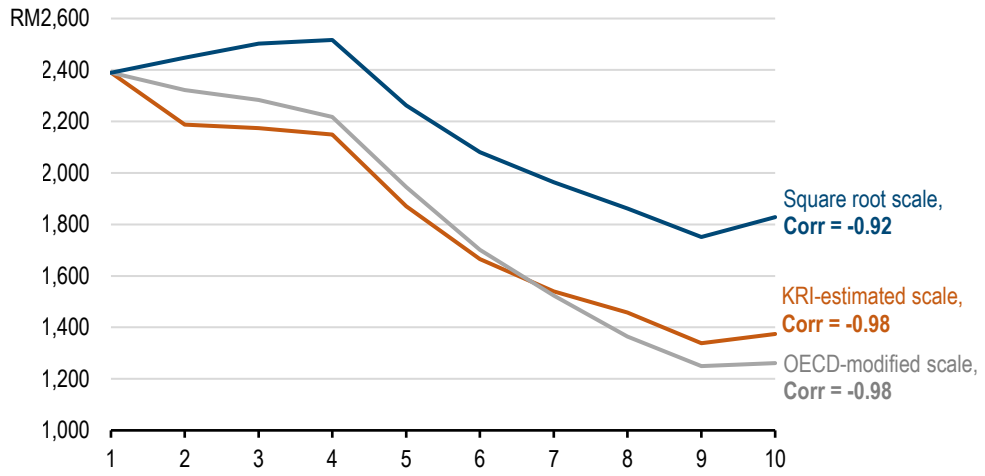
Intuitively, this suggests that as the household expands, the household's welfare will deteriorate if income stays constant. The stance one takes from the fact that expanding household size adversely affects households' well-being level via the use of the per capita approach can have policy implications such as the role of population policy in development, and the scope for fighting poverty using demographically contingent transfers[107].

Lanjouw and Ravallion (1995)[108] argue that this widely held view is questionable given that households consume a variety of goods comprising not only of private goods but also public goods. While poor households may incur more food costs as the household size expands, such an explanation does not consider the economies of scale associated with consuming public goods such as housing. In this regard, even poor households enjoy economies of scale in consumption and even more so if their household size is larger. Hence, the authors caution against concluding that larger families tend to be poorer.

The adoption of an equivalence scale to adjust household incomes by accounting for the size economies effects strikes the balance between the two extreme measures (unadjusted vs per capita income) in analysing the implications of large household sizes.

Figure 4.5 demonstrates the relationship between median income and household size for three types of equivalence scales. Similar to the per capita approach, the relationship between median equivalised incomes and household sizes is still negative except that these measures have already accounted for the size effects. Equivalised household incomes tend to be lower as household sizes become larger. The correlation coefficient using the square root scale is -0.92 while the correlation coefficients using the KRI-estimated scale and the OECD-modified scale are identical (-0.98). It is also worth noting that the levels of equivalised income adjusted using the KRI-estimated scale and the OECD-modified scale are quite similar to each other.

Figure 4.5: Correlation between equivalised income and household size, 2014



Source: Authors' calculations based on HIES 2014

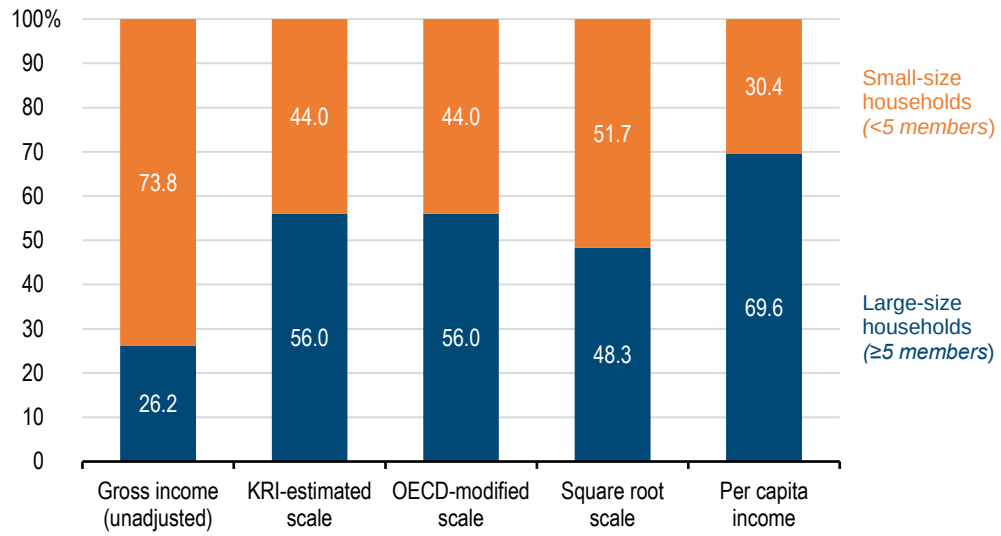
[107] Ibid.
[108] Ibid.

4.6 Impact on Poverty and Inequality Measurements

The impact of adopting the equivalence scale in addressing the existence of size economies in household consumption can be demonstrated by assessing the proportion of large households that fall into poverty. Assuming that PLI is defined as half of the median income, Figure 4.6 shows the incidence of poverty between large and small size households. Here, households with above average household size[109], i.e. with five members and above, are considered as large-size households.

Figure 4.6 demonstrates that when household incomes are not adjusted, the incidence of poverty for large households is 26.2%. Poverty seems to be more prevalent among small-size households with the share of 73.8%. On the other extreme, poverty rate is significantly higher for large-size households at 69.6% when the per capita measure is used.

Figure 4.6: Incidence of relative poverty for large and small-size household, by unadjusted income and equivalised income, 2014



Source: Authors' calculations based on HIES 2014

This shows that the prevalence of poverty among large-size households tend to be underestimated when income is not adjusted and overestimated when income is adjusted on per capita basis. The impact of poverty on large-size households when income is equivalised was found to be in-between the two extremes. The incidence of poverty for large-size households is 48.3% when the square root scale is used, and again the results based on the KRI-estimated scale and OECD-modified scale are identical at 56%.

[109] In 2014, the average household size is 4.3 persons.

Additionally, measures of inequality would also be sensitive to the choice of the adult equivalence scale. Using the Gini coefficient as an indicator, Table 4.8 shows that inequality is at 0.403 for the unadjusted gross income distribution. Inequality is slightly higher at around 0.43 when income distribution is equivalised using the per capita income approach and KRI-estimated scale. Gini coefficients remain more or less the same (at around 0.40) when the OECD-modified scale and the Square root scale are adopted.

Table 4.8: Gini coefficients for unadjusted income and equivalised income

Income distribution	Gini
Gross income (unadjusted)	0.403
KRI-estimated scale	0.432
OECD-modified scale	0.402
Square root scale	0.399
Per capita income	0.434

Source: Authors' calculations based on HIES 2014

4.7 Impact on Households' Ranking in the Income Distribution

The most important use of equivalence scale is for incomes to reflect households' welfare level more meaningfully and to ensure better comparisons. One expected outcome from this adjustment exercise is changes in households' ranking in the distribution of income. Taking the current practice of classifying households into the B40, M40 and T20 groups as the basis, the following figures demonstrate the changes in households' position in the income distribution before and after household incomes were adjusted.

The results using four different scales to adjust household income are shown. These are:

1. KRI-estimated scale (Figure 4.7)
2. OECD-modified scale (Figure 4.8)
3. Square root scale (Figure 4.9)
4. Per capita income scale (Figure 4.10)

For each figure, the x-axis refers to the households' initial income group using the current B40, M40 and T20 definitions. The y-axis shows the percentage of households in each income group after their monthly incomes are adjusted. Essentially, the bar charts show the income groups that the households fall into after their incomes were adjusted to account for household size and composition.

Comparison of household rankings before and after income adjustment using four types of equivalence scales

Figure 4.7: KRI-estimated scale

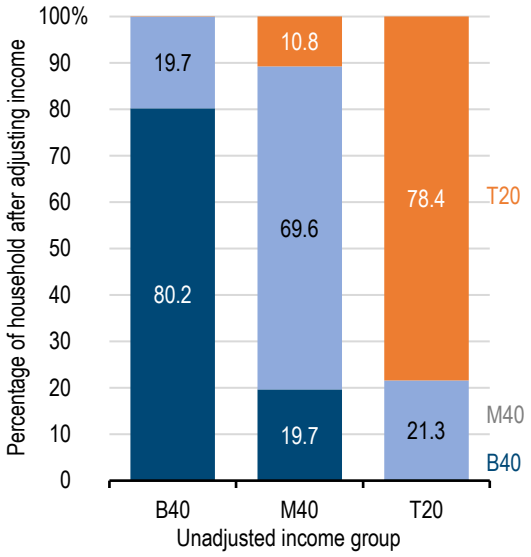


Figure 4.8: OECD-modified scale

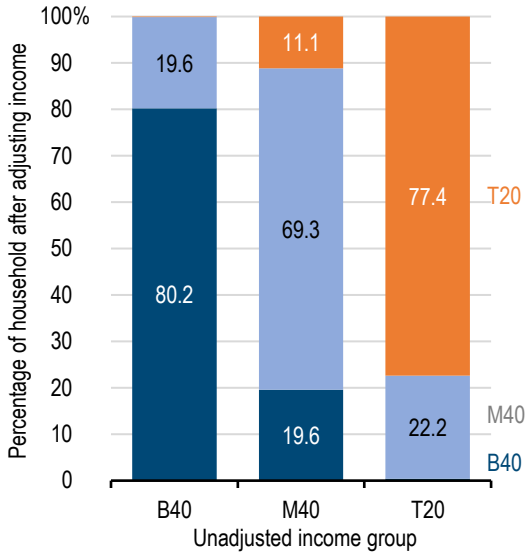


Figure 4.9: Square root scale

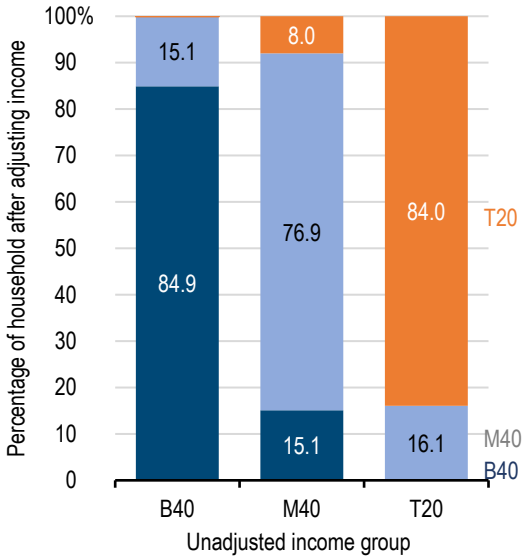
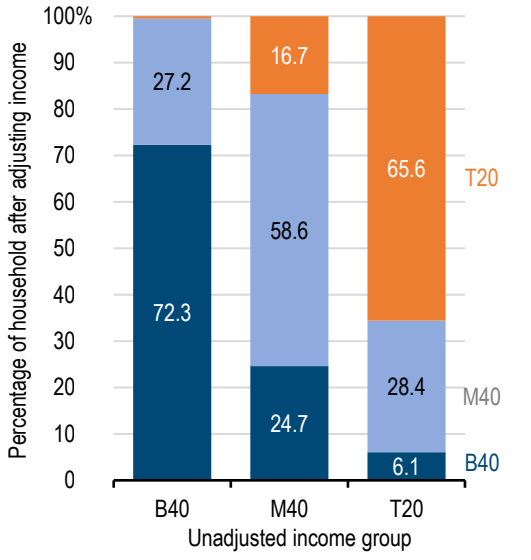


Figure 4.10: Per capita income scale



Source: Authors' calculations based on HIES 2014

To read the charts, consider Figure 4.7 as an example. Using the KRI-estimated scale to adjust the households' income, it is found that 80.2% of households that were initially identified as the B40 remained as B40, while the remaining households have been reclassified as M40. Among households that were initially in the M40 group, around 70.0% remained in the same income group, while another 20.0% moved down to the B40 and 10.0% moved up to the T20. Similarly,

for those which were initially in the T20, only 78.4% remained in the same income group and the rest moved down to the M40.

When household incomes are adjusted to per capita basis, Figure 4.10 shows that 72.3% households that were initially grouped as the B40 remained as B40, while the remaining 27.2% and 0.5% had been reclassified as the M40 and T20, respectively. Among households that were initially in the M40 group, only slightly more than half remained in the same income group, while 24.7% were pushed down to the B40 and another 16.7% were pulled up to the T20. Similarly, for those in the T20, only 65.6% remained in the T20 since 28.4% and 6.1% were pushed down to the M40 and B40, respectively.

In general, the results from all four measures show that the households' income groups and hence their living standards could be different after their incomes are standardised or equivalised. A very small number of households in the T20 appear to move all the way down to the B40 due to large household sizes, while those in the B40 were reclassified and moved up to the T20 due to the small household sizes. This can be seen in the case of per capita approach.

The effect of income adjustment on households' rankings using the OECD-modified scale and KRI-estimated scale are very similar. The percentage of households that remained in the B40 is around 80.0%, in the M40 around 70.0% and in the T20 around 78.0%. These mean that the welfare level of around 20.0% to 30.0% of households were inaccurately measured to reflect the state of their material well-being relative to the rest of households.

Compared to the KRI-estimated scale and OECD-modified scale, the per capita method produces results that slightly underestimate the proportions of households that remain in the same income group while the square root method slightly overestimates them. Adoption of such approaches should be avoided due to reasons discussed earlier in the chapter.

A fundamental aspect in the effort of assisting households in need is the mechanism to properly identify them. This is especially important in ensuring that the right people are assisted, hence averting the exclusion and leakage issues. The above identification issue may result in some eligible households being deprived from welfare assistance and at the same time ineligible households receiving some aid. Income adjustment that takes into account household size and composition is one of the necessary steps to ensure that resources are channelled to the deserving households.

4.8 Impact on the Profile of B40 Households

In Chapter 2, the profile of B40 households was presented to provide a general idea about their characteristics. Broadly, the B40 households exhibit common attributes such as a higher proportion of them rely on a single breadwinner, possess lower educational qualifications, are employed in lower skill jobs with lesser earning potentials and a lower level of residual income compared to the M40 and T20 households. Demographic factors such as age and gender also play some role in influencing the income status. Households with elderly or single mother heads are more likely to be in the B40 group.

This section revisits the analysis and examines the changes in the B40 profile after adjustments have been made to household incomes to account for household sizes and compositions. The equivalised income threshold for B40 after adjustment is RM1,650 compared to the gross income threshold of RM3,852. Table 4.9 shows the comparison of the B40 profiles before and after income adjustment in terms of several socioeconomic dimensions. Results show that the profiles have not changed much after adjustments on incomes were made. On average, the difference before and after income adjustments is around 2.0 percentage points.

Table 4.9: Comparison of the profile of B40 households, before and after income adjustment, 2014

Dimensions	Details	Proportion among the B40 (%)		
		Before income adjustment (Gross income)	After income adjustment (Equivalised income)	Percentage point change
Number of income recipient	1	64.3	58.3	-6.0
	2	29.1	31.2	2.1
	3	5.6	7.9	2.3
	4 and above	1.1	2.7	1.6
Number of working members	Not working	12.1	8.9	-3.2
	1	59.1	55.2	-3.9
	2	24.4	27.8	3.4
	3	3.9	6.3	2.4
	4 and above	0.6	1.9	1.3
Age of household head	Below 30	11.2	8.5	-2.7
	30 – 59	65.8	73.2	7.4
	60 and above	23.0	18.3	-4.7
	Average	43.0	43.0	0.0
Gender of household head	Male	80.6	83.7	3.1
	Female	19.4	16.3	-3.1
Marital status of household head	Never married	13.0	8.0	-5.0
	Married	74.1	81.0	7.0
	Widowed/Divorced	13.0	11.0	-2.0
Marital status of household head (women only)	Never married	22.0	15.8	-6.2
	Married	27.1	31.2	4.1
	Widowed/Divorced	50.9	53.1	2.2
Educational attainment of household head	Primary and no formal education	31.4	30.0	-1.4
	Secondary	59.4	61.1	1.7
	Post-secondary and tertiary	9.2	8.9	-0.3
Occupational skill of household head	Low skill	25.5	22.6	-2.9
	Mid skill	65.5	66.7	1.2
	High skill	9.0	10.7	1.7

Source: Authors' calculations based on HIES 2014

While the characteristics of the B40 households remain almost the same, it is important to note that that the composition of B40 households may not comprise the same households. As household income is equivalised, households' position in the adjusted income distribution change and some households were being pulled down as B40 while others may be pushed up as non-B40.

B40 households with heads of households aged 60 years and above show a reduction in their share by 4.7 percentage points after income adjustments. Similarly, the share of B40 households with heads of households below 30 years old decreases by 2.7 percentage points. In the meantime, the share of B40 households with heads of households between 30- and 59-years old increases by 7.4 percentage points.

The second dimension that shows a change worth highlighting is in terms of the marital status of the household heads. Overall (total B40 and non-B40), the proportions of households headed by persons with "never married' and "widow/divorced" statuses are small—only 12.6% and 8.1% respectively. This means that the remaining 80.0% are households with "married" heads or couples.

Table 4.9 shows that the share of B40 households with "never married" and "widow/divorced" heads falls by 5.0 and 2.0 percentage points respectively. On the other hand, the share of B40 households with heads with "married" marital status increases by 7.0 percentage points.

Similar patterns can be observed if we consider households headed by women only, except that the share of households with "widowed/divorced" women heads increases by 2.2 percentage points. This suggests demoted living standards among single-mother heads relative to "married" or "never married" women household heads.

The above two findings that show more households with heads in the middle-age group and with "married" status fall in the B40 group is very much related to the household size that they are heading. Middle-aged heads are those who usually support households of a larger size (average = 4.5 persons). Meanwhile, heads of households in younger and older age groups usually live in smaller size households (average = 3.8 persons and 2.8 persons. Respectively) (Figure 4.11).

Figure 4.11: Average household size by age group, 2014

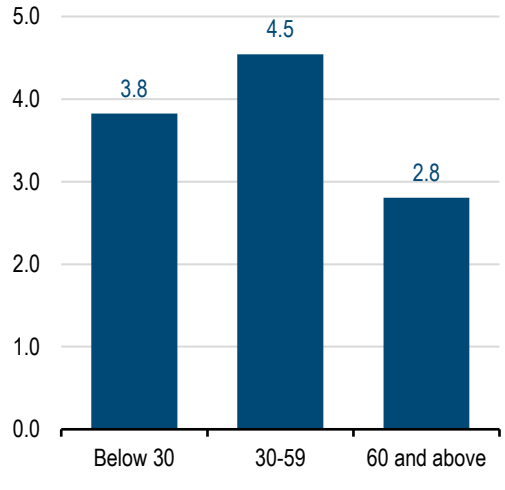
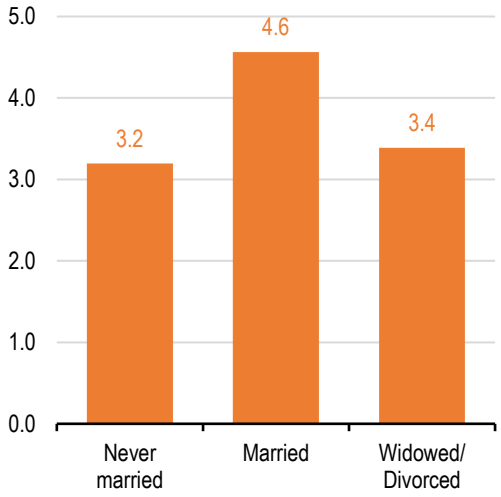


Figure 4.12: Average household size by marital status, 2014



Source: Authors' calculations based on HIES 2014

Before income is equivalised, some households with more members were erroneously identified as non-B40 since their incomes were not adjusted to account for household size and composition. However, after these factors were taken into account, their "true" welfare levels relative to other households were uncovered, resulting in more households of larger size being reclassified as B40.

Similarly, household heads with "married" status also usually live in larger size households (average = 4.6 persons) (Figure 4.12). They were mostly couples or families with children. On the other hand, households with "never married" heads were usually smaller in size (average = 3.2 persons). Among single-person households, only 14.2% were "married" while the remaining 85.8% were with marital statuses other than that (i.e. 45.2% were "never married" and 40.6% were "widowed/divorced"). These results imply the high prevalence of households with "never married" and "widowed/divorced" status to become single-person households.

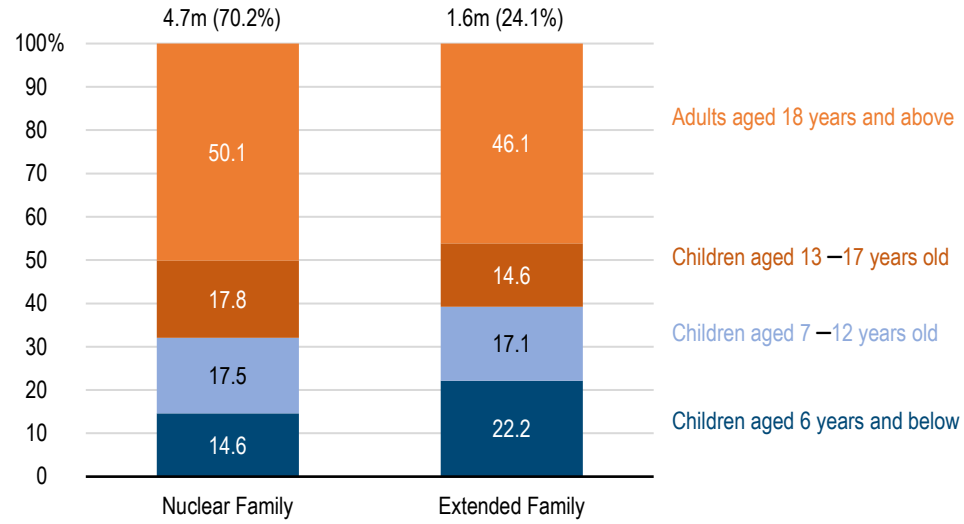
It appears that the well-being of households with families or households with larger sizes tend to be adjusted downwards when the incomes of all households are equivalised. When income is adjusted using the equivalence scale approach, the income level of single-person households do not change since they carry a weight of 1.00. Although this is the case, the positions of families or other larger sized households were brought down due to the size adjustment process, hence pushing the positions of single-person or other smaller sized households further up the income distribution.

