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EXPENDITURE PATTERNS AMONG POOR HOUSEHOLDS (ZAKAT RECIPIENTS): A CASE IN KELANTAN, MALAYSIA

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ABSTRACT

This study aims to investigate the relationships between the household consumption patterns among the poor with the type of expenditure items that they purchased on monthly basis. The study evaluates the household food and non-food demand patters for various poor groups in Kelantan. Data was collected by using a structured socio-economic questionnaire containing both open and close-ended items. 422 respondents were randomly selected for this study are selected from 2019 Kelantan Islamic Religious Council (MAIK) zakat recipients list of the poor and needy category, which is the lowest income quartile in Kelantan. Results of this study shows that the pattern of expenditure changes as the income of the poor changes (increase or decrease). The share of food expenditure will increase with an increase in income. Lower income household spend a higher amount of their expenditure on food items and other non-food expenditure becomes less important.

Keywords: Income and Expenditure, Zakat, B40.

INTRODUCTION

Malaysia is transitioning its economy into a free market system. One aspect of the free-market system is price volatility (reducing subsidies). The Malaysia government had reduced the subsidy on several terms since 2016. The process is one part of the rationalization program which one of the purposes is to regulate the government's balance sheet through improving the market efficiency while at the same time it can prevent smuggling the subsidized goods into neighbouring countries. However, the process hit hard on the B40 (Bottom 40 per cent) household, although the T20 (Top 20 per cent) and some of the M40 (Middle 40 per cent) manage to absorb the increase price and cost of living due to the rationalization of the subsidy. The increasing prices bring an irregular impact across population groups and stimulate different reactions (Wodon & Zaman, 2008; Zant, 2018). This is because high-income groups do not have much to cope with the high prices of food compared to the poor who will face the problem despite a slight increase in basic necessities. Hence, a slight decrease in the prices of basic goods will see demand from lower income consumers will increase and vice versa.

The bottom low-income group in Malaysia (B40) spends almost 80 per cent of household income on same necessary goods, whereas T20 and M40 spend about 64 and 48 per cent respectively on the same items. Furthermore, the large differences between the B40's household income and expenditure indicate that there is limited room for