The final dimension that shows notable change after the income adjustment is the share of B40 households with one income earner, which drops by 6.0 percentage points. As pointed out earlier, households with younger or older head(s) with "never married" marital status typically live in smaller sized households. In many cases they were single-person households in the younger or older age groups. Single-person households by definition only have one income recipient. The earlier findings found that the positions of these households tend to be revised upward after adjustments were made on household incomes. This explains the decrease in the share of one income earner households among the B40 households after household income is adjusted.

4.9 Discussion: Welfare of Families

The results discussed above would help to shape our focus on the well-being of larger sized households or in the Malaysian household context—the families. The majority of the Malaysian households were families with 70.2% being nuclear families and 24.0% extended families in 2014. Around half of the household members were children of various ages (Figure 4.13).

Figure 4.13: Percentage of adult and children by family type, 2014



Source: Authors' calculations based on HIES 2014

The well-being of these households, especially those who are vulnerable, deserve attention in the design of public policy to ensure their needs are attended. For instance, with both husband and wife working amid weakening extended family system, nuclear families face challenges in terms of childcare, and many are dependent on private care services or domestic helpers[110]. Childcare needs come with safety and security issues and have implications on the cost of living, particularly among families with young children.

Although household size is getting smaller, the faster pace of household formation compared to population growth means that the design of houses design needs to be re-aligned to meet demographic shifts while at the same time ensuring a good housing and neighbourhood quality. Meanwhile, rapid urbanisation and escalation of property prices[111] require policies that would ensure decent home for every family at a price within their means. The adequate supply of social housing is also necessary to ensure households that are unable to afford adequate and decent homes are provided assistance to meet their housing needs and not force into homelessness.

As "household" continues to be a relevant unit of analysis, it is also important to acknowledge the comparison of well-being across all households can be obscured by the heterogeneity of households. Measures such as inequality and poverty often require populations that are

[110] Choong et. al. (2018)
[111] Ismail et. al. (2019)

demographically homogeneous in order to accurately provide comparisons between income levels of households. As discussed in this chapter, one way of alleviating this concern is by adjusting household incomes using an adult equivalence scale, hence providing a measure of "living standard" that is comparable across households with differing compositions. Meanwhile, as family forms the most basic unit of our society, it is crucial to view existing and emerging challenges facing the nation from a family's perspective.

4.10 Chapter Conclusion

Household income needs to be adjusted to account for varying household sizes and compositions to better determine the actual living standard across all households in the country. Households' income groups and hence their relative living standards could be different when their incomes are equivalised or standardised. Based on the KRI-estimated equivalence scale, around 80.0% of households identified as B40 remained in the same B40 income group, while the rest of the households initially in the B40 were reclassified as M40. Among households that were initially in M40 group, around 70.0% remained in the same income group, while 20.0% moved down to B40 and 10.0% moved up to T20. Similarly, for those who were initially in T20, 78.4% remained in the same income group and the rest have moved down to M40. The KRI-estimated scale produces results that are similar to the OECD-modified scale.

Due to the economies of scale in consumption of an additional member entering a household, either an adult or a child, it does not necessarily lead to a two-fold increase in income required to maintain the same living standard as before. Based on the KRI-estimated scale, the equivalent scale elasticity ranges between 0.63 and 0.67, indicating that around 60% in income is required to maintain the same living standard per additional household member. As household size becomes larger, the marginal effect of each additional member tapers off after the 5th additional member.

CHAPTER

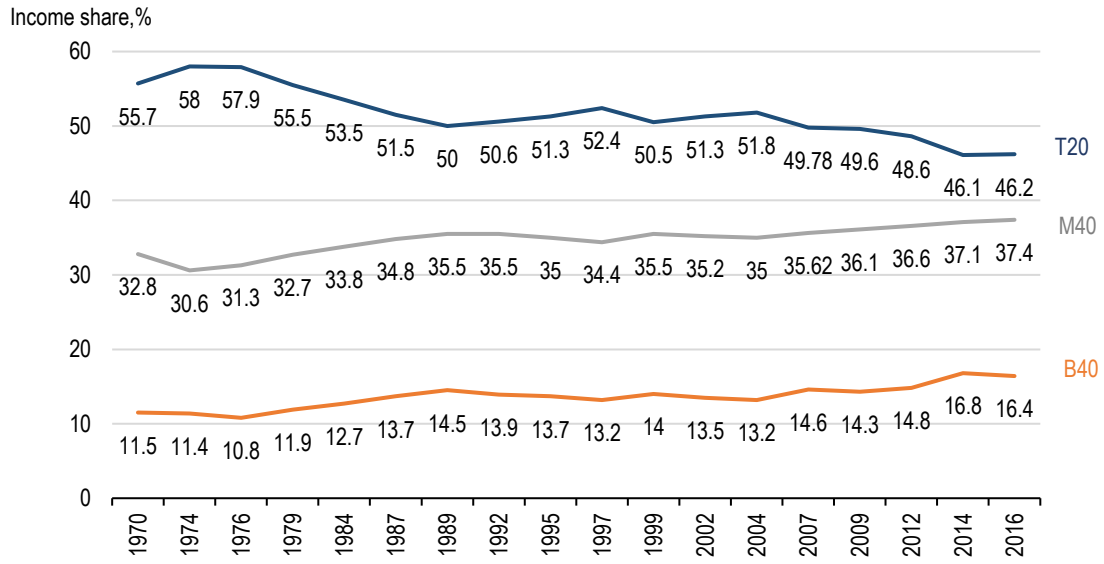
05

CHAPTER 5
DEMARCATION OF MALAYSIAN HOUSEHOLDS: THE CONSUMPTION-BASED APPROACH

5.1 Consumption as an Alternative Basis for Measuring Material Well-being

Data from the HIS have shown that the income gap between the T20 and B40 of households has narrowed over time from 1970 to 2016. This means that from an income approach, the growth of GDP in the country has not benefited just the top 20% of society but also the bottom 40% and the middle 40%. Between 1970 and 2016, the percentage share of income for the B40 has increased from 11.5 % to 16.4%, while that of the M40 rose from 32.8% to 37.4% in the same period. (Figure 5.1).

Figure 5.1: Income share of B40, M40 & T20, 1970-2016



Source: DOS (2017a)

However, economic well-being cannot be enhanced by simply improving the overall income inequality in the country. The poor economic welfare conditions in households can still manifest itself through other dimensions of well-being and should not be measured in terms of absolute income gaps between the rich and the poor. Consider the following rhetorical questions in absolute terms of household incomes: if B40 households are able to enjoy a "decent" standard of living, would the "unequal share" of income between the T20 and B40 matter? Similarly, if the M40 can enjoy a decent standard of living, would the income inequality between the M40 and T20 matter? Should every household converge to the M40 income bracket? What should that income be? Or are relative terms of comparing incomes masking the real issue, which is assisting the absolute poor?

Therefore, even though the income gap may have improved over the years, it does not reflect or determine whether the general population is able to enjoy a decent standard of living. Apart from ensuring that economic growth benefits the B40 by increasing their income share, what is more important is not the gap between the top and the bottom income levels but the costs of attaining a decent standard of living[112].

An alternative proxy that has been used to measure households' well-being or standard of living is household expenditure or consumption. The choice of using "consumption" to measure expected lifetime resources or household welfare is significant because it can detect households' preferences to borrow to meet current consumption patterns (including setting aside residuals for savings). However, households' indebtedness and savings are not incorporated in this analysis due to a lack of data. The outcome of households' preferences is reflected in their purchased items. The use of household consumption to measure well-being eliminates observed inconsistencies in welfare caused by fluctuations in income.

In this chapter, a hedonistic view is employed to analyse how, for a given level of income, households' consumption patterns can reflect their well-being. The hedonistic view essentially assigns value as a function of revealed preference.

Deaton (2006) claims that any measure, relative or absolute is subject to the "Micawber Problem"[113]. In essence, Deaton argues,

> *"…Why should everything depend on such a tiny difference? …And why do we say that someone who is just below the poverty line is poor, and thus a candidate for transfers, while someone who is just above it, whether by sixpence or by six annas, needs no help and can be safely left to their own devices? Even if we could precisely set the poverty line, and even if we could precisely measure each person's income, neither of which conditions are close to being met, it makes no sense to treat such similar people so differently*."

The Micawber Problem appeals to a more intuitive view of poverty—that even if one is able to precisely generate some line to demarcate households, how different are those just above and below the line? One would expect that there is very little difference. Essentially, the Micawber Problem highlights the problem of using a singular measure of poverty (for example, income). In order to overcome such limitations, findings from this chapter complement the income-based measures introduced in the preceding chapters by generating a more nuanced view of household well-being in Malaysia.

[112] Sen (2001),Sandel (2012), Frankfurt (2015)
[113] Wilkins Micawber is a character in Charles Dickens' novel, David Copperfield

In the book titled *The Origin of Wealth*, Eric Beinhocker proposes a thought experiment—a tale of two tribes[114], where he compares the well-being of two individuals from two distinct places. On one hand, we have the New Yorkers, a cell-phone using, café-latte drinking tribe living along the Hudson River. On the other, we have the Yanomamö, a stone-tool making hunter-gatherer tribe living along the Orinoco River. The economy of the Yanomamö is concentrated in hunting, gathering, gardening a limited number of fruits and vegetables and maintaining shelters. The economy of New York on the other hand is diverse.

The thought experiment is as follows: what if you had the income of an average New Yorker, but could only spend it buying items available in the Yanomamö economy? Perhaps you would be able to afford the largest mud-hut, and have access to the finest claypots, but you would be still be materially poorer than the average New Yorker.

The idea that is enshrined in the thought experiment is that *well-being is less about how much money you have, but rather more about what your money can buy*. The most dramatic difference between Yanomamö and New York is not that their wealth is multiple times less than the New York, but that New Yorkers have access to so many more goods and services, functionings and markets. The thought experiment more aptly captures what Sen intended to describe as the measure of well-being: commodities, capabilities and functionings[115].

Therefore, the estimated cost of the consumption basket of any reference group must be aligned with the true cost of living at different locations, a crucial factor that conventional poverty line income estimations neglect to take into account. The ILO (1976) advocated for a basic needs approach to address poverty. These basic needs were identified as what people require to live—food, clean water, shelter, clothing and access to essential healthcare. More sophisticated versions of the basic needs approach moved beyond the provision of specific goods and services to embrace broader social achievements such as nutrition and health, literacy and longevity[116].

However, the basic items a household needs to purchase with their own income are also determined by the effects of fiscal policy levers and the provision of public goods by the government to enhance the well-being of households. The definition of net income as described in Chapter 3 produces a different income distribution for households. Therefore, consumption patterns are also contingent on the extent of government expenditure on social provisions in a country. When government transfers and benefits are considered part of the operating environment that enable the "functionings" of households, the necessary expenditure for households will be lower in countries where the provision of government services is extensive and enough to cover households' basic needs. Examples of such government services would include universal healthcare, free formal education, subsidised childcare and subsidised mass transportation systems. A household's expenditure will be even lower when targeted assistance

[114] Beinhocker (2006)
[115] Sen (2001)
[116] MPI

is also given; for example, tax credits to families with children or shelter provided through social housing.

The inclusion of government-led social programmes will have a positive impact on consumption expenditure, where basic needs of health services and education are no longer evident in the Expenditure Space (Section 5.2). Such programmes also demonstrate the responsibility of the government in enhancing the general well-being of the public, both in the provision of necessary public goods and in improving living affordability

The rest of the chapter deals with using household expenditure as a proxy to the underlying commodities, capabilities and functionings[117], to study the distribution of Malaysian households along the lines of their consumption expenditure and ultimately their well-being.

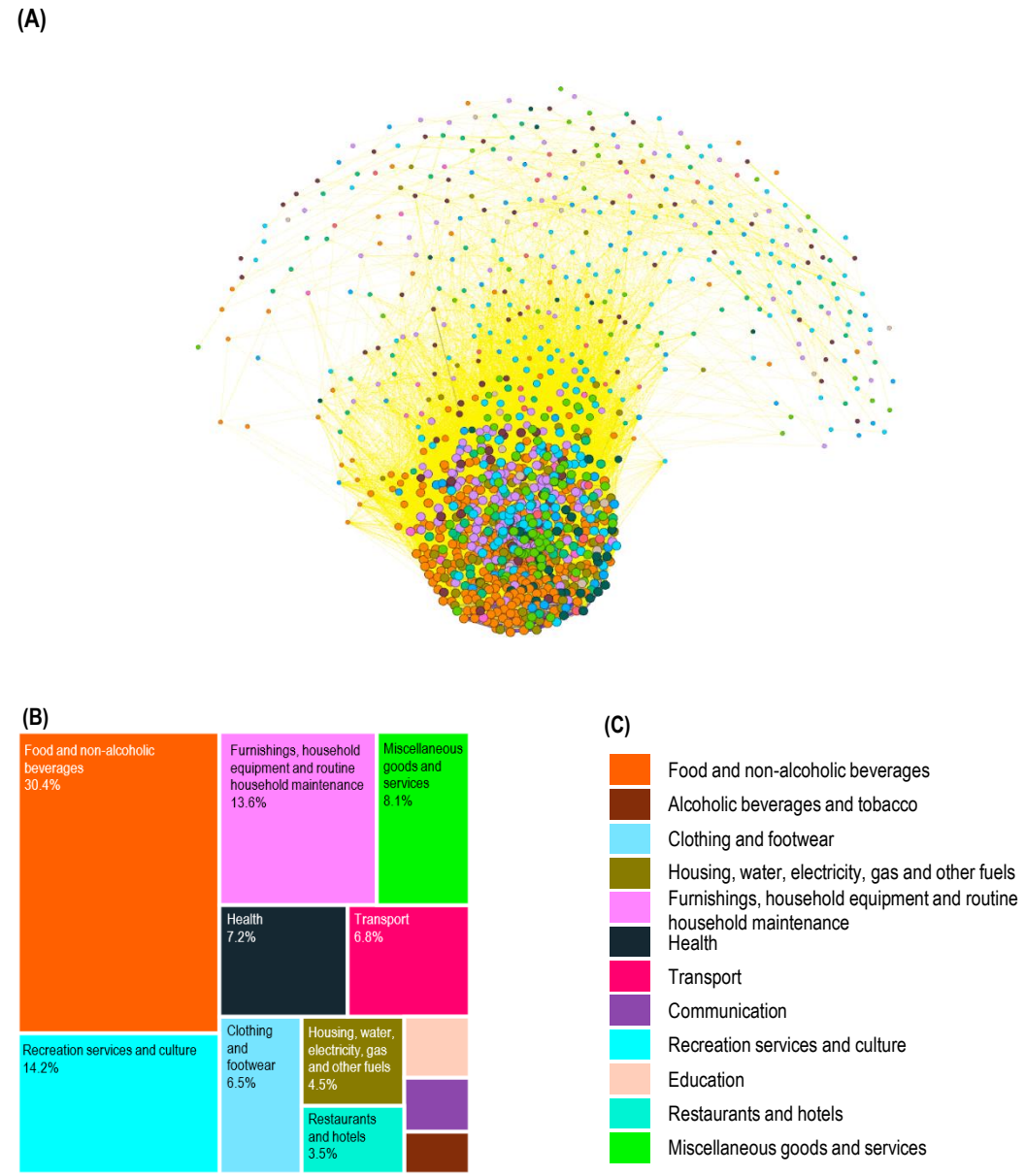
5.2 The Expenditure Space

The Product Space methodology[118] represents the concept of relatedness among different products traded in the world. The authors of this methodology conceptualised that a country's capacity to produce and trade diverse and ubiquitous/exclusive products is ultimately a function of the capabilities that exist within the nation. In this report, we have employed similar techniques to generate the Expenditure Space for Malaysian households. For a more detailed discussion on the methodologies, refer to the *Technical Paper II: The Expenditure Space: A Model to Demarcate Malaysian Households*[119] accompanying this report. In line with the literature of basic needs and beyond[120], we apply the methods developed in the product space to households as a measure of household well-being. By applying the same methods, a household's capacity to afford diverse and ubiquitous/exclusive goods and services are expressed as a function of its well-being (limited by actual income and the availability of goods and services).

Figure 5.2 below depicts the Expenditure Space. Our analysis looks at the diversity of products consumed as well as developing a criterion on what items are consumed to live (basic needs) and what items contribute to a greater well-being based on households' revealed preferences.

[117] Ibid.
[118] Hausmann and Klinger (2006); Hidalgo and Hausmann (2009); Hidalgo et al. (2007)
[119] Ho and Ismail (2019)
[120] Maslow (1943), Sen (2001), Beinhocker (2006), ILO (1976)

Figure 5.2: The Expenditure Space



(A) Network representation of the Expenditure Space visualised using the Fruchterman – Reingold Algorithm.
(B) Treemap representing the composition of nodes.
(C) COICOP[121] clusters.

[121] UNSD (2018)

The nodes in the Expenditure Space represent goods and services purchased by households, while the links represent the degree to which two goods or services are co-consumed. The size of the nodes corresponds to the degree to which one node is connected to other nodes—the larger the size of a node, the greater the number and strength of links it has with other nodes. The colour of the links represents relatedness between goods and services[122].

It is evident that the Expenditure Space is organised in a clear core-periphery structure. Network models organised as such exhibit two traits:

1. Core – containing nodes that exhibit many connections to other nodes.
2. Periphery – a region outside of the core where nodes are generally less interconnected.

It is further observed that goods and services situated at the core tend to have a larger average degree as represented by the size of the nodes in the core. This implies that they are co-consumed by a larger proportion of households. Jointly, these two traits (being in the core and having larger sizes) imply that these goods are purchased by most households regardless of their income or size. This suggests that these goods and services are necessities or basic needs, required by all households. Moreover, the core consists heavily of food items, clothing items and housing items as described by COICOP colours.

The inverse is generally true for goods and services situated at the periphery. These tend to be goods and services only consumed by select households, and the fact that these goods and services are less interconnected implies that they are non-necessities and goods that reflect "a better well-being" or are aspirational[123], by the nature of their exclusivity. The periphery tends to be composed more of recreational services and culture, private healthcare and private education[124].

5.3 Household Consumption Bundles

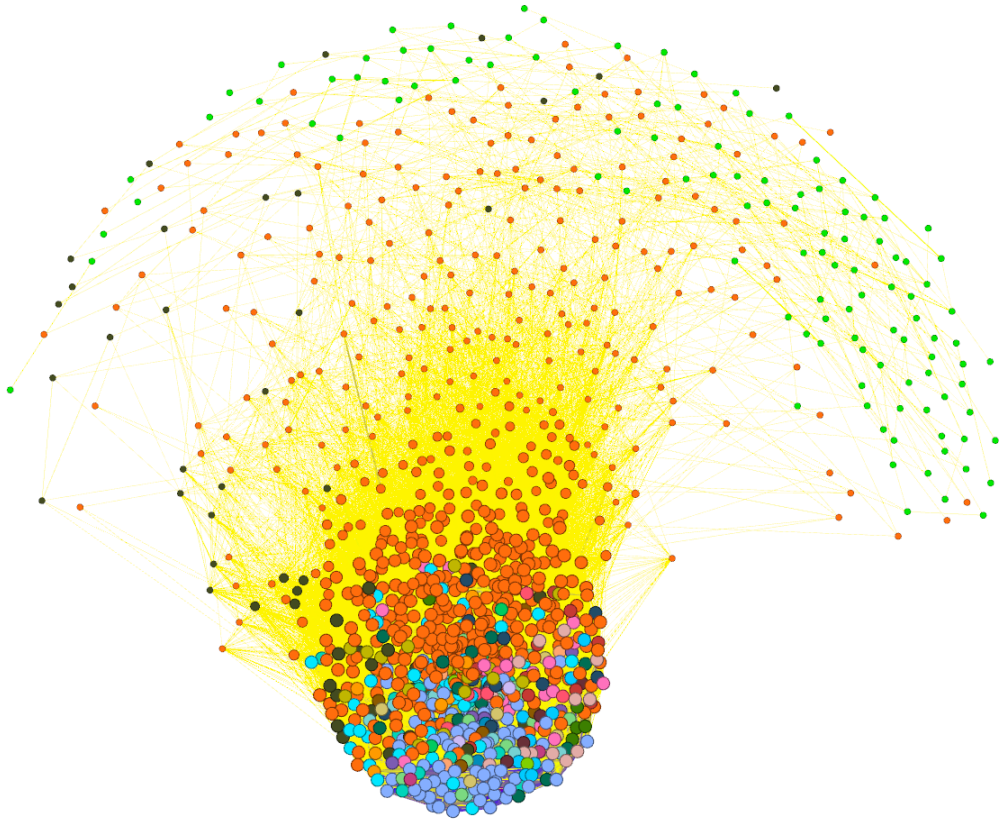
Following the literature that household expenditure first satisfies basic needs and consequently turns to more "aspirational consumption" this section employs community analysis of the Expenditure Space. Community analysis is a technique in network science and graph theory used to group and categorise a subset of nodes (goods and services) into different clusters based on how they are configured in the network[125].

[122] Ho and Ismail (2019)
[123] As defined by Currid-Halkett (2017) as those who consume to signal as belonging to a higher-ranked group (or class) or for upward social mobility.
[124] The distinction is made because both healthcare and education are subsidised heavily by the government in Malaysia.
[125] Ho and Ismail (2019)

The aim of this exercise is to develop an alternate classification of products. While the COICOP classification is one that is based on purpose, our resultant classification from community analysis would be based on product relatedness that is the emergent result from the various actual consumption choices of Malaysian households.

Figure 5.3 below presents the same Expenditure Space, colour-coded by households' respective product bundles obtained from the community analysis.

Figure 5.3: The Expenditure Space (Community Analysis): A Portrait of Malaysia's Consumption 2014



A detailed summary of each bundle is published in the following format. The figures are organised as follows:

Location of bundle in the Expenditure Space	Cumulative frequency
A	**B**
Share of expenditure group in the bundle	**Example of goods and services in the bundle**
C	**D**

Section **A** gives the position of the bundle in the Expenditure Space. Each bundle can reside in the core, the periphery, or both. The statistics indicated at the side of the Expenditure Space provide three main descriptions of the bundle:

1. Location in Expenditure Space
2. Total goods and services contained in the bundle
3. Average degree of each node in the Expenditure Space

Section **B** describes the distribution of consumption of these goods and services over household deciles computed based on equivalised income[126]. Each ogive is in reference to the 45-degree line which represents the case for which every subsequent decile is perfectly matched with another 10% increase in the consumption of each respective bundle. Curves above the 45-degree line indicate that expenditure is concentrated in the lower deciles, while curves below the 45-degree line indicate that expenditure is concentrated in the higher deciles. In the event that expenditure is concentrated in the "centre", the shape of the curve will be sigmoidal.

Section **C** is a stacked-bar chart which describes the composition of said bundle by the COICOP classification. One may refer to section **B** to get a sense of how the different products are concentrated within each bundle.

Section **D** provides examples of some of the goods and services contained within each bundle. The list is intended to be indicative of the types of goods and services that are related to one another and isn't exhaustive.

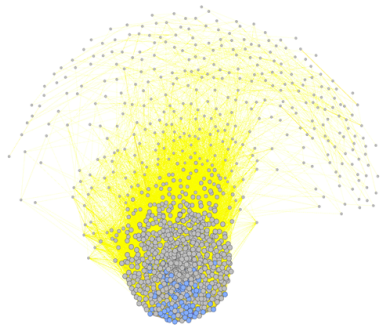
[126] Hawati and Nur Aseken (2019)

Group 1 (Bundles 1 and 2)

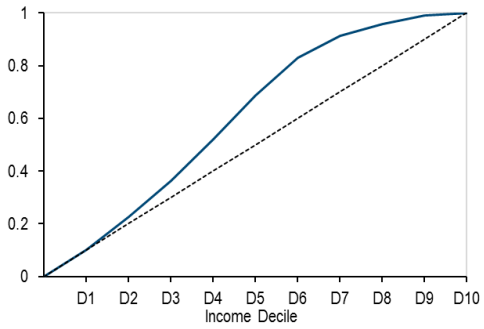
Group 1 (Bundles 1 and 2) represents the bundle of goods and services that are consumed by poorer households. As income rises, expenditure in Group 1 no longer constitutes a significant proportion of household expenditure.

Bundle 1

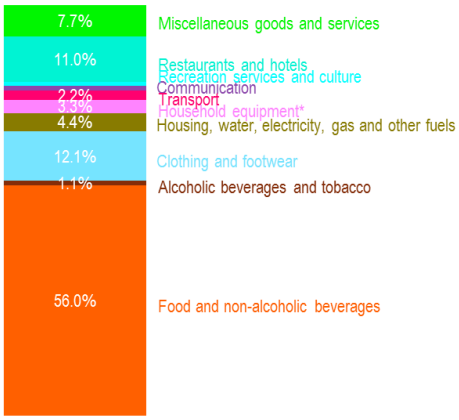
Location of bundle in the Expenditure Space



Cumulative frequency



Share of expenditure group in the bundle



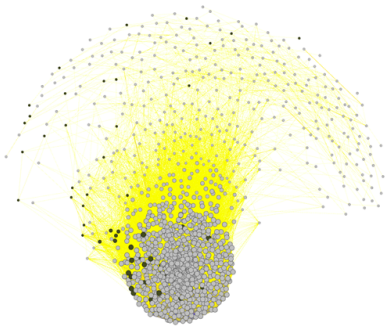
Example of goods and services in the bundle

Expenditure group	Examples
Miscellaneous goods and services	Bath soap, toothpaste
Restaurants and hotels	Nasi lemak, nasi campur, Nescafé, tea
Recreation services and culture	ASTRO service charge
Communication	Prepaid mobile card
Transport	RON95
Household equipment*	Detergent, washing powder
Housing, water, electricity, gas and other fuels	Utility bills, cooking gas
Clothing and footwear	Baju kurung, slippers, ready-made trousers/jeans
Alcoholic beverages and tobacco	Cigarettes
Food and non-alcoholic beverages	Local rice (5% broken), chicken (including offals/slaughtering charges), beef, onions, garlic, carrots, kangkong, fresh coconut, bean sprouts, brinjals, cucumber, tomatoes, potatoes, hen's eggs, tea bags/leaves

Note:
1. *Furnishings, household equipment and routine household maintenance.
2. Goods and services listed as part of the bundles may not be exhaustive, but merely indicative of the type of goods and services which relate to one another.

Bundle 2

Location of bundle in the Expenditure Space

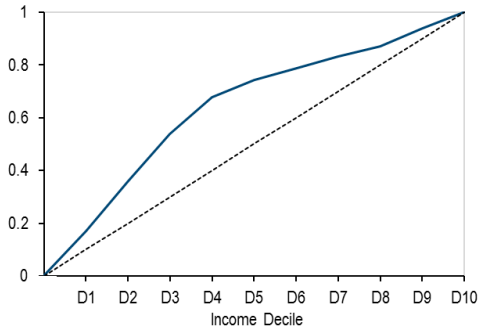


Location: **Core - periphery**

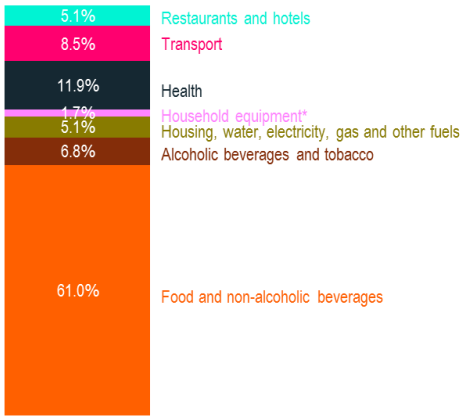
Total number of products: **59**

Average degree: **1.5**

Cumulative frequency



Share of expenditure group in the bundle



Example of goods and services in the bundle

Expenditure group	Examples
Restaurants and hotels	Payments made to Residential College, free food provided by employer and others
Transport	Bus fares (within towns), rented vehicles (with driver)
Health	Deworming medicine, contraceptive pills, payments for minor surgeries in Government clinics
Household equipment*	Repairs
Housing, water, electricity, gas and other fuels	Firewood, wiring
Alcoholic beverages and tobacco	Tapai, todi, shandy
Food and non-alcoholic beverages	Local rice (10% broken), imported rice, chicken, buffalo meat, salted fish, talapia, bananas, rambutan, langsat, durian, bamboo shoot, sweetened creamer milk

Note:
1. *Furnishings, household equipment and routine household maintenance.
2. Goods and Services listed as part of the bundles may not be exhaustive, but merely indicative of the type of goods and services which relate to one another.

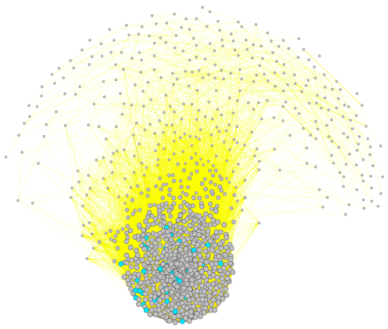
It is observed that the presence of items such as local rice (5% broken), chicken, beef, onion*kangkung*, prepaid mobile cards, nasi lemak, Nescafé and *teh* is indicative of the lifestyle of poorer households in Malaysia that spend most of their income on necessities, whilst being able to enjoy a few discretionary goods and services such as ASTRO and are somewhat able to eat out at affordable local eateries.

Group 2 (Bundles 3, 4 and 5)

Group 2 represents the bundle of goods and services that experiences a rise in consumption as income rises but that tapers off at higher income levels These bundles represent items that are consumed by households in the middle portion of the distribution, but no longer constitute a large proportion of the household budget at higher income levels.

Bundle 3

Location of bundle in the Expenditure Space

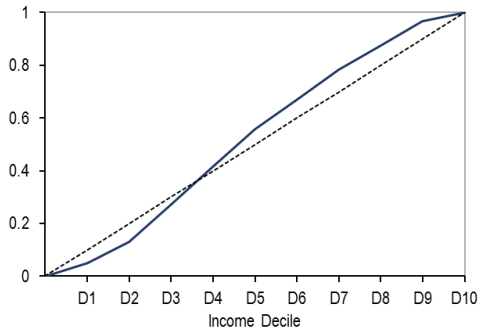


Location: **Core**

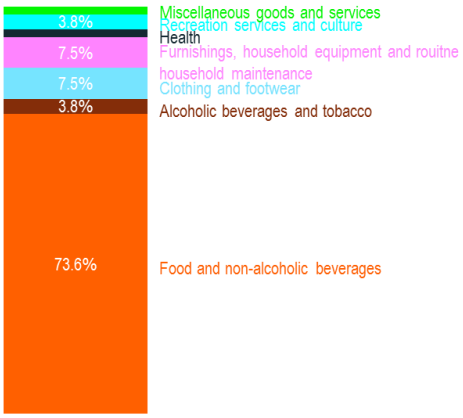
Total number of products: **53**

Average degree: **4.6**

Cumulative frequency



Share of expenditure group in the bundle



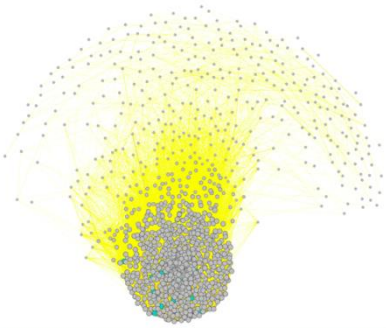
Example of goods and services in the bundle

Expenditure group	Examples
Miscellaneous goods and services	Others (Premium including service charges for group insurance)
Recreation services and culture	Weekly newspaper, local Malay magazines/publications
Health	Tablets/capsules for fever
Furnishings, household equipment and routine household maintenance	Plastic containers, scourers, sponges
Clothing and footwear	Petticoat, cotton cloth
Alcoholic beverages and tobacco	Tobacco, cigarette paper/leaves
Food and non-alcoholic beverages	Cow/buffalo's edible offals, glutinous rice, canned fruits, squid, rice flour, sweet potatoes, instant ketupat

Note: Goods and services listed as part of the bundles may not be exhaustive, but merely indicative of the type of goods and services which relate to one another.

Bundle 4

Location of bundle in the Expenditure Space

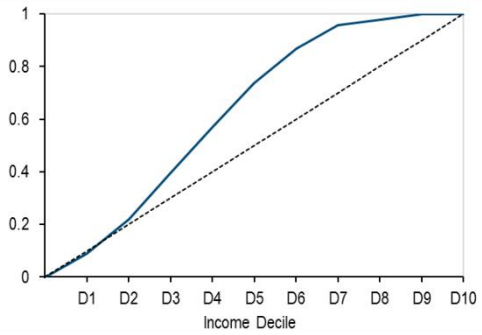


Location: **Core**

Total number of products: **16**

Average degree: **4.7**

Cumulative frequency



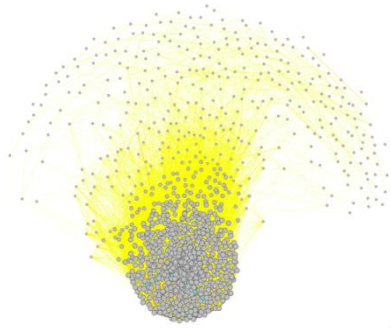
Share of expenditure group in the bundle

Example of goods and services in the bundle

Expenditure group	Examples
Food and non-alcoholic beverages	Tamarind, shrimp paste, cockles, kerisi, others (capsicum, snake gourd, jering), others (kari leaves, instant spices, soto, mee bandung), lemon, limes, monosodium glutamate, flavoured food, angle gourd, selayang, serai, coffee powder, turmeric powder, tongkol/kayu, prawn (small)

Bundle 5

Location of bundle in the Expenditure Space

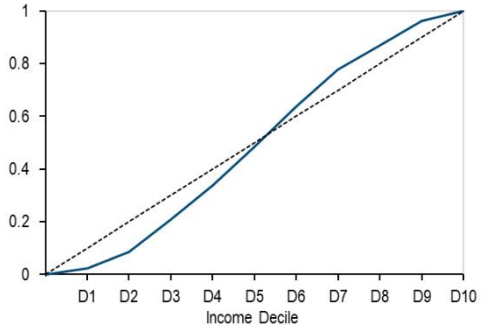


Location: **Core**

Total number of products: **16**

Average degree: **4.7**

Cumulative frequency



Share of expenditure group in the bundle

Example of goods and services in the bundle

Expenditure group	Examples
Food and non-alcoholic beverages	Tamarind (slices), spring onions, baby corn, groundnuts, fishcakes/crabsticks, coconuts (including grated), keli, sea crabs, chieves, tumeric, white/black pepper, others (vermicelli, popia skin), pineapple, pari, bitter gourd, petai, local lettuce, siakap, salted eggs, tempe, dried prawns

Bundle 3 contains a mixture of different goods and services but Bundles 4 and 5 contain only food items. The mixture of items contained herein indicates that as households begin to have a little more income, they begin to spend money mostly on food. Some other goods and services that are observed to be bought here are plastic containers and local magazines or newspapers.

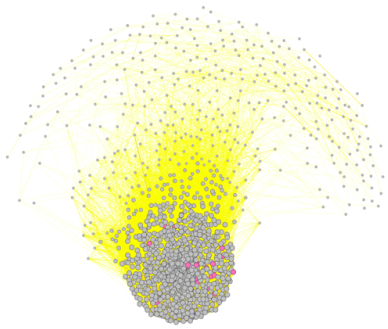
Group 3 (Bundles 6 to 10)

The first 3 bundles (Bundles 6, 7 and 8) of Group 3 represent different facets of revealed preferences in households. Bundle 6 contains goods and services that are associated with Chinese culture such as joss sticks, Chinese newspapers and cheongsam, amongst others.

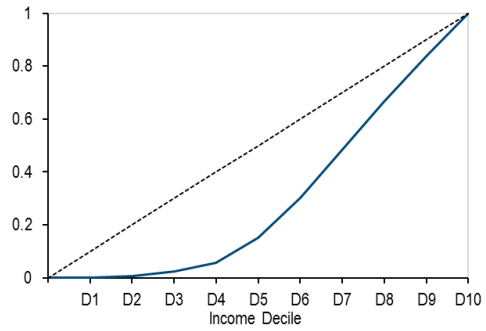
Bundle 7 contains mostly decorative items such as photo frames, decorative mirrors and jewellery, while Bundle 8 contains goods and services that are associated with leisure. These goods and services include cakes, potato chips, carwash, cinema tickets, soft drinks and pizza, amongst others.

Bundle 6

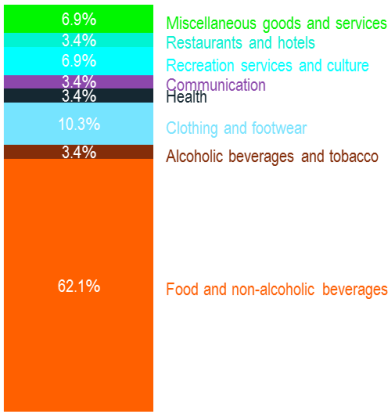
Location of bundle in the Expenditure Space



Cumulative frequency



Share of expenditure group in the bundle



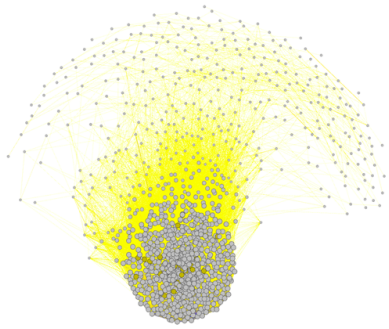
Example of goods and services in the bundle

Expenditure group	Examples
Miscellaneous goods and services	Service charges for life insurance, toilet paper
Recreation services and culture	Joss sticks, daily Chinese newspaper
Communication	Telephone call charges
Health	Pills/vitamin drops (including 'Royal Jelly' and 'B. Pollen')
Clothing and footwear	Cheongsam, frocks/maxi (ready made), skirts (ready made)
Alcoholic beverages and tobacco	Beer
Food and non-alcoholic beverages	Papaya, pear, pork/pork fat, cheese/cheese spread, other dairy products (skim milk, low-fat milk), Chinese radish, peanut butter, oats

Note: Goods and services listed as part of the bundles may not be exhaustive, but merely indicative of the type of goods and services which relate to one another.

Bundle 7

Location of bundle in the Expenditure Space

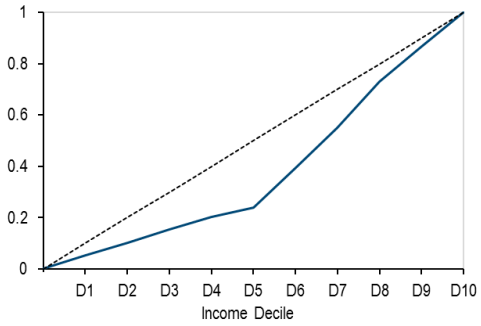


Location: **Core**

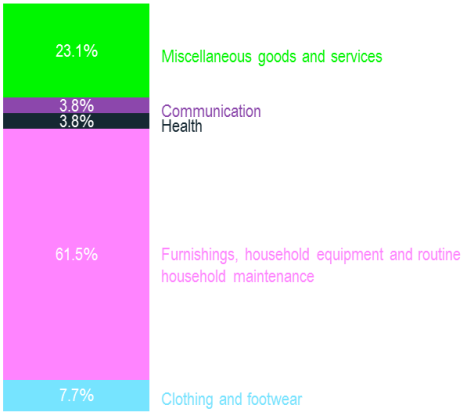
Total number of products: **26**

Average degree: **2.9**

Cumulative frequency



Share of expenditure group in the bundle



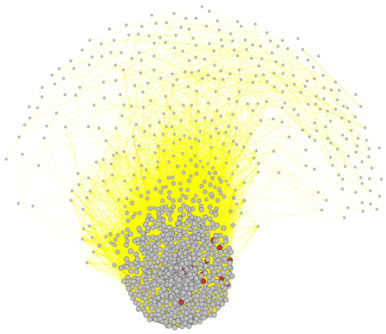
Example of goods and services in the bundle

Expenditure group	Examples
Miscellaneous goods and services	Jewellery of gold, wall-clock, wallet
Communication	Other accessories (pager, handphone casing)
Health	Spectacles
Furnishing, household equipment and routine household maintenance	Cupboards/cabinets, dry cells for cameras and wall clocks, photo frames, home decorative mirrors, portable fans, tables, doormats, electric rice cooker
Clothing and footwear	Repair of footwear, handkerchief

Note: Goods and services listed as part of the bundles may not be exhaustive, but merely indicative of the type of goods and services which relate to one another.

Bundle 8

Location of bundle in the Expenditure Space

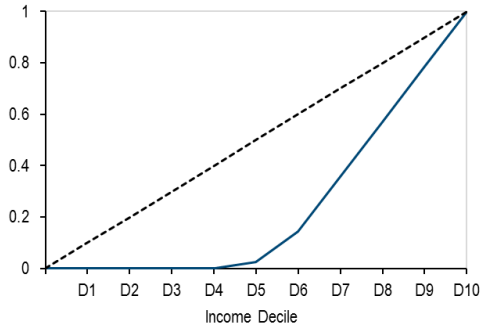


Location: **Core**

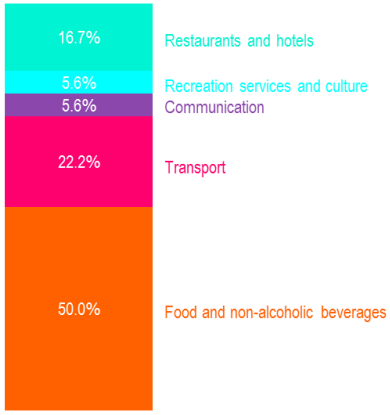
Total number of products: **18**

Average degree: **3.4**

Cumulative frequency



Share of expenditure group in the bundle



Example of goods and services in the bundle

Expenditure group	Examples
Restaurants and hotels	Ice/warm water, soft-drinks, pizza (including set)
Recreation services and culture	Cinema tickets
Communication	Handphone call charges
Transport	Parking fees, road tolls, payments for motoring services (excluding road tax, driving license, fines), carwash/polishing
Food and non-alcoholic beverages	Yoghurt, jam, fruit juice (in packs), cakes, western cakes, butter, fresh milk, reconstituted milk, other tubers & products (potato chips)

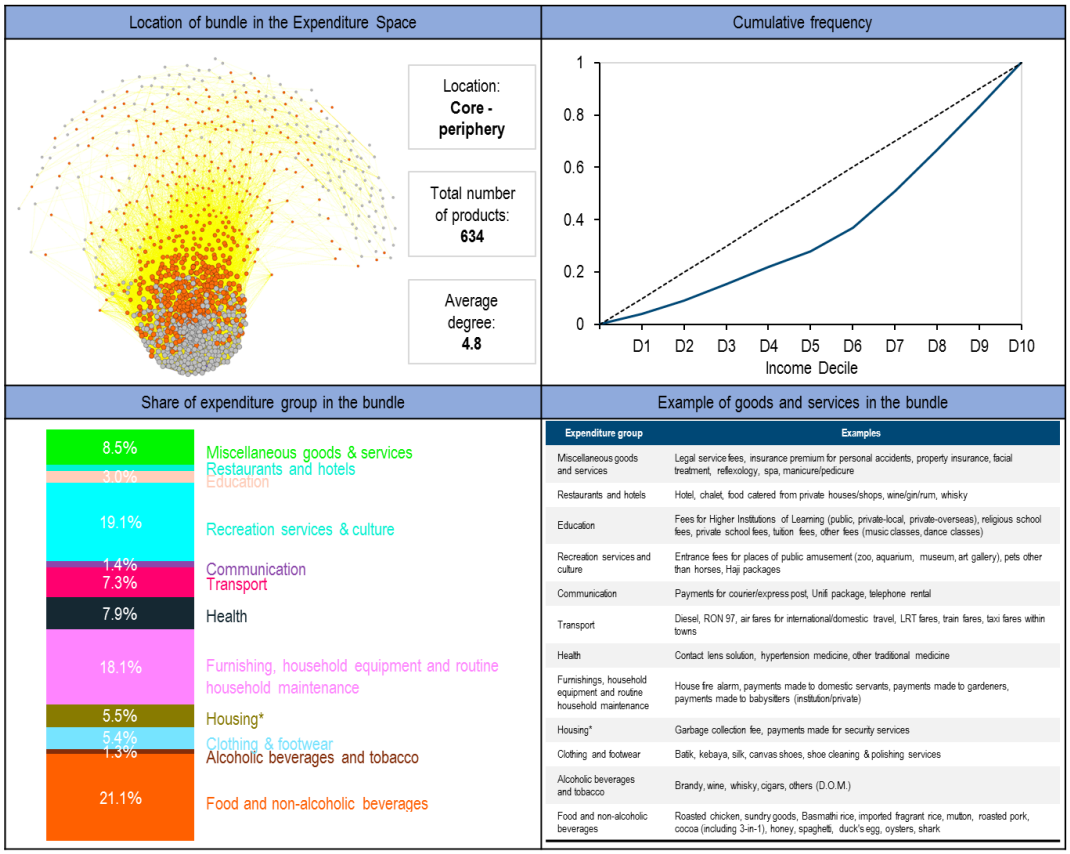
Note: Goods and services listed as part of the bundles may not be exhaustive, but merely indicative of the type of goods and services which relate to one another.

The remaining two bundles (Bundles 9 and Bundle 10) in Group 3 are crucial to the later analysis of demarcating Malaysian households. Unlike the other bundles, Bundle 9 contains 634 products, roughly half of the total number of products contained in the network.

Bundle 9 is situated both in the core and periphery of the network. This indicates that the items contained in bundle 9 represent both necessities and more aspirational products. The items contained in bundle 9 are concentrated in the *Food and Non-Alcoholic Beverages*; *Furnishing, Household Equipment and Routine Household Maintenance* as well as the *Recreational Services and Culture* categories.

On the other hand, Bundle 10 contains goods and services that are situated only in the peripheral region of the network. It contains mostly goods and services that are categorised under *Recreational Services and Culture*.

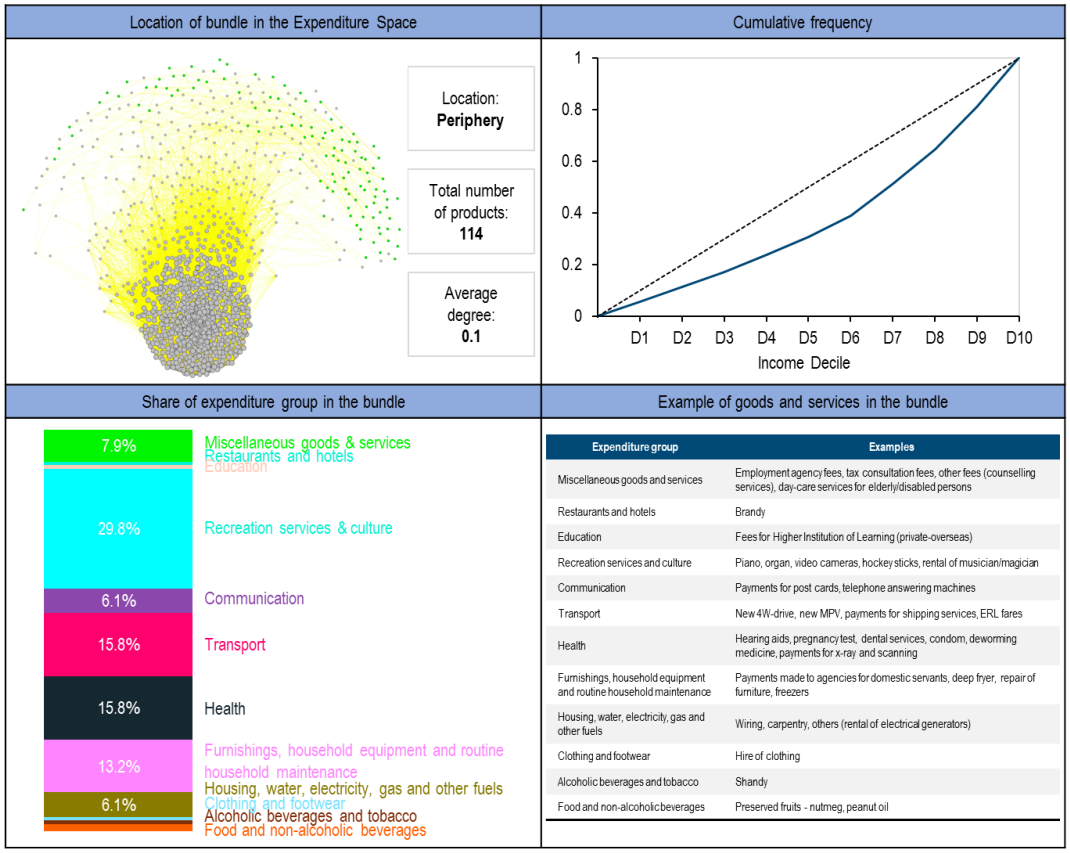
Bundle 9



Expenditure group	Examples
Miscellaneous goods and services	Legal service fees, insurance premium for personal accidents, property insurance, facial treatment, reflexology, spa, manicure/pedicure
Restaurants and hotels	Hotel, chalet, food catered from private houses/shops, wine/gin/rum, whisky
Education	Fees for Higher Institutions of Learning (public, private-local, private-overseas), religious school fees, private school fees, tuition fees, other fees (music classes, dance classes)
Recreation services and culture	Entrance fees for places of public amusement (zoo, aquarium, museum, art gallery), pets other than horses, Haji packages
Communication	Payments for courier/express post, Unifi package, telephone rental
Transport	Diesel, RON 97, air fares for international/domestic travel, LRT fares, train fares, taxi fares within towns
Health	Contact lens solution, hypertension medicine, other traditional medicine
Furnishings, household equipment and routine household maintenance	House fire alarm, payments made to domestic servants, payments made to gardeners, payments made to babysitters (institution/private)
Housing*	Garbage collection fee, payments made for security services
Clothing and footwear	Batik, kebaya, silk, canvas shoes, shoe cleaning & polishing services
Alcoholic beverages and tobacco	Brandy, wine, whisky, cigars, others (D.O.M.)
Food and non-alcoholic beverages	Roasted chicken, sundry goods, Basmathi rice, imported fragrant rice, mutton, roasted pork, cocoa (including 3-in-1), honey, spaghetti, duck's egg, oysters, shark

Note:
1. *Housing, water, electricity, gas and other fuels.
2. Goods and services listed as part of the bundles may not be exhaustive, but merely indicative of the type of goods and services which relate to one another.

Bundle 10



Expenditure group	Examples
Miscellaneous goods and services	Employment agency fees, tax consultation fees, other fees (counselling services), day-care services for elderly/disabled persons
Restaurants and hotels	Brandy
Education	Fees for Higher Institution of Learning (private-overseas)
Recreation services and culture	Piano, organ, video cameras, hockey sticks, rental of musician/magician
Communication	Payments for post cards, telephone answering machines
Transport	New 4W-drive, new MPV, payments for shipping services, ERL fares
Health	Hearing aids, pregnancy test, dental services, condom, deworming medicine, payments for x-ray and scanning
Furnishings, household equipment and routine household maintenance	Payments made to agencies for domestic servants, deep fryer, repair of furniture, freezers
Housing, water, electricity, gas and other fuels	Wiring, carpentry, others (rental of electrical generators)
Clothing and footwear	Hire of clothing
Alcoholic beverages and tobacco	Shandy
Food and non-alcoholic beverages	Preserved fruits - nutmeg, peanut oil

Note: Goods and services listed as part of the bundles are not exhaustive, but indicative of the type of goods and services which relate to one another.

On *Food and Non-Alcoholic Beverages*, some goods and services include roasted chicken, bacon and ham, imported fragrant rice, honey and shark. For *Alcoholic Beverages and Tobacco*, some items include wine, whisky and cigars. These items tend to represent more expensive, higher quality food and beverages often associated with the lifestyle of the rich.

On *Housing, Water, Electricity, Gas and Other Fuels*, some items include water heater, fire alarms, payments made to domestic workers, gardeners, babysitters, air conditioners, vacuum cleaners and lawnmowers. On *Recreational Services and Culture*, some items include exercising equipment, entrance fees for places of public amusement, pets, artificial flowers, personal computers, hajj packages, vacation packages, piano, organs and PlayStations.

On *Education*, some items include fees for higher institutions of learning, private school fees or other fees (such as music classes and dance classes).

On *Miscellaneous Goods and Services*, some items include accessories such as jewellery, brokerage charges, fees for the adoption of children, insurance premiums, facial treatment, reflexology, tax consultation fees and day-care services for the elderly and disabled.

When jointly examined, the categorisation of bundles reflects revealed preferences that manifest themselves in the way different lifestyles and well-being levels intersect in the Expenditure Space.

Goods and services in Bundles 9 and 10 seem to correspond to known traits of the aspirational group[127], a group in society which, amongst other things, is able to insulate itself from adverse events, invest in its own upward social mobility or signal "aspirational traits" in its choice of expenditure. As such, Bundles 9 and 10 can be used as indicators to demarcate the "non-aspirational/have-nots" and the "aspirational/haves".

5.4 Discussion

Household spending tends to follow certain patterns[128]. These are:

1. At low income levels, spending diversity is low as food expenditure dominates spending.
2. As household income grows, spending diversity increases via a reduction in the budget share for food, and an increase in non-food expenditure.
3. Individual household spending becomes more diversified as income rises.

The Expenditure Space provides insights into the analysis by describing the extent of diversity in goods and services consumed. A household's capacity to afford diverse and ubiquitous/exclusive goods and services are expressed as a function of its well-being (limited by actual income and the availability of goods and services). In this sense, our analysis looks at the diversity of products and develops a criterion on the spectrum of items consumed for basic needs and towards a higher well-being based on households' revealed preferences.

Most studies utilise pre-determined signal items[129] to represent and analyse distinct consumption patterns. Conversely, our method takes into account all consumption items and is able to generate different signal items, locating them geographically and intertemporally, reflecting different sets of preferences bounded by location (the operating environment) and the time period (the method is quick to capture "trendy" signal items within a given time frame).

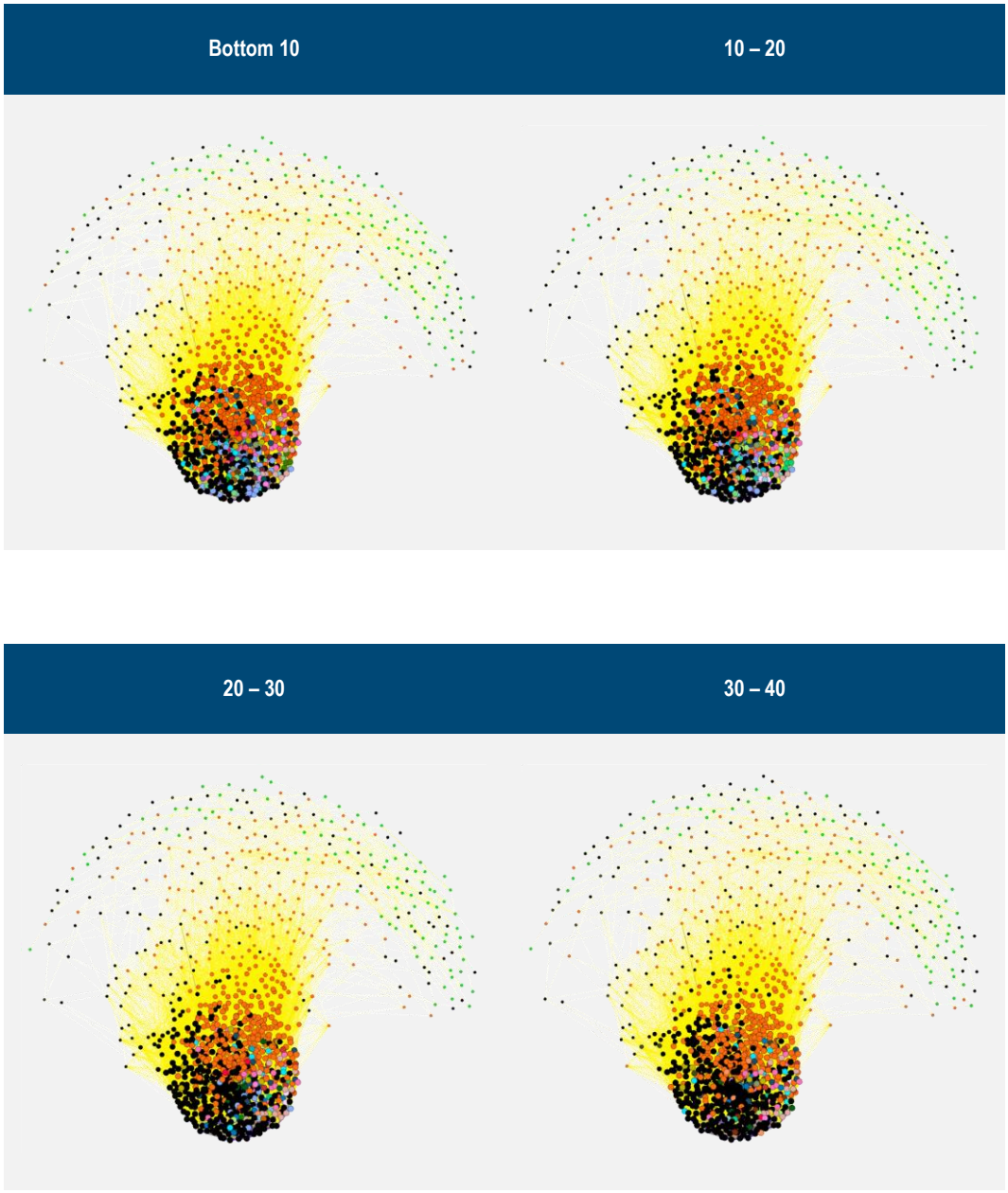
The Expenditure Space describes and captures the phenomenon of path dependency of items consumed (i.e. items that are co-consumed as incomes increase) and the evolution of trade-offs between items (i.e. items that are consumed less as consumption of other items increases) concurrently. These dynamics of consumption cannot be captured through linear relationships or via Engel curves.

In addition, the Expenditure Space can be used to measure the gap between actual consumption patterns and predetermined poverty line estimates. It can detect trade-offs made by households and spur more research on understanding consumption patterns within the wide spectrum of poorer to more aspirational groups. Figure 5.4 below describes how the diversity of household consumption evolves with income. Each box represents the goods and services that are consumed

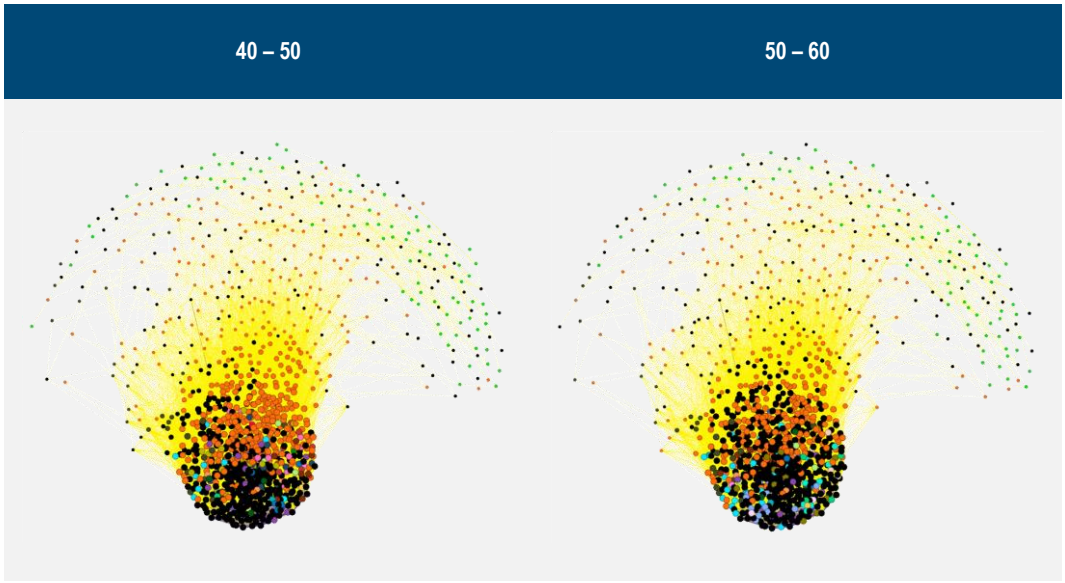
[127] A more in-depth discussion is undertaken in the following chapter.
[128] Chai et al. (2015)
[129] As defined by Currid-Halkett (2017), signal items are those consumed to signify as belonging to a higher-ranked group (or class), or for upward social mobility

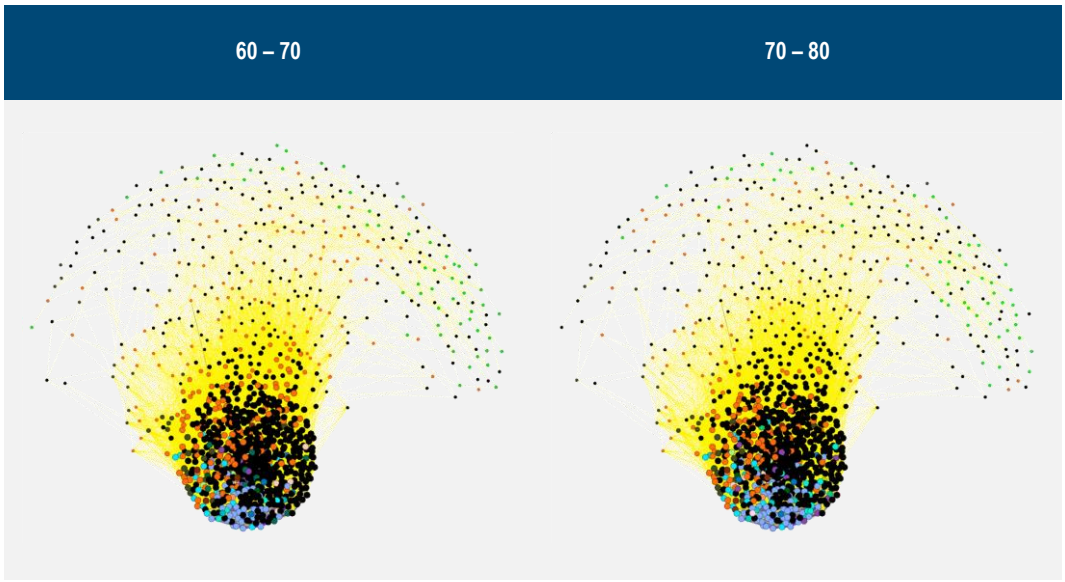
in greater proportion to the population average (these goods and services are depicted by black-coloured nodes). As with the income method, we have analysed which goods and services are consumed by households in each income decile[130] to better understand consumption dynamics.

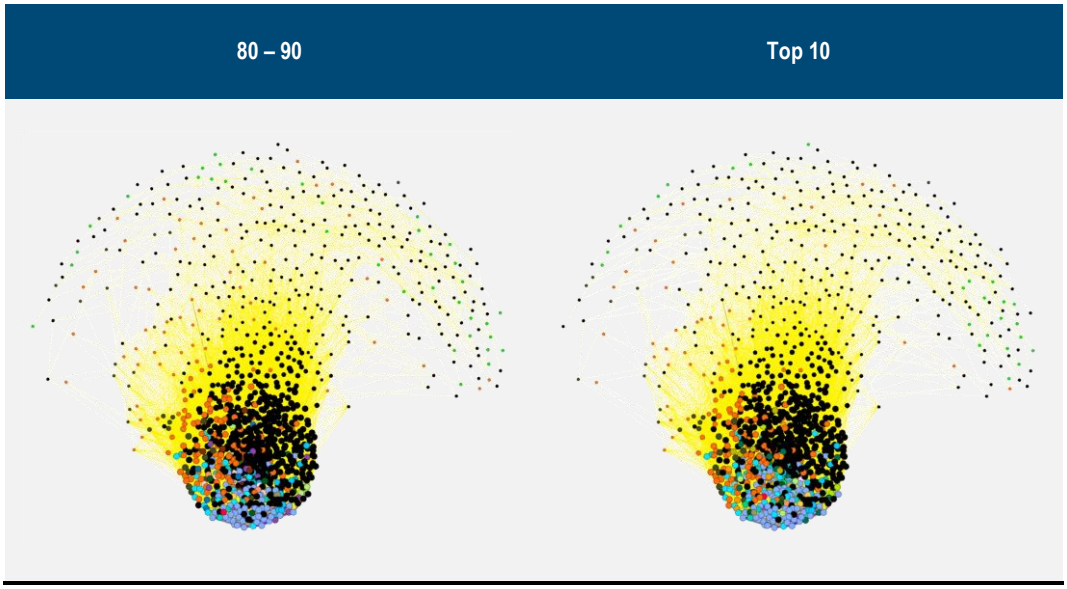
Figure 5.4 : Dynamics of household expenditure by equivalised income



[130] Ho and Ismail (2019)


40 – 50
50 – 60


60 – 70
70 – 80



First, it is observed that the proportion of black-coloured nodes increases as we move from bottom 10% to top 10% of income bracket. This is in line with the empirical observation that as income rises, spending diversity increases. Second, it is observed that households at lower deciles mostly consume food items and other goods and services situated at the core (necessities), as represented by the position of these black-coloured nodes in the Expenditure Space, while households with a higher income level tend to have diversified their expenditure to consume a variety of goods and services, including those at the periphery.

As discussed earlier, households tend to be constrained by a consumption pattern that fulfils basic necessities first, before consuming a more "comprehensive" distribution of goods and services which signals a more "comfortable" lifestyle The Expenditure Space provides evidence that, at decile 7 or 8, households are able to begin consuming both goods and services at the core and most items in the periphery. These households, arguably, are better off than households below this demarcation due to their capacity to consume more variety of goods within the Expenditure Space. The motivation for consuming more is not inhibited by income limitations. The motivation to consume more varied goods and services, on the other hand, needs explanation. This analysis raises an important question on the validity of the current household demarcations of B40, M40 and T20. These demarcations might not be accurate since the three demarcations do not reflect similar characteristics of consumption for each band. Consequently, we will attempt to apply these findings in generating a new demarcation of Malaysian households that is based on both household expenditure and equivalised income.

5.5 Chapter Conclusion

Economic well-being is not only limited to the amount of money one has, but also extends to what that money can buy. Household consumption patterns provide important insights on the level of households' material well-being. Analysis of the consumption patterns showed that households tend to be constrained by a "hierarchy of needs"—they fulfill their physical necessities first before consuming goods and services associated with a more comfortable lifestyle. Typically, expenditure on food and other basic necessities such as clothing and housing dominates the spending of low-income households. As household income increases, expenditure patterns become more diverse as indicated by a reduction in the budget share for food and an increase in non-food expenditures, signifying a change in the household's welfare level.

Households that were only able to fulfil their basic necessities tend to be concentrated approximately in the bottom 20% of the household population. These households spent most of their money on food, housing and clothing. On the other hand, households that were able to purchase a vast majority of items in the Expenditure Space were concentrated in the top 30% of the population. The consumption pattern of households between decile 3 and decile 7 (i.e. a total of 50% of the income distribution, starting at 30th percentile and ending at the 70th percentile) appears to be quite homogenous. These households demonstrated minor differences in consumption; for example, some households were able to eat out, and some started to send their children for tuition classes or were able to spend more on household furniture.

CHAPTER

06

CHAPTER 6
APPLICATION OF THE EXPENDITURE SPACE METHODOLOGY: IDENTIFYING THE NEW DEMARCATIONS

6.1 What Might Consumption Patterns Show?

"Consumption is relational rather than an individual preference (rational or not), part of a social positioning system that tells people where they stand"

- Frank Trentmann (2016)

Measurements of poverty

Poverty measures are important to policymakers as most countries adopt a rights-based approach to alleviating poverty. The determination of which households are in poverty is often based on patterns of consumption or income.

Two widely used measures are the Food Energy Intake (FEI) method and the Cost of Basic Needs (CBN) method. The former estimates the calorie intake per capita (food energy intake per household member) and then associates this variable with household income via statistical regression. However, the FEI method has many limitations. As the method is based on food intake, dimensions such as non-food substitutability or tastes and preferences may result in cases where the model identifies individuals who choose to purchase lower quantities of higher quality and more expensive calories as being poorer than individuals who choose higher quantities of lower quality and less expensive calories[131].

The CBN method first defines a reference utility level based on the consumption of a bundle of goods deemed sufficient to fulfill the basic needs of an individual. Then it proceeds to identify a monetary threshold that distinguishes between the poor and non-poor, based on the established reference utility level. In the CBN approach, an individual is poor if he/she lacks the income to purchase the bundle of goods. Ravallion and Sen (1996) have adopted the CBN method to identify the PLI in Bangladesh. The same approach was also adopted to construct Malaysia's 1977 and 2005 PLIs.

Arndt and Tarp (2015) remarked that, in practice, the bundle frequently contains only food as prices of non-food items vary drastically with quality and/or are represented by broad categories in household surveys. Regardless, some countries (including Malaysia) supplement the food poverty line with a non-food poverty line. The non-food poverty line is inferred from the average

[131] Ravallion and Lokshin (2003)

non-food expenditure of households near the poverty line. The rationale for this is the assumption that the consumption of non-food items displaces the consumption of food for poor families.

This signifies the importance of these non-food items, which are thus deemed basic needs. As with the FEI method, the CBN method also has its shortcomings. For instance, the use of a single consumption bundle may not reflect actual consumption behaviour in heterogeneous domains. A potential solution would be to estimate multiple consumption bundles as proposed by Tarp et al. (2002). Following this, a set of reference bundles must be defined to perform comparative analysis.

Measurements of well-being

Well-being is a crucial component in demarcating households as it symbolises significant lifestyle differences between them—households in a better well-being group should, in principle, have a higher score of well-being (better lifestyle) compared to households in a lower group.

Nevertheless, well-being continues to be an ambiguous concept with numerous interpretations. The term "well-being" is often interchangeably used with other related terms such as standard of living, quality of life, etc. In fact, these interpretations may not agree and be opposites of one another[132].

In addition to this difficulty of identifying well-being, the varied measurements of well-being compounds its ambiguity. Depending on the definition of well-being, measurements vary and may even be subjective rather than objective, for example, measurements of empowerment and happiness[133].

Two of the most common measures of well-being are:

1. Multidimensional composite indicators; and
2. Income or consumption levels.

[132] McGillivray and Clarke (2006)
[133] Ibid.

Multidimensional composite indicators

The argument for a multidimensional indicator of well-being stems from Sen (2001) normative framework to evaluate the quality of life[134]. This framework involves three main components:

1. Commodities;
2. Functionings; and
3. Capabilities.

Commodities are basically physical goods and services that are necessary to support life. Functionings reflect the various things that a person may value doing or being. These may include being adequately nourished, being free from avoidable diseases[135] and having attained some level of education. Capabilities reflect a person's individual freedom to lead the kind of life they value, referring to alternative combinations of functionings that are feasible for the individual to achieve.

Patterns of consumption: from Poverty to Aspirational Consumption

Many government policies have concentrated on the creation of a "middle class", which might be loosely interpreted as the creation of a strong group that exhibits aspirational consumption. Apart from being the entrepreneurial group that brings about innovation, the middle class also contributes by generating demand for aspirational goods and services such as education or other high value-added services. This group, in essence, is crucial to stimulate the demand for local consumption due to its stable economic standing. More than just accruing economic benefits, Aristotle describes his ideal state as comprising a large middle class whose role is to mediate between political extremes and to provide support for a more stable society[136].

The idea of "class" has several definitions[137]. The notion that a society can be classified into classes/tiers stems from the history of social thought, more specifically, European history, where questions of social hierarchy have been central to political history. For example, the distinction between the *bourgeoisie* and the *proletariat* indicated economic differences as well as social status. Historically, these social barriers were rigid and could not be transcended easily even if one possessed the financial means to do so. Class formation and the barriers between classes are far more complex than simply one's economic standing. These are the cultural and historical vocabularies which informs discussions about class structure in Western societies.

Currently, economists have utilised "class structure" as a means of demarcating between the least and most well-off members of society based on household incomes and assets. Therefore, this exercise reduces the description of households to, at best, a snapshot[138]. An example was illustrated by Heilbroner and Thurow (1998) for American households using assets. They divided the households into five equal groups (quintiles). The bottom 20% of households are termed as

[134] Hobijn and Franses (2001)
[135] Sen (2001)
[136] Jayadev et al. (2015)
[137] Himmelfarb (1986)
[138] Heilbroner and Thurow (1998)

the most socially and economically vulnerable in society. The next 40% would normally be the working class. This classification is not similar to being rooted in a social hierarchy as mentioned before. In this context, the working class is defined as households that possess assets that do not generate any returns. Invariably, the assets owned are modest; homes and cars equivalent to their "net value". These assets do not contribute towards generating more income or wealth.

The next 20% would be the middle class. The assets belonging to this class are able to generate incomes or returns. The idea of having money for leisure comes into play. The remaining top 20% is the "upper class". This is when households do not just generate wealth through their income but also from assets; for example, investments in stocks and real estate. It remains unclear whether we should be using class-structure to depict Malaysian households when historically it has no bearing on our society[139]. However, the classification as suggested by Heilbroner and Thurow may assist our understanding of households if data on assets/wealth are being made available. In the absence of data on assets/wealth, savings and household indebtedness, our findings are limited to analysis of income and expenditure data.

Chapter 2 highlights the shift in the government's policy direction from eradicating poverty towards a shared prosperity agenda along the lines of addressing inequality and raising the standard of living. This has extended the government's policy target group from those living below the poverty line to include a greater segment of the population, namely the B40 households[140]. This demarcation also resulted in two other groups of households, namely the middle 40% and the top 20%.

However, the determination of an acceptable level of well-being and its attendant measurements remains unclear. While Chapter 5 employs the principle of relatedness to measure household well-being, this chapter develops it further by applying the Expenditure Space as a means of demarcating Malaysian households.

[139] The used of the "middle-income class" category for Malaysian households in the later parts of the report; however, does not subscribe to the "middle class" terminology described above
[140] EPU (2010), EPU (2015)

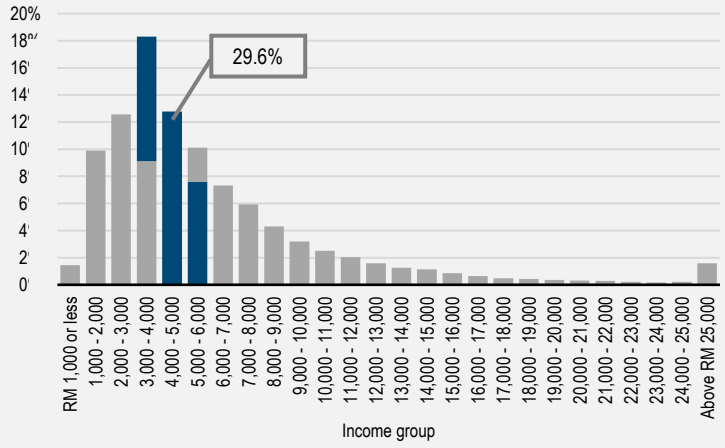
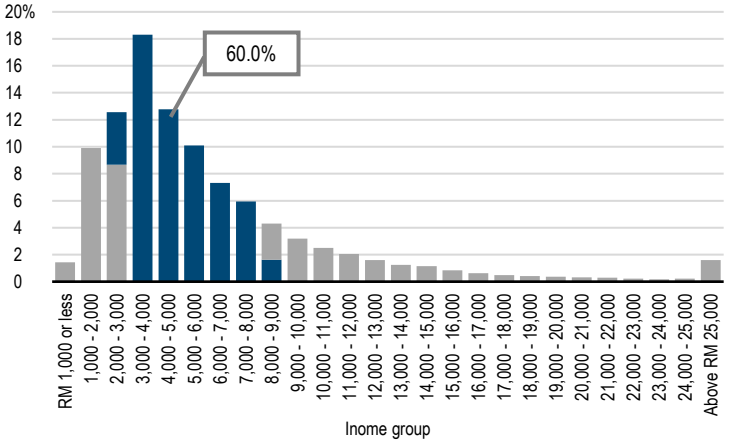
6.2 Brief Comparisons Between the Definitions of Middle Class or Middle Income

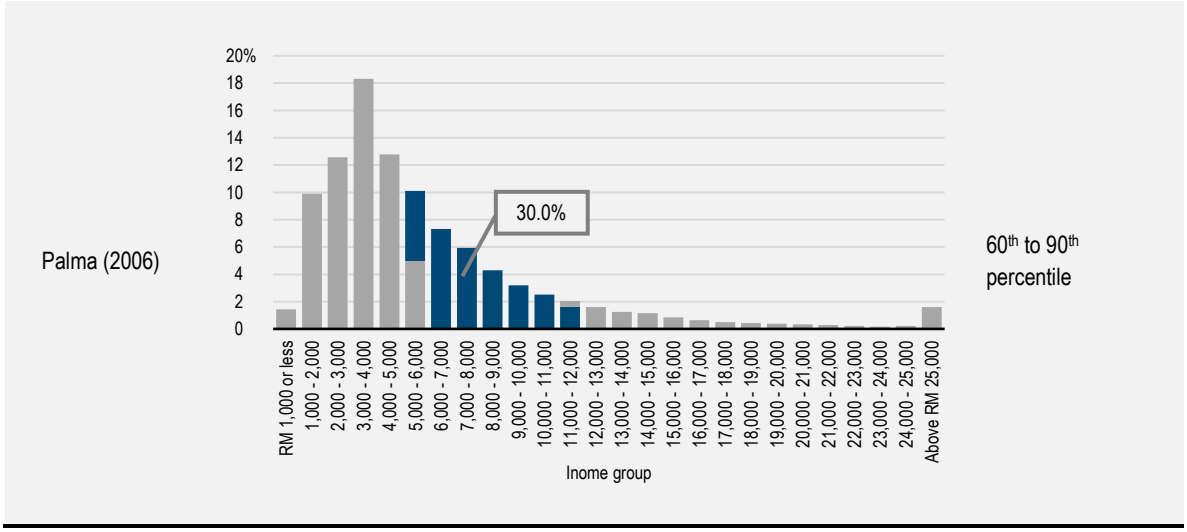
Relative Approach

The most direct class measures are relative—the middle class is simply the group in the middle of the income distribution. Therefore, the middle class in this middle-income distribution might not necessarily mean those who are economically strong and possess assets that will generate more income. It simply means the group in the middle of the income distribution. If, for example, a country is poor and the average household income is below the poverty line, then the middle-income group of that country is poor.

Figure 6.1 describes the distribution of Malaysian household incomes in 2014 based on the definitions proposed by Thurow (1987), Easterly (1999) and Palma (2006). Depending on which definition is employed, the middle class occupies very different segments of the income distribution, each of which has a different size.

Figure 6.1: Proportion of Malaysian middle class according to relative-based definitions

Author	Position of Middle Class in Income Distribution	Description
Thurow (1987)		75% to 125% of the median
Easterly (1999)		20th to 80th percentile



Absolute Approach

Another type of class measure is based on absolute measures. Absolute measures have a greater degree of theoretical underpinning, as they require standards of households' well-being to be pre-defined. For instance, Banerjee and Duflo (2008) consider the middle class as those who earn between USD2 and USD10 per day on the basis that they do not fall under the World Bank's PLI threshold while not being wealthy at the same time. Meanwhile, Kharas (2010) defines the developing world's middle class as those who earn between USD10 and USD100 per day at 2005 PPP.

It is evident that no matter which type of measure is employed, the resultant middle class occupies very different segments in the distribution of household incomes. However, regardless of the definition employed, the underlying principle that distinguishes the middle class from the poor is its capacity to lead a more comfortable life. For example, Banerjee and Duflo (2008) suggest that the middle class comprises those who are more likely to be in relatively secure, salaried jobs, being able to spend on education and health, amongst others.

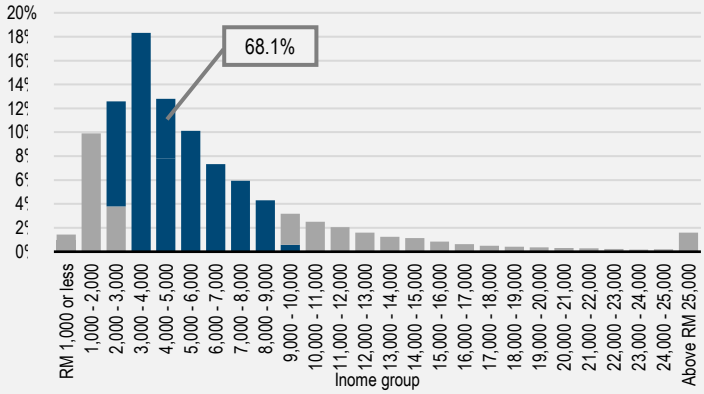
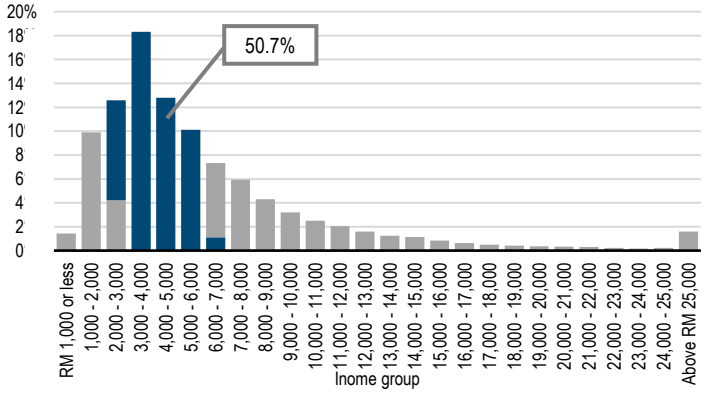
A potential reason for the multiple income-based definitions of the middle class is due to the need for policymakers worldwide to contextualise their policies against the operating environment of their own localities. However, this makes any meaningful inter-country comparisons difficult, as the same definition may not directly identify similar underlying traits of the middle class, due to contextual (historical and cultural) differences.

In Malaysia, the Mid-Term Review of the Eleventh Malaysian Plan (MTR-11MP) defines the middle class as those whose household incomes fall between half of median income (at the bottom end) and twice the median income (at the top end). Prior to this report, the RMK11 document defines the "aspirational class" as households earning incomes between 2.5 times the

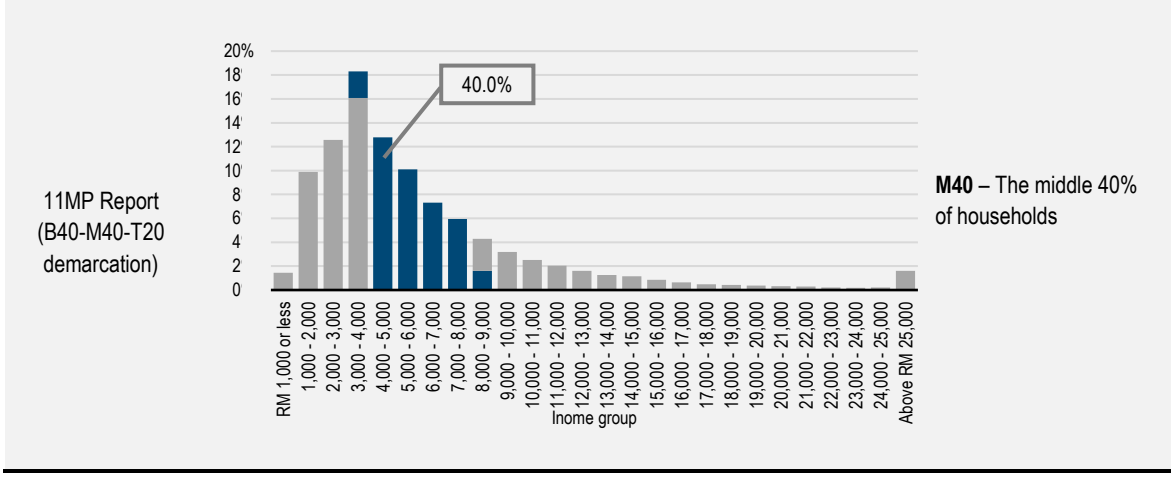
PLI and the national median income, while vulnerable households are defined as those earning incomes between the PLI and 2.5 times the national PLI[141].

The 11MP which was intended to chart Malaysia's growth trajectory from 2016-2020 has also placed a heavy emphasis on elevating the income and standard of living of the B40 group in order to enlarge the middle class society and reduce inequality. Figure 6.2 gives a comparison of the present demarcations that are commonly employed in most of Malaysia's social policies. The middle or aspirational class is highlighted in blue-coloured bars for ease of comparison.

Figure 6.2: The current demarcation of Malaysian households

Source	Position of Middle or Aspirational Class in Income Distribution	Description
MTR-11MP Report		**Middle Class** – between half of the median income (at the bottom end) and twice the median income (at the top end)
11MP Report		**Aspirational Class** – between 2.5 times the PLI and the median income

[141] The referenced PLI is the national PLI. By definition, every household would have a different PLI value depending on the household size, age of household members and location.



Source: EPU (2015), EPU (2018)

Nevertheless, what does it mean for a household to be vulnerable? And how are these households different from the middle class or aspirational class? The basis for demarcating these households according to these categorisations remains unclear.

A starting point in this exercise is to define the traits of households that are truly aspirational—households that exhibit certain characteristics not shared by others. For example, Jayadev et al. (2015) and Currid-Halkett (2017) termed the middle class an aspirational class, referring to those who are able to insulate themselves from adverse risk events, while possessing the human and social capital necessary to generate upward social mobility.

The next step would be to identify aspirational households' characteristics from their revealed preferences. These preferences are best reflected by the components of household expenditures.

Table 6.2 below gives a crude mapping of the potential goods and services which may signal these characteristics:

Table 6.1: Consumption characteristics of the aspirational class

Product Description	Aspirational Traits
Insurance premium on property, accidents, education	Capability to insulate themselves from adverse risk events
Hiring professional services - domestic servants, security services and other services	Capability to get other people to manage tasks, freeing up time for themselves to perform other functions
Conspicuous goods – vacation packages, paintings, artificial flowers, wine, whisky, reflexology and massages	Possessing the commodities that signal 'class' and give themselves a sense of exclusivity

Source: Adapted based on Jayadev et al. (2015) and Currid-Halkett (2017)

A similar approach which looks at aspirations is the living wage as defined by Bank Negara Malaysia (BNM). In Malaysia, BNM (2017) calculated the living wage as approximately RM2,700 per household. A living wage is defined as the income level needed for a household to afford a minimally acceptable living standard, which includes the ability to participate in society, the opportunity for personal and family development, and freedom from severe financial stress. BNM also argued that in demarcating households, it is useful to consider households having just basic necessities, households having a living wage, and higher-level aspirational households that are able to exercise their aspirations. BNM's definition is described in Figure 6.3 below:

Figure 6.3: Different concepts of living standard

Source: BNM (2017)

It is worth noting that the methodology employed in our study does not follow the living wage methodology. The living wage method is centred on defining the income level needed by households to afford a predefined standard of living, while this report seeks to investigate the income thresholds at which households begin to consume goods and services which signal these standards. The former looks at prices, while the latter as outlined in this chapter is focused on revealed preferences. However, the methods employed in this report can complement the living wage method by revealing consumption bundles associated with different living standards.

6.3 Demarcation Based on the Hierarchy of Needs

This section demonstrates the applicability of the Expenditure Space to generating various sets of demarcations based on different living standards[142]. The issue with using a single demarcation is that it is problematic to generate a one-size-fits-all policy with the expectation of success under heterogeneous environments.

The goods and services bought by various income groups were first identified by applying the results from both the community analysis (refer to Chapter 5, Section 5.3) and empirical diffusion (Chapter 5, Figure 5.4). Broadly, these follow the distribution as described in the bundles in Chapter 5, Section 5.3. For each item in each bundle, a boxplot describing 95% of the distribution of equivalised income was constructed.

Essentially, the boxplot in Figure 6.4 below represents the distribution of equivalised income for households that purchase said good and services. In terms of generating demarcations, these boxplots are useful for identifying the equivalised income ranges at which households purchase these goods and services.

Figure 6.4: Boxplot ranges

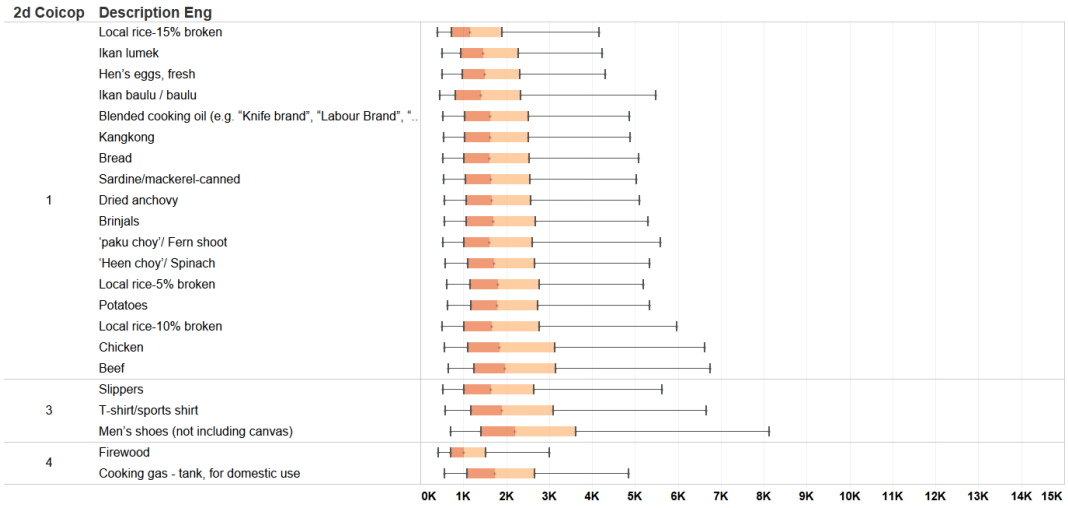
The following section presents some demarcations based on different household characteristics[143]:

1. Households that satisfy basic needs

First, we analyse the goods and services which are purchased only by households at the bottom of the distribution. These goods and services make up a significant part of expenditure among households belonging to lower deciles. Households that satisfy basic needs purchase basic necessities, mostly food items such as local rice (5 – 15% broken rice), chicken, beef, brinjals, fresh hen eggs and potatoes. Clothing or housing items include slippers, men's shoes (not including canvas), cooking gas tanks and firewood. These goods and services tend to be in Bundles 1 and 2. Figure 6.5 below illustrates the boxplots for this group.

[142] Ho and Ismail (2019)
[143] A detailed definition is outlined in Ho and Ismail (2019)

Figure 6.5: Households that satisfy basic needs

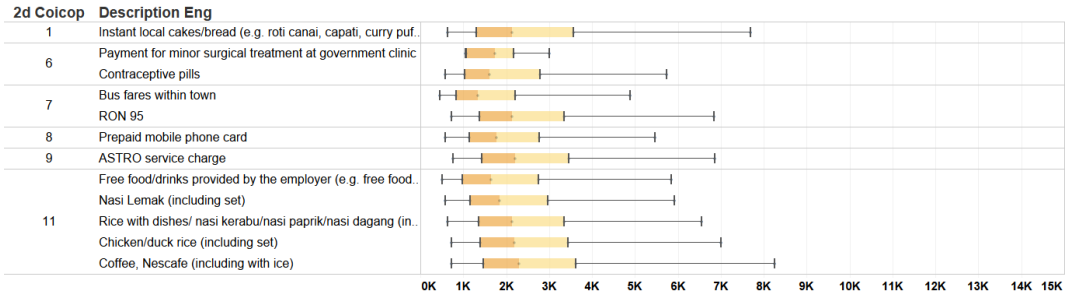


Taking the two quantiles around the median, it is observed that these items were purchased by households that earned an equivalised income between RM1,050 to RM2,638, with a median of RM1,665. Using the first and third quartiles as benchmarks, these items were purchased by households between the 18th percentile and the 66th percentile in the distribution, whose median corresponds to the 40th percentile.

2. Households that experience a spectrum of trade-offs/well-being (i)

Next, we analyse the goods and services purchased by households that have a little more money. These households purchase the same items as households that satisfy basic needs but are able to afford a little more. On top of the basic necessities, these households spent on items that expand their capabilities and functioning such as ASTRO service charges[144], prepaid mobile phone cards, bus fares, RON 95, deworming medicine and contraceptive pills. These households were also able to eat out—they purchased nasi lemak, nasi campur, nasi ayam and Nescafe[145], common foods available at local eateries. These goods also tend to be in Bundles 1 and 2. Figure 6.6 below gives the boxplots for this group.

Figure 6.6: Households that consume on a spectrum of trade-offs/ well-being (i)



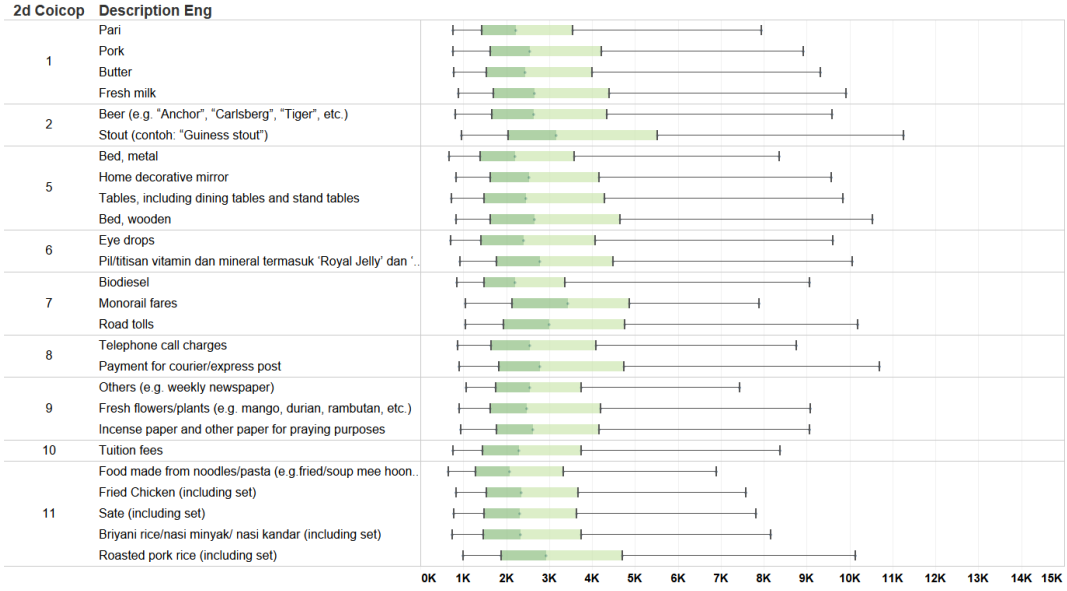
It is observed that these items were purchased by households that earn an equivalised income between RM1,196 to RM3,015, with a median of RM1,894. Using the first and third quartiles as benchmarks, these items were purchased by households between the 24th percentile and the 72nd percentile in the distribution, whose median corresponds with the 48th percentile.

[144] ASTRO is a Malaysian satellite television service provider.
[145] Nasi lemak, nasi campur, and nasi ayam are common Malaysian dishes, while Nescafe is a commonly-consumed brand of coffee.

3. Households that experienced a spectrum of trade-offs/well-being (ii)

Next, we examine items consumed by households that are neither in the basic needs category nor consuming aspirational goods[146]. In using the basic needs group as a shorthand for low-income households or households in relative poverty, it is useful to ask a follow up question—how different are the middle distribution households from the basic needs group? The goods and services contained in this section cover items purchased as households transcend the basic needs threshold. Food items include pork, beer, fresh milk and pari. Other food items eaten outside the home include nasi biryani, fried chicken and satay, while various housing and furniture items include beds, tables and cupboards. These households also tend to purchase local magazines and pay tuition fees. Figure 6.7 below gives the boxplots for this group.

Figure 6.7: Households that consume on a spectrum of trade-offs/well-being (ii)



It is observed that these items were purchased by households that earned an equivalised income between RM1,637 to RM4,155, with a median of RM2,566. Using the first and third quartiles as benchmarks, these items were purchased by households between the 40th percentile and the 85th percentile in the distribution, whose median corresponds with the 65th percentile.

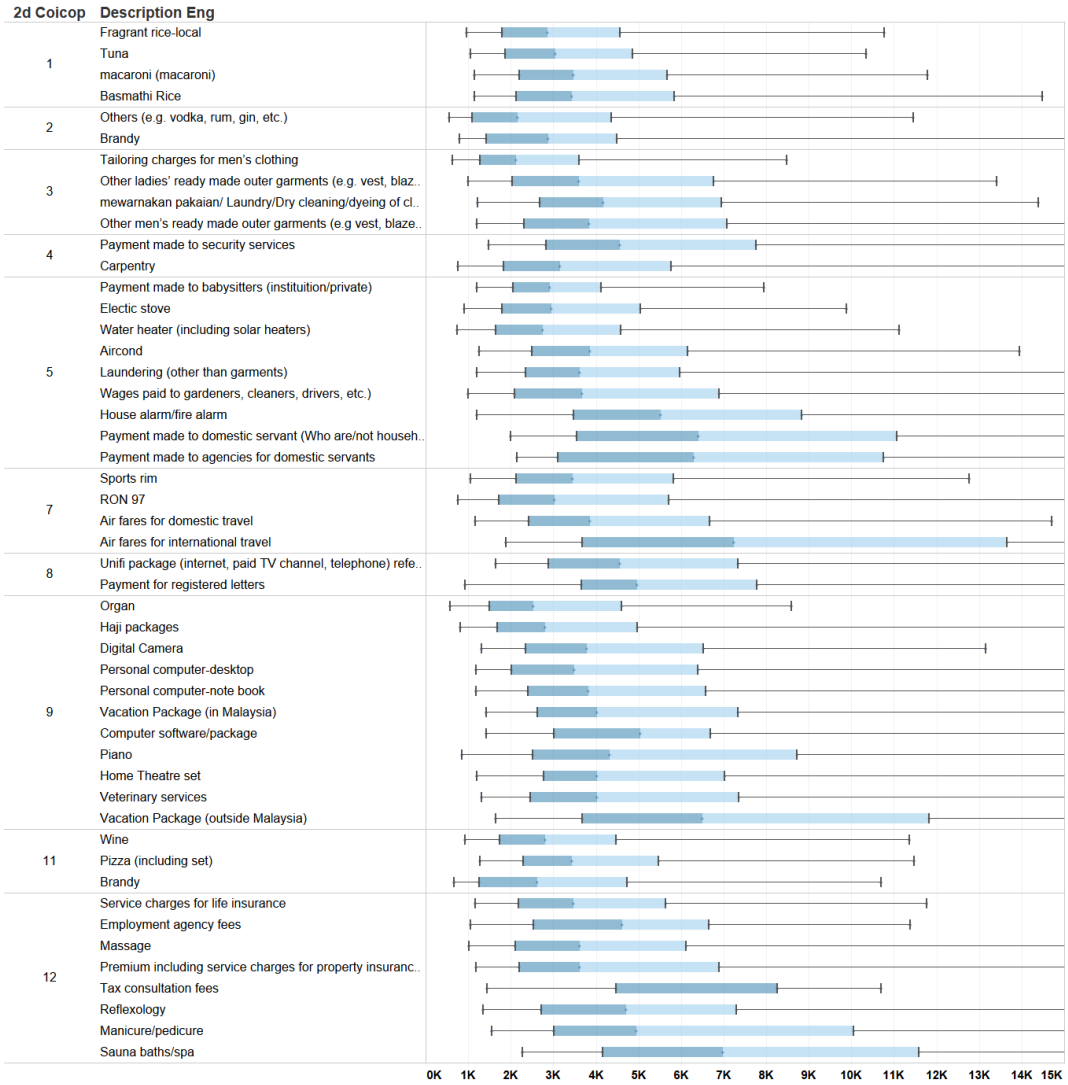
[146] This is in referenced to the earlier simplistic B40 demarcation that assumes B40 is the clear cut-off point for being "poor", not even vulnerable nor lower income. M40 here is also based on the misconception that the middle 40 of the income distribution has already attained "middle-income" or "aspirational" status.

4. Households that exhibit aspirational consumption

Finally, we examine items that were only purchased by households at the top of the distribution. These items reflect household aspirations as they indicate characteristics of the aspirational group—being able to insulate themselves from adverse risk events, being able to invest in their own upward social mobility, being able to hire someone else to do work so as to free their own time and being able to signal social standing through their spending.

Some items include payments made to gardeners, domestic workers, babysitters and security services, piano, organ, hajj packages, personal computers, software, veterinary services, Unifi package[147], reflexology, laundry services and premiums for property insurance. These goods and services tend to be in Bundles 9 and 10. Figure 6.8 below gives the boxplots for this group:

Figure 6.8: Aspirational Consumption



[147] A Unifi package refers to an Internet plan using fibre optics.

It is observed that these items were purchased by households that earned an equivalised income between RM2,399 to RM6,780 with a median of RM4,022. Using the first and third quartiles as benchmarks, these items were purchased by households between the 63rd percentile and the 95th percentile in the distribution, whose median corresponds with the 86th percentile. Table 6.2 summarises this analysis in terms of equivalised income.

Table 6.2: Summary of Expenditure Pattern

	1st quartile	Median	3rd quartile
Households that satisfy Basic Needs	1,050	1,665	2,638
Households on a spectrum of trade-offs/ well -being (i)	1,196	1,894	3,015
Households on a spectrum of trade-offs/ well-being (ii)	1,637	2,566	4,155
Households that exhibit Aspirational Consumption	2,399	4,022	6,780

Source: Authors' calculations based on HIES 2014

6.4 Discussion: Key Findings

The Expenditure Space is a useful visualisation tool which allows a better understanding of the dynamics of Malaysian household consumption. This section highlights some key findings from Chapter 5 and Chapter 6.

1. What do the bottom 20% (Households that satisfy basic needs, decile 1 and 2) of the income distribution households consume?

Households in this group mostly consume food and basic necessities. Even with subsequent increases in income, this group does not seem to diversify their expenditure to goods and services other than those that satisfy their physiological needs.

2. Is the consumption pattern for bottom 20% households any different from the middle group of the income distribution?

We defined a consumption spectrum that ranges from a) households that satisfy basic needs, (b) households that are on a spectrum of trade-offs/well-being to (c) households that exhibit aspirational consumption. The consumption patterns of households in deciles 3, 4, 5 and 6 were remarkably similar to B20 households that satisfy basic needs. Depending on their position on the spectrum, these households in the middle of the income distribution still practised trade-offs in their consumption expenditure in order to enjoy a higher standard of living.

However, at some point between the 63rd and 86th percentiles, Malaysian households were able to afford most of the goods and services contained in the peripheral regions of the Expenditure Space, particularly those in Bundles 9 and 10. This is the point when they do not have to perform any trade-offs in their consumption expenditure to enjoy a higher standard of living. They can consume all the items in the Expenditure Space with ease.

3. Who exhibits aspirational consumption in Malaysia?

The definitions contained within the RMK11 demarcate the aspirational class as those earning between 2.5 times the PLI and median household income but do not provide a description of whom or what this categorisation represents.

However, we adopt a definition of the aspirational class that is based on Jayadev et al. (2015) and Currid-Halkett (2017) as those who are able to insulate themselves from adverse risk events while possessing the human and social capital necessary to generate upward social mobility. We believe these descriptions are in line with the living wage as described in BNM (2017).

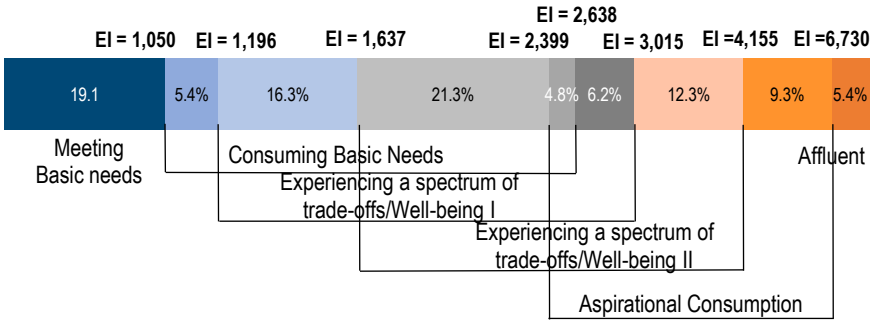
Further, in the spirit of the arguments put forth by Maslow (1943), Sen (2001) and Beinhocker (2006), there is evidence, based on consumption behaviour, to suggest that the aspirational group comprises households starting somewhere between the 63rd and 86th percentile and moving upward.

4. How should Malaysian households be demarcated?

The MTR-11MP defines the middle class as those whose household incomes fall between half of median income (at the bottom end) and twice the median income (at the top end). At the same time, the document defines the "aspirational class" as households earning income between 2.5 times the PLI and the national median income, while vulnerable households are defined by those earning between the PLI and those having 2.5 times the PLI (see Figure 6.2).

By drilling down into selected goods and services as informed by the community analysis and empirical diffusion that comes with the Expenditure Space, Figure 6.9 below was generated to relate product hierarchy to the various levels of equivalised income. The horizontal stacked bar chart provides the distribution of households by equivalised income. The figure depicts the various demarcations based on the different pre-defined standards of living.

Figure 6.9: Overlaps in expenditure component groups by equivalised income, 2014



Source: Authors' calculations based on HIES 2014
EI = Equivalised income

We defined a consumption spectrum that ranges from a) households that satisfy basic needs, (b) households that are on a spectrum of trade-offs/ well-being to (c) households that exhibit aspirational consumption. It is observed that on the spectrum of well-being categories, there are many regions in the distribution which experience an intersection of categories. For example, 21.3% of households earning equivalised income between RM1,637 and RM2,399 are households that purchase products similar to a) households that satisfy basic needs and (b) households that are on a spectrum of trade-offs/ well-being. This indicates that households falling within that region have expenditure baskets made from products from these two categories. But the higher their income, the greater their spending diversity on more aspirational goods.

Figure 6.9 depicts the various income ranges at which the various product hierarchies were purchased by households. It suggests that deciles 5 and 6 of the income distribution may not be very different than deciles 3 and 4, i.e. the higher end of the bottom 40% of the income distribution, since they were purchasing similar products like nasi biryani or fried chicken.

Table 6.3 summarises the different demarcation by equivalised income for households with selected sizes and compositions.

Table 6.3: Proposed demarcation by household size, 2014

		1st quartile	Median	3rd quartile
Reference household *(Equivalised income)*	Basic Needs	1,050	1,665	2,638
	Households on a spectrum of trade-offs/ Well-being (i)	1,196	1,894	3,015
	Households on a spectrum of trade-offs/ Well-being (ii)	1,637	2,566	4,155
	Aspirational Consumption	2,399	4,022	6,780
2-adult household *(Gross income)*	Basic Needs	1,690	2,680	4,248
	Households on a spectrum of trade-offs/ Well-being (i)	1,926	3,050	4,854
	Households on a spectrum of trade-offs/ Well-being (ii)	2,636	4,131	6,689
	Aspirational Consumption	3,863	6,475	10,915
2-adult 2-children household *(Gross income)*	Basic Needs	2,761	4,378	6,938
	Households on a spectrum of trade-offs/ Well-being (i)	3,147	4,982	7,928
	Households on a spectrum of trade-offs/ Well-being (ii)	4,306	6,747	10,927
	Aspirational Consumption	6,309	10,577	17,830

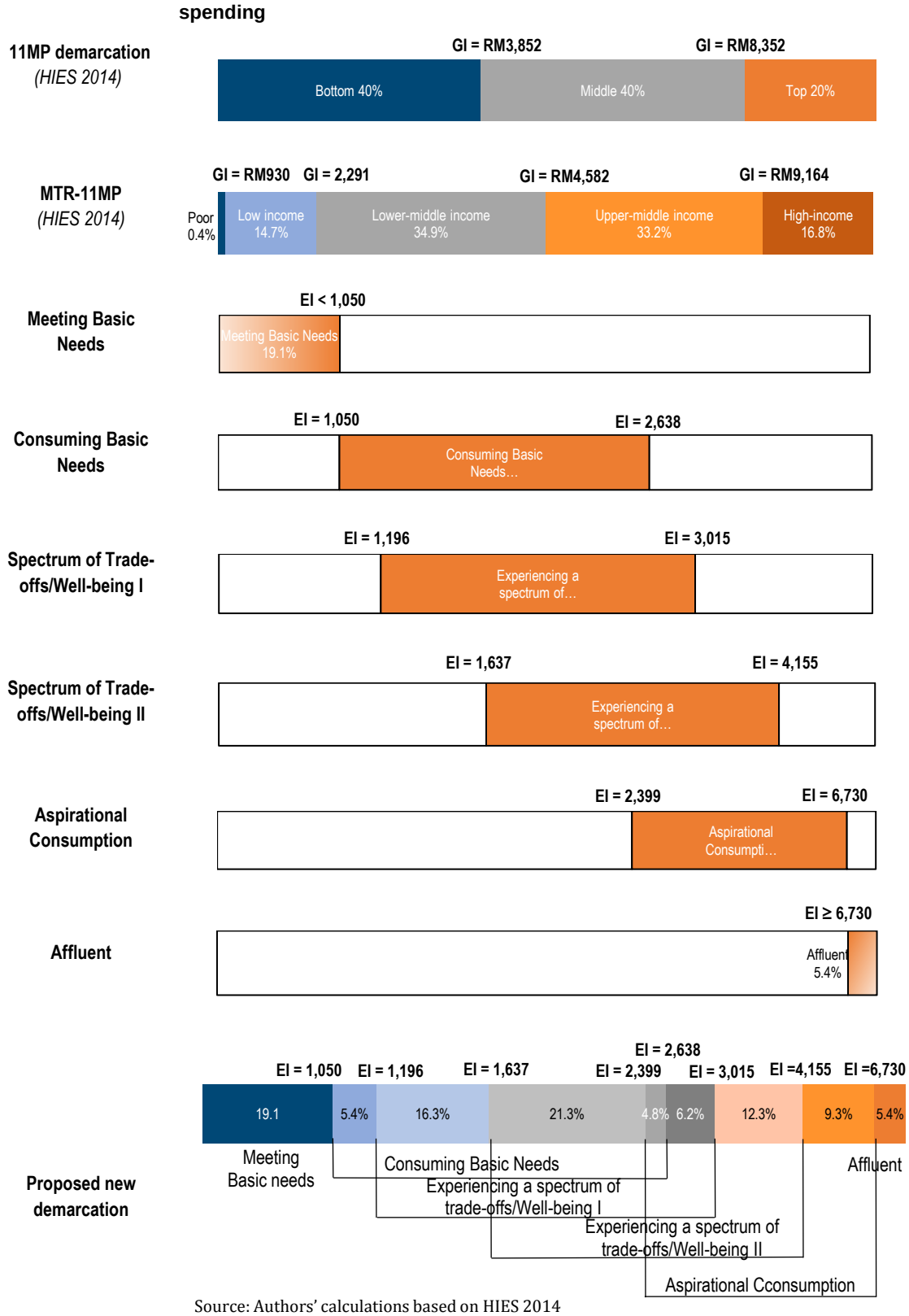
Source: Authors' calculations based on HIES 2014

The analysis suggests that some possible demarcations to identify the middle- or aspirational-income group should be approximated between an equivalised income of RM 2,399 and RM 4,155. One approach could be to use the quartile ranges to demarcate different intensities of the aspirational income group. For example, the quartile ranges obtained from these three sets of categories suggests that RM2,399, RM 2,638, RM3,015, and RM4,155 are possible demarcations for the aspirational income group.

Starting from household incomes of RM2,399, products belonging to the aspirational income group begin to feature as part of the household expenditure budget. At this point, all four sets intersect meaning that products from all sets of categories make up a significant portion of the average household budget. At RM2,588, basic needs no longer form a significant portion of the budget.

Finally, to compare our proposed demarcation to those coined in the 11MP and MTR-11MP, Figure 6.10 below depicts the same results from Figure 6.9 above overlaid with the 11MP B40 demarcation and the MTR-11MP demarcation.

Figure 6.10: Proposed demarcation alongside current demarcation, 2014



Source: Authors' calculations based on HIES 2014
GI – Gross inocme
EI = Equivalised incomepoint.

Our results align with the MTR-11MP when it comes to identifying low income households as those constituting the bottom 19.1% of the population.

However, we propose improvements to the MTR-11MP definition of the middle class falling between half the median and twice the median income. Our results suggest that most of the lower-middle class as defined in the MTR-11MP are households that spend mostly on "basic needs" yet are still vulnerable. Furthermore, a significant portion of the upper-middle class as defined in the document are really households that were somewhat able to pay for items like fried chicken, satay, household furniture and tuition fees.

Our results suggest that the aspirational consumption only begins to feature after an equivalised income of RM2,399.

6.5 Caveats and Limitations

The study in this chapter has a few limitations:

1. The model is based on one year's dataset, making this analysis, at best, a snapshot of the distribution of households in 2014. HIES 2014 was selected as a test-bed for this methodology since it is the first survey conducted by DOS that collected both income and expenditure items from the same households.
2. The unit of analysis for this model is the household and its associated metadata. Behavioural and qualitative studies to complement the findings were not used due to their non-existence.
3. The expenditure dataset is constructed based on household expenditure over a given month whilst also accounting for the purchase of long term or semi-long-term durables taking place within one year of the survey period. Hence, the dataset may exclude goods and services that households had already owned prior to the data gathering process.
4. The expenditure dataset does not include the amount of savings, wealth or debt a household might have. These variables, though unknown, have the potential to affect household expenditure in different ways.
5. The analysis does not include group 13 of the COICOP due to privacy concerns. Items in group 13 include remittances and transfers.

6.6 Chapter Conclusion

Economic well-being is not only limited to the amount of money one has but also extends to what that money can buy. Household consumption patterns provide important insights on the level of households' material well-being. Analysis of the consumption patterns showed that households tend to be constrained by a "hierarchy of needs"—they fulfilled their physical necessities first before going after goods and services of a more comfortable lifestyle.

Typically, expenditure on food and other basic necessities such as clothing and housing dominates the spending of low-income households. As household income increased, expenditure patterns became more diverse as indicated by a reduction in the budget share for food and an increase in non-food expenditures, signifying a change in the household's welfare level.

Households that were only able to fulfil their basic necessities, tend to be concentrated approximately in deciles 1 and 2 (or B20 based on equivalised income distribution). These households spent most of their money on food, housing and clothing. Households that exhibited aspirational consumption were concentrated in deciles 8 to 10 (or T30 based on equivalised income distribution). Aspirational households refer to households that were able to consume everything in the expenditure space, thus endowing themselves with the ability to maintain their status or invest further for their own upward mobility and protect themselves from risky scenarios.

The consumption pattern of those between income deciles 3 and 7 (or M50 based on equivalised income distribution) appeared to be quite similar. Depending on their position on the spectrum, these households still experienced trade-offs in their consumption expenditure in order to enjoy a higher standard of living. These households demonstrated minor differences in consumption; for example, some households were able to eat out and some started to send their children for tuition classes or were able to spend more on household furniture.

CHAPTER

07

CHAPTER 7
CONCLUSION

7.1 From Research to Policy

The improvements in the state of Malaysian households over the decades have been intrinsically linked to the economic development and transformation of the nation. Furthermore, the government has been committed in distributional initiatives throughout the years. This study examined approaches in public policies in addressing the households' needs, especially those with limited economic resources. It also discussed the welfare policies that have evolved from focusing on the households in absolute poverty to the poorest 40% of households. We posed some questions on the demarcations used for welfare distribution:

1. Is the present B40, M40 and T20 demarcation useful in classifying households according to their economic well-being?
2. Are the "B40" households homogeneous? Is it justifiable to equate the B40 as being "poor" and consequently, as target groups for government policies and assistance?
3. Do the "M40" households demonstrate characteristics of a "middle-income status" group; are they the aspirational/"middle-income class" group?

The analytical framework of this study is anchored on an integrated analysis of household income and consumption—two measures acknowledged in the literature as good approximations (proxies) in capturing the state of households' material well-being and in comparing the distribution of living standards across households.

Most analyses in this report have utilised the microdata from Household Income & Basic Amenities Survey (HIS/BA) and Household Expenditure Survey (HES) for the year 2014. These two surveys conducted in 2014 represent the first attempt by DOS to collect income and consumption data simultaneously from the same household, allowing for integrated analyses on both dimensions for each household. While a more current HIES dataset is available (for year 2016), it is believed that the use of 2014 dataset is still useful as a starting point, while the findings can continue to be relevant in highlighting the broader picture of the state of households.

This concluding chapter summarises the key findings of the study and discusses how the results could contribute to inform policymaking.

7.2 Evolution of Malaysia's Welfare Policies: From Poverty to B40

Government policies generally prioritised meeting the basic needs of all its population during the early stages of the development in a country. Malaysia was no exception with its public policies being geared towards eliminating poverty and social inequities since its independence in 1957. The two-pronged objective of the 1971 New Economic Policy aimed to eradicate poverty irrespective of race whilst eliminating the identification of economic function with race.

Since then, Malaysia has made significant progress in reducing poverty with the absolute poverty level falling to 0.4% in 2016 from approximately 50% in 1970. Despite the large reduction in the number of the poor, Malaysia experienced a worsening income inequality signalled by an increase in the Gini coefficient to 0.462 in 2004 compared to 0.442 in 1990[148]. To address this, efforts were made in the 9MP to increase the income share of the B40 households. This further led to the shifting of policy focus from alleviating poverty to elevating the B40 in the 11MP.

The concept of the B40 is essentially a relative measure designed to monitor progress in addressing economic inequality in the quest of promoting shared prosperity. However, since its introduction, the term B40 has gradually evolved from being a measure to monitor distributional concerns to a policy target group for social assistance programmes.

Undeniably, Malaysia has achieved much progress in elevating the livelihood of the B40 households. The B40's household income has grown over the years in real terms, with the highest growth rate of 8.9% achieved during the 10MP and 11MP periods. However, this growth falls short of the target set out in the 11MP to double the B40's monthly mean household income from RM2,537 in 2014 to RM5,270 in 2020. In reality, the mean income recorded in 2016 was only RM2,848, signifying a marked shortfall of RM2,422. Consequently, the income target for B40 in 2020 was revised downward to RM4,430 in the MTR-11MP[149].

[148] EPU (2006)
[149] EPU (2018)

7.3 Key Findings 1: Profile of the B40 Households

Analysis of the characteristics of the 2014 Malaysian households indicates several common characteristics for the B40 households. A large proportion of these households relied on a single income recipient. The heads of households typically held lower educational attainment and were working in lower-skilled jobs. Additionally, compared to M40 and T20, a relatively higher share of the B40 households were headed by older aged individuals (defined as 60 years and above) as well as single women. B40 households had much lower residual income (both in absolute and relative terms) compared to non-B40 households.

Information on household characteristics is critical to craft better programmes in assisting the diverse types of deprivations faced by these households. The profile of the B40 households described above indicated intersections between these traits. Lower educational attainment somehow led to employment in lower-skilled jobs and made it even more difficult for them to advance in their employment. Heads of households who were in their post-working age were mostly pensioners and might be constrained in their ability to seek other forms of income. As these traits may be the sources of some vulnerabilities, policies can be designed to target problems faced by each subgroup as other channels to elevate their livelihoods.

On the other hand, the B40 households can also be categorised into several income subgroups. Among the B40 group, it is estimated that around 3.0% of households lived in absolute poverty i.e. below the poverty line of RM930 per month on average. These were the most deprived households with difficulties to fulfil basic needs. Using the relative poverty line benchmark—typically defined as half the median income—data indicates that around 38.0% of the B40 household lived below the relative poverty line income (including the 3.0% of B40 households that lived in absolute poverty). On the flipside, this implies that around 60.0% of the B40 households lived above both the absolute and relative poverty line i.e. at least above RM2,291 monthly. It is important to recognise that each income subgroup may be facing different types of deprivations, differ in their needs and hence require different intervention strategies.

Essentially, the demographic characteristics mentioned earlier are common traits of low-income households. Analysing the data at a more granular level, these characteristics appear to be even more pronounced when observing the bottom 20% of households (B20). If we are to continue using the relative income approach to analyse households, we suggest the use of deciles as a superior tool that will produce a clearer depiction on the state of the households.

The choice of the cut-off point that delineates one household group, for example the B40 group, from another, such as the M40 and T20, can be subjective. This report provides the basis that the classification of households can be further refined through:

1. Adopting the most suitable income concept that captures the economic resources available at households' disposal to access goods and services;
2. Considering the varying income distributions at different geographical locations;
3. Factoring the household size and economies of scale of living together to better assess the living standards across households; and
4. Analysing households' consumption levels and patterns to complement the income-based approach.

7.4 Key Findings 2: Adopting the most suitable income concept that captures the economic resources available at households' disposal to access goods and services

Household income can be derived from various components, and different definitions of income will affect the aggregate income statistics and distributional estimates such as inequality and poverty, leading to varying interpretations of economic realities faced by Malaysian households. The definition of income customarily used in the official household income statistics in Malaysia is the gross household monthly income. The "gross income" does not adequately capture the actual amount of economic resources available at households' disposal to consume goods and services. Using "net" or disposable income— defined as the total earnings and transfers received (both monetary and in-kind), plus incomes from production for own consumption, and minus transfer payments— would better reflect the economic resources available to the households. Hence, income definition on a net basis excludes income that cannot be directly used to bring consumption benefits.

Meanwhile, other definitions of income—such as production income, non-production income, monetary income, and non-monetary income—could help to identify different information pertaining households. The use of production income allows policymakers to understand what the households were earning themselves, a better reflection of the household's productive capabilities. Using non-monetary income leads to the observation of non-cash resources that contributes to a household's well-being.

Using the net income measure suggests a more equitable household income distribution with Gini coefficient being lower at 0.386 compared to 0.403 when using gross income. The results also indicate the positive effects of redistribution policies in the forms of taxation and transfers. Additionally, the Gini coefficient is found to be higher (0.445) when it is calculated based on the production income alone. This implies a more unequal income distributions when transfers received and taxes paid by households are not accounted for.

Meanwhile, the inclusion of non-monetary incomes such as imputed rent has increased the average household incomes and reduced income inequality estimation, with Gini coefficient of 0.417. Imputed rent seeks to factor in the benefits of owning a home compared to renting, with homeowners seemingly enjoying higher welfare levels compared to renters.

Policy Recommendation 1: Publish the data of other components of income to enhance distributional analysis

For economic welfare and distributional analysis, it is important that the appropriate definition of income is used to accurately identify the economic welfare of the households. Furthermore, the choice of income definition could influence income related statistics such as the rate of income growth, incidence of poverty and inequality.

Analysis on various components of income would allow policymakers to (1) measure variations in the distributional estimates within the country, (2) get a better understanding and identify the primary source of distributional concerns and (3) investigate the efficacy of redistribution policies to address them. Therefore, critical steps should be taken to allow for data of various components of income to be made publicly available in order to contribute to a more comprehensive policy design and analysis. The ideal scenario would be to open access to all micro datasets.

7.5 Key Findings 3: Considering the varying income distributions at different geographical locations

The current B40 demarcation is generally set by considering the income threshold at the national level. Notably, the levels of economic development were uneven between states in Malaysia with income distributions differing considerably across various geographical locations. Thus, using a national threshold to classify households into the B40, M40 and T20 may discount the living realities of the households in their respective states, painting an inaccurate depiction of their welfare from the localised context. Households in states with a higher level of urbanisation and larger concentration of economic activities tend to exhibit a higher average income level. Consequently, the B40's income threshold within the boundaries of these states would be unusually higher in comparison to other areas.

Looking at the bottom 40% of the population based on the state-level income thresholds may give a better indicator of the standard of living of these households. Data showed that the highest state-level income threshold for B40 was in Putrajaya at RM6,447, while the lowest threshold was in Kelantan at RM2,348, signifying a gap of RM4,099 or 63.6% between the two extremes. States in the middle such as Melaka, Pulau Pinang, Negeri Sembilan and Terengganu had thresholds of about ±13.0% or ±RM500 of the national threshold.

Using the national B40 threshold of around RM3,800 in 2014 as a uniform income eligibility criterion for social assistance for all states can be practical as it helps to reduce implementation and delivery complexities. However, applying a one-size-fits-all threshold could overgeneralise Malaysian households and conceal the diverse economic realities the households face in their respective localities.

Some households may be deprived of accessing governmental assistance amid the higher living costs associated with states with higher levels of urbanisation. Not considering income distribution and living cost variations between states in the formulation of policies may result in uneven access to welfare assistance and public services. This can be much more apparent to low-income and vulnerable households in more economically advanced states.

Policy Recommendations 2: Calibrate income criteria for social assistance to reflect the reality of households' living environment

Considering wide income disparities between states in Malaysia, assessments need to be made to use either the national threshold or the state-level threshold to identify households eligible for social assistance. Solely using the national threshold may result in those who require assistance becoming ineligible for the aid they need. However, only using the state-level thresholds may include households that may not need help.

The state governments should consider calibrating their income criteria based on localised conditions to better reflect the situations on the ground. This would allow for the inclusion of the B40 households at the state level to receive assistance such as those pertaining to housing and cash aid.

Meanwhile, the federal government may want to view inequality at the national level by assessing each state's needs in the allocation of resources to the state governments. By considering the unevenness in income distribution, the federal government could distribute resources more equitably, hence achieving its overall welfare objective.

7.6 Key Findings 4: Factoring the household size and economies of scale of living together to better assess the living standards across households

The current practice of identifying households in the B40 group does not adjust for different household size, composition and the economies of scale arising from living together.

This means that this approach does not capture situations in which households may have a higher income but also have a high number of dependants. For example, two households with monthly income of RM10,000 each would probably be classified as the top 20% households. However, if the first household was smaller than the other household, these two households may not be enjoying the same standard of living. A simple approach would be to consider household per capita income. However, there were cost savings and the economies of scale effects from living together which result in lower expenditure per household member for a larger household.

Standardising household income by utilising an equivalence scale could help provide a better estimate of living standards that would be comparable across households with different compositions. To estimate these effects, a regression analysis found that the equivalence scale value for the first additional member entering a household was 0.63. This implies that on average, income (or expenditure) level would have to increase by 63% to maintain the same living standard per one additional household member. This average value is slightly higher compared to the OECD-modified scale's average value (α = 0.59), as well as the value using the square root scale (α = 0.50). However, all of them still fall within the range found in the existing empirical studies of between 0.2 and 0.8[150].

As the household size became larger, the equivalent scale elasticity continues to decrease up to the fifth member being added to the household. However, the equivalent scale elasticity rose after the fifth additional household member, suggesting that the effect of economies of scale tapers at this point.

Not considering the effects of household size when drawing the cut-offs could lead to misclassifications of households, placing those who might be in the lower income group (e.g. B40) into higher income groups such as M40 or T20.

Results from our analysis found households' ranking in the income distribution changed after their incomes were adjusted to account for household size. 80.2% of households that were initially identified as B40 remained as B40, while the residual B40 households are reclassified as M40. Among households that were initially in the M40 group, around 70.0% remained in the same income group, while another 20.0% moved down to B40 and 10.0% moved up to T20. Similarly, for households which were initially in the T20 group, only 78.4% remained in the same income group and the remaining were pushed down to the M40 group.

[150] Buhmann et al. (1988)

Policy Recommendations 3: Income should be equivalised when comparing welfare across households

An important aspect in the effort of assisting households is to correctly identify the households in need, hence underscoring the need of a mechanism that could properly account for factors influencing a household's economic welfare. Currently in Malaysia, income data from various sources are collected at the household level instead of at the individual level. While this approach is satisfactory in providing independent analysis, comparisons across households can be tricky due to differences in household size and composition.

Equivalising income leads to an improvement in the identification of households that need assistance, allowing for proper allocation of government resources. Furthermore, since majority of Malaysian households are classified as families with around half of the members were children of various ages, equivalising the income by taking into account the number of dependents would help shape our focus on the well-being of these households.

7.7 Key Findings 5: Analysing households' consumption levels and patterns to complement the income-based approach

Household consumption patterns can also provide important insights on the level of households' material well-being. Analysis of the consumption patterns showed that households tend to be constrained by a "hierarchy of needs"—they fulfill their physical necessities first before going after goods and services of a more comfortable lifestyle.

Typically, expenditure on food and other basic necessities like clothing and housing dominates the spending of low-income households. As household income increases, their expenditure patterns become more diverse as indicated by a reduction in the budget share for food and an increase in non-food expenditures, signifying a change in the household's welfare level.

Analysis of the consumption patterns shows that firstly, households that were only able to fulfil their basic needs tend to be concentrated approximately in the bottom 20% households (B20 based on equivalised income distribution). These households spent most of their income on food, housing and clothing.

Secondly, the consumption pattern of households between the B20 and the T30 (or M50 based on equivalised income distribution) appear to be remarkably similar. These households demonstrate minor differences in consumption; for example, some households were able to eat out, and some started to send their children for tuition classes or were able to spend more on household furniture.

Thirdly, households that exhibit aspirational consumption are concentrated in the top 30% households (T30 based on equivalised income distribution). Aspirational households refer to households that are able to consume everything in the expenditure space, thus endowing

themselves with the ability to maintain or invest further for their own upward mobility and protect themselves from risky scenarios. This finding also implies that more than half of the existing "M40 household" (based on the current demarcation) do not exhibit the aspirational consumption.

Policy Recommendations 4: Rethinking of the use of B40, M40 and T20 demarcations for government social programmes

In these past few years, the B40 group has continued to become a focus for social assistance programmes. Adopting the concept of the B40 to identify eligibility for welfare assistance would mean that 40% of households would always qualify. Arguably, that it is not a small number since in 2014 alone, it encompassed around 2.7 million Malaysian households.

Tying the findings from the consumption and income analysis, it can be argued that that the use of the B40 demarcation as a policy targeting mechanism can be flawed. In the context of poverty or ensuring minimum living standards, the current B40 demarcation would over-extend the coverage as half of those in the B40 may not require the same type of assistance as those in poverty. Meanwhile, in the context of assisting households to achieve aspirational status (middle-class status), the current B40 demarcation would exclude those households that are still constrained by monetary concerns and may need assistance. As some households in the middle would still require assistance such as better access to work opportunities, limiting support to only the B40 group would miss out a larger proportion of households in need.

The distinct characteristics of the households consuming basic needs (with equivalised income of below RM1,196), as well as the similarities found among households on a spectrum of trade-offs/well-being (with equivalised income between RM1,196 and RM3,015), suggest that government's social policies matter to households beyond the B40 group. These findings however entail different approaches in policy prescriptions.

Households on an equivalised income of below RM1,196 can be considered as the most vulnerable population group, being able to only afford basic necessities. This group would require a more focused approach such as providing direct assistance and cash transfers. As the government's capacity to provide social support would be constrained by fiscal conditions, increasing the target group without proportionally increasing the fiscal resources means that allocation will be spread thinly across delivering agencies. Hence, some form of welfare assistance such as cash transfers and subsidies would need to be confined to the most vulnerable and neediest group. This would allow for the provision of assistance with better quality and higher allocation per unit in lifting them out of their vulnerable conditions.

Meanwhile, for the subsequent group i.e. households on an equivalised income of between RM1,196 and RM3,015, programmes should be designed to empower them. This could be done by extending programmes that provide opportunities to enhance educational attainment, employability and entrepreneurial skills as well as access to basic amenities and affordable housing to a wider group beyond the households that satisfy basic needs. Public services such as education, transportation and healthcare should remain universally provided to ensure people's access to basic needs are guaranteed.

7.8 Final Remarks: A Decent Life for All

Economic well-being is not only limited to the amount of money one has, but also extends to what that money can buy. Assessments on both income and consumption sides are imperative in understanding the well-being of Malaysian households.

From the findings of this study, we argue that solely targeting the B40 households for the provisions of social assistance can be both "too narrow and too wide" at the same time. In the context of poverty or ensuring the minimum living standard is met, the current B40 demarcation would over-extend the coverage since half of those in the B40 may not require the same type of assistance as those in poverty. However, if the policy aspiration is to assist households achieve aspirational consumption, the B40 demarcation would exclude a large portion of households in the middle of the income distribution who are still constrained by financial concerns and exhibiting trade-offs in their consumption patterns., We also conclude that the current "M40 households" do not exhibit aspirational consumption.

These findings entail different approaches in policy prescriptions. On one hand, a more focused approach such as direct welfare assistance in the form of cash transfers and subsidies would need to be confined to the most vulnerable group. The other would require a more holistic approach focusing on economic empowerment and widening the access to opportunities to assist households to achieve higher living standards. Social safety nets should continue be strengthened and access to basic amenities and public services should be made universally available to all.

REFERENCES

REFERENCES

Alston, Philip. 2019. *United Nations Special Rapporteur on Extreme Poverty and Human Rights, Visit to Malaysia*, 13-23 August 2019. United Nations Human Rights. Accessed September 8, 2019. Retrieved from https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24912&LangID=E

Anson, Mark JP, Frank J Fabozzi, and Frank J Jones. 2010. *The Handbook of Traditional and Alternative Investment Vehicles: Investment Characteristics and Strategies.* New York: John Wiley & Sons.

Arndt, Channing and Finn Tarp. 2015. *Measuring Poverty and Wellbeing in Developing Countries.* Oxford: Oxford University Press.

Balcazar, Carlos Felipe, Lidia Ceriani, Sergio Oliveri, and Marco Ranzani. 2014. *Rent Imputation for Welfare Measurement: A Review of Methodologies and Empirical Findings (English).* World Bank Group Policy Research Working Paper No. WPS 7103.

Banerjee, Abhijit Vinayak and Esther Duflo. 2008. *What is Middle Class about the Middle Classes Around the World?* Journal of Economic Perspectives, 22(2), 3-28.

Beinhocker, Eric D. 2006. *The Origin of Wealth: Evolution, Complexity, and the Radical Remaking of Economics*. Boston: Harvard Business School Press.

Berg, Andrew. and Jonathan Ostry. 2011. *Inequality and Unsustainable Growth: Two Sides of the Same Coin?*. IMF Staff Discussion Note 11/08. Washington, D.C.: International Monetary Fund.

BNM. 2018. *The Living Wage: Beyond Making Ends Meet*. Entry for Bank Negara Malaysia Annual Report 2017. Kuala Lumpur: Bank Negara Malaysia.

Buhmann, Brigitte, Lee Rainwater, Guenther Schmaus, and Timothy M Smeeding. 1988. *Equivalence Scales, Well-Being, Inequality, and Poverty: Sensitivity Estimates across Ten Countries Using the Luxembourg Income Study (LIS) Database*. Review of Income and Wealth, 34(2). 115-142.

Canberra Group. 2001. *Expert Group on Household Income Statistics: Final Report and Recommendations (4th ed.).* Ottawa: Canberra Group.

Chai, Andreas, Nicholas Rohde, and Jacques Silber. 2015. *Measuring the Diversity of Household Spending Patterns*. Journal of Economic Surveys, 29(3). 423-440.

Chanfreau, Jenny, and Tania Burchardt. 2008. *Equivalence Scales: Rationales, Uses and Assumptions*. Edinburgh: Scottish Government.

Chenery, Hollis, Montek S. Ahluwalia, C. L. G. Bell, John H. Duloy, and Richard Jolly. 1974. *Redistribution with Growth; Policies to Improve Income Distribution in Developing Countries in the Context of Economic Growth*. Oxford: Oxford University Press.

Choong, Christopher, Tan Theng Theng, Rachel Gong & Adam Manaf Mohamed Firouz. 2018. *Labour Market and the Shifting Landscape of Care in Malaysia: The Missing Link*. MSC11 Proceedings, Adya Hotel Langkawi.

Coyle, Diane. 2015. *GDP: A Brief but Affectionate History*. Princeton University Press.

Currid-Halkett, Elizabeth. 2017. *The Sum of Small Things: A Theory of the Aspirational Class*. New Jersey: Princeton University Press.

Cutler, David M, and Lawrence F Katz. 1992. *Rising Inequality? Changes in the Distribution of Income and Consumption in the 1980s.* American Economic Review, 82(2). 546-551.

Deaton, Angus, and Christina Paxson. 1998. *Economies of Scale, Household Size, and the Demand for Food*. Journal of Political Economy, 106(5). 897-930.

Deaton, Angus, and John Muellbauer. 1986. *On Measuring Child Costs: With Applications to Poor Countries*. Journal of Political Economy, 94(4).

Deaton, Angus. 2006. *Measuring Poverty.* Understanding Poverty, 3-15. New York: Oxford University Press.

DOS. 1980. *Population and Housing Census of Malaysia Report 1980.* Putrajaya: Department of Statistics Malaysia.

DOS. 1990. *Population and Housing Census of Malaysia Report 1990*. Putrajaya: Department of Statistics Malaysia.

DOS. 2010. *Population and Housing Census of Malaysia Report 2010*. Putrajaya: Department of Statistics Malaysia.

DOS. 2015a. *Household Income and Basic Amenities Survey Report 2014*. Putrajaya: Department of Statistics Malaysia.

DOS. 2015b. *Household Expenditure Survey Report 2014*. Putrajaya: Department of Statistics Malaysia.

DOS. 2017a. *Household Income and Basic Amenities Survey Report 2016*. Putrajaya: Department of Statistics Malaysia.

DOS. 2017b. *Vital Statistics of Malaysia*. Putrajaya: Department of Statistics Malaysia. Accessed October 17, 2018. Retrieved from https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=165&bul_id=NXRCRDh0RENGeU13bC9EdzJ1cUFtZz09&menu_id=L0pheU43NWJwRWVSZklWdzQ4TlhUUT09

DOS. 2018. *Data Collection with Internet - Towards Population & Housing Census of Malaysia, 2020*. Paper presented at the UNESCAP Asia-Pacific Regional Workshop on the Use of Technology in Population and Housing Censuses, Bangkok, 24-26 January 2018. Accessed August 11, 2018. Retrieved from https://www.unescap.org/events/asia-pacific-regional-workshop-use-technology-population-and-housing-censuses

DOS. n.d. Household Income and Expenditure. Accessed January 27, 2019. Retrieved from https://www.dosm.gov.my/v1/index.php?r=column/cone&menu_id=cUp6NlNndGlaQkZhK0gwYUMyWFRxdz09

Duesenberry, James. 1960. *Comment on "An Economic Analysis of Fertility" in "Demographic and Economic Change in Developed Countries"*. 231-34. New York: Columbia University Press.

Easterly, William. 2001. *The Middle Class Consensus and Economic Development*. Journal of Economic Growth, 6(4), 317-336.

EPU. 1965. *First Malaysia Plan (1966-1970)*. Kuala Lumpur: Economic Planning Unit.

EPU. 1971. *Second Malaysia Plan (1971-1975)*. Kuala Lumpur: Economic Planning Unit.

EPU. 1976. *Third Malaysia Plan (1976-1980)*. Kuala Lumpur: Economic Planning Unit.

EPU. 2006. *Ninth Malaysia Plan (2006-2010)*. Putrajaya: Economic Planning Unit.

EPU. 2010. *Tenth Malaysia Plan (2011-2015)*. Putrajaya: Economic Planning Unit.

EPU. 2015. *Eleventh Malaysia Plan (2016-2020)*. Putrajaya: Economic Planning Unit.

EPU. 2018. *Mid-term Review of the Eleventh Malaysia Plan 2016-2020*. Putrajaya: Economic Planning Unit.

Feeny, Simon, Lachlan McDonald, May Miller-Dawkins, Jaclyn Donahue, and Alberto Posso. 2013. *Household Vulnerability and Resilience to Shocks: Findings from Solomon Islands and Vanuatu*. Society, State and Governance in Melanesia Disucssion Paper 2013/2. Canberra: Australian National University.

Frankfurt, Harry Gordon. 2015. *On Inequality*. New Jersey: Princeton University Press.

Frick, Joachim R., and Markus M. Grabka. 2003. *Imputed Rent and Income Inequality: A Decomposition Analysis for Great Britain, West Germany and the US.* Review of Income and Wealth 49(4), 513-537.

Garner, Thesia I., and Uri Kogan. 2007. *Comparing Approaches to Value Owner-Occupied Housing Using U.S. Consumer Expenditure Survey Data.* In Prepared for the Annual Meetings of the Allied Social Sciences Associations, Society of Government Economists, Chicago, United States. http://www. bls. gov/pir/spm/spm_pap_comp_housing07. pdf. 2007

Goldin, Ian. 2018. *Development: A Very Short Introduction* (Vol. 557). Oxford: Oxford University Press.

Hagenaars, Aldi JM, Klaas De Vos, and M. Asghar Zaidi. 1994. *Poverty Statistics in the Late 1980s: Research Based on Micro-data*. Luxembourg: Office for Official Publications of the European Communities.

Hausmann, Ricardo, and Bailey Klinger. 2006. *Structural Transformation and Patterns of Comparative Advantage in the Product Space.* Center for International Development (CID) Harvard University Working Paper No. 146.

Hawati Abdul Hamid, Jarud Romadan Khalidi and Jomo Kwame Sundaram. 2019. *A Rising Tide Lifts All Boats? Intergenerational Social Mobility in Malaysia.* Kuala Lumpur: Khazanah Research Institute.

Hawati Abdul Hamid, and Nur Aseken Md Yacob. 2019. *Estimating the Equivalence Scale for Malaysian Households.* Kuala Lumpur: Khazanah Research Institute

Heilbroner, Robert L., and Lester Thurow. 1998. *Economics Explained: Everything You Need to Know about How the Economy Works and Where It's Going*. New York: Simon and Schuster.

Hidalgo, César A., and Ricardo Hausmann. 2009. *The Building Blocks of Economic Complexity.* Proceedings of the National Academy of Sciences*,* 106(26), 10570-10575.

Hidalgo, César A., Bailey Klinger, Albert-László Barabási, and Ricardo Hausmann. 2007. *The Product Space Conditions the Development of Nations.* Science, 317(5837), 482-487.

Himmelfarb, Getrude, 1986, *Marriage And Morals Among The Victorians,* New York: Alfred A. Knopf.

Ho, Gregory, and Suraya Ismail. 2019. *The Expenditure Space: A Model to Demarcate Malaysian Households.* Kuala Lumpur: Khazanah Research Institute.

Hobijn, Bart, and Philip Hans Franses. 2001. *Are Living Standards Converging?* Structural Change and Economic Dynamics, 12(2), 171-200.

ILO. 1976. *Employment, Growth and Basic Needs: A One-world Problem; Report of the Director-General of the ILO.* Paper presented at the Tripartite World Conference on Employment, Income Distribution and Social Progress and the International Division of Labour. Geneva: International Labour Office.

Ismail, Suraya. et al. 2019. *Rethinking Housing: Between State, Market and Society: A Special Report for the Formulation of the National Housing Policy (2018 – 2025), Malaysia*. Kuala Lumpur: Khazanah Research Institute.

Jayadev, Arjun, Rahul Lahoti, and Sanjay G Reddy. 2015. *The Middle Muddle: Conceptualizing and Measuring the Global Middle Class.* Boston: University of Massachusetts Boston.

Jolliffe, Dean, and Espen Beer Prydz. 2016. *Estimating International Poverty Lines from Comparable National Thresholds.* World Bank Group.

Jorgenson, Dale W, and Daniel T Slesnick. 1987. *Aggregate Consumer Behavior and Household Equivalence Scales*. Journal of Business & Economic Statistics, 5(2), 219-232.

JPN. 2019. *Dasar Perumahan Mampu Milik Negara.* Putrajaya: National Housing Department of Malaysia. Accessed August 1, 2019. Retrieved from http://www.kpkt.gov.my/resources/index/user_1/MENGENAI%20KPKT/DASAR/BUKU_DRMM_11052019.pdf

Kakwani, Nanak, and Hyun H Son. 2005. *Economies of Scale in Household Consumption: With Application to Australia.* Australian Economic Papers, 44(2), 134-148.

Kharas, Homi. 2010. *The Emerging Middle Class in Developing Countries.* OECD Development Centre Working Paper No. 285.

KRI. 2018. *The State of Households: Different Realities*. Kuala Lumpur: Khazanah Research Institute.

Lanjouw, Peter, and Martin Ravallion. 1995. *Poverty and Household Size*. The Economic Journal, 105(433), 1415-1434.

Lanjouw, Peter. 2009. *Constructing a Consumption Aggregate for the Purpose of Welfare Analysis: Principles, Issues and Recommendations Arising from the Case of Brazil.*

Lazear, Edward P, and Robert T Michael. 1981. *Family Size and the Distribution of Per Capita Income.* American Economic Review, 70(1), 91-107.

Lewbel, Arthur, and Krishna Pendakur. 2008. *Equivalence Scales*. Entry for The New Palgrave Dictionary of Economics. London: Palgrave Macmillan UK.

Lipton, Michael, and Martin Ravallion. 1995. *Poverty and policy.* Handbook of Development Economics Volume 3A, 2551-2657. Amsterdam: North Holland.

Maslow, Abraham Harold. 1943. *A Theory of Human Motivation*. Psychological Review, 50(4), 370-396.

McGillivray, Mark, and Matthew Clarke. 2006. *Human Well-Being: Concepts and Measures.* Understanding Human Well-Being, 3-16.

McNamara, Robert S. 1980. *Address to the Board of Governors*. Washington D.C.: World Bank.

MOF. 2013. *2012/2013 Economic Report*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2014. *2013/2014 Economic Report*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2015a. *2014/2015 Economic Report*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2015b. *The 2016 Budget Speech*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2016a. *2015/2016 Economic Report*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2016b. *The 2017 Budget Speech*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2017a. *2016/2017 Economic Report*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2017b. *The 2018 Budget Speech*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2018a. *2018 Economic Report*. Putrajaya: Ministry of Finance Malaysia.

MOF. 2018b. *The 2019 Budget Speech*. Putrajaya: Ministry of Finance Malaysia.

MPFS. 2004. *Malaysian Population and Family Survey Report 2004*. Kuala Lumpur: National Population and Family Development Board.

MPFS. 2016. *Fifth Malaysian Population and Family Survey Report 2014*. Kuala Lumpur: National Population and Family Development Board.

Nair, Sulochana, and Sagaran Sagaran. 2017. *Poverty in Malaysia: Need for a Paradigm Shift*. Institutions and Economies, 7(3), 95-123.

NEAC. 2009. *New Economic Model for Malaysia Part 1*. Putrajaya: National Economic Advisory Council.

Nelson, Julie A. 1988. *Household Economies of Scale in Consumption: Theory and Evidence*. Econometrica: Journal of the Econometric Society, 56(6), 1301-1314.

Noorhaslinda Kulub Abd Rashid, Nor Fatimah Che Sulaiman, and Nur Afifah Rahizal. 2018. *Survivability through Basic Needs Consumption among Muslim Households B40, M40 and T20 Income Groups.* Pertanika Journal of Social Sciences & Humanities 26, no. 2.

OECD. 2008. *Growing Unequal? Income Distribution and Poverty in OECD Countries*. Paris: OECD Publishing.

OECD. 2011. *Society at a Glance 2011: OECD Social Indicators*. Paris: OECD Publishing.

OECD. 2013. *OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth*. Paris: OECD Publishing.

OECD. n.d. *OECD Project on Income Distribution and Poverty*. Assessed May 6, 2019. Retrieved from https://www.oecd.org/social/income-distribution-database.htm

Palma, José Gabriel. 2006. *Globalizing Inequality: 'Centrifugal' and 'Centripetal' Forces at Work*. Department of Economics and Social Affairs, United Nations Working Paper No. 35.

Prais, Sigbert Jon, and Hendrik Samuel Houthakker. 1971. *The Analysis of Family Budgets*. Cambridge: Cambridge University Press.

Rainwater, Lee. 1974. *What Money Buys: Inequality and the Social Meanings of Income*. New York: Basic Books.

Ravallion, Martin, and Michael Lokshin. 2003. *On the Utility Consistency of Poverty Lines.* World Bank Policy Research Working Paper No. 3157.

Ravallion, Martin, and Binayak Sen. 1996. *When Method Matters: Monitoring Poverty in Bangladesh.* Economic Development & Cultural Change, 44(4), 761-792.

Ravallion, Martin. 2019. *Ethnic Inequality and Poverty in Malaysia since 1969.* NBER Working Paper No. 25640.

Rodrik, Dani. 1999. *Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses*. Journal of Economic Growth 4 (4): 385–412.

Sandel, Michael J. 2012. *What Money Can't Buy: the Moral Limits of Markets*. New York: Farrar, Straus and Giroux.

Seers, Dudley. 1969. *The Meaning of Development*. International Development Review 11(4), 3-4.

Sen, Amartya. 1985. *Commodities and Capabilities (Lectures in Economics: Theory, Institutions, Policy)*. Vol. 7. Oxford: Oxford University Press.

Sen, Amartya. 2001. *Development as Freedom*. Oxford: Oxford University Press.

Smeeding, Timothy M., Peter Saunders, John Coder, Stephen Jenkins, Johan Fritzell, Aldi JM Hagenaars, Richard Hauser, and Michael Wolfson. 1993. *Poverty, Inequality, and Family Living Standards Impacts Across Seven Nations: The Effect of Noncash Subsidies for Health, Education and Housing.* Review of Income and Wealth 39(3), 229-256.

Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi. 2010. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Commission on the Measurement of Economic Performance and Social Progress.

Sundrum, Ramaswamy Meenatchi. 2003. *Income Distribution in Less Developed Countries.* Harvard: Routledge.

Tang, Chor Foon, and Nai-Peng Tey. 2017. *Low Fertility in Malaysia: Can it be Explained?* Journal of Population Research, 34(2), 101-118.

Tarp, Finn, Kenneth Simler, Cristina Matusse, Rasmus Heltberg, and Gabriel Dava. 2002. *The Robustness of Poverty Profiles Reconsidered*. Economic Development & Cultural Change, 51(1), 77.

Thurow, Lester Carl. 1987. *A Surge in Inequality.* Scientific American, 256(5), 30-37.

Trentmann, Frank. 2016. *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First.* United Kingdom: Penguin.

UNDP. 2007. *Measuring and Monitoring Poverty and Inequality*. Kuala Lumpur: The United Nations Development Programme (UNDP), Malaysia.

UNDP. 2018. *Human Development Indices and Indicators: 2018 Statistical Update*. New York: The United Nations Development Programme.

UNECE. 2011. *Canberra Group Handbook on Household Income Statistics*. Geneva: United Nations Economic Commission for Europe.

UNSD. 2018. *Classification of Individual Consumption According to Purpose (COICOP)*. New York: United Nations Statistics Division.

UNSO. 1977. *Provisional Guide-lines on Stastics of the Distribution of Income, Consumption and Accumulation of Households.* Studies in Methods, Series M. No. 61. United Nations. New Work.

Visaria, Pravin. 1980. *Poverty and Living Standards in Asia.* Population and Development Review, 6(2), 189-223.

Wang, Chen, and Koen Caminada. 2011. *Disentangling Income Inequality and the Redistributive Effect of Social Transfers and Taxes in 36 LIS Countries.* Luxembourge Income Study Working Paper No. 567.

World Bank. 2013. *Who are the Bottom 40%?* Assessed July 12, 2018. Retrieved from http://blogs.worldbank.org/developmenttalk/who-are-bottom-40

World Bank. 2016. *Poverty and Shared Prosperity 2016: Taking on Inequality*. Washington D.C.: World Bank.

Yates, Judith. 1994. *Imputed Rent and Income Distribution*. Review of Income and Wealth, 40(1), 43-66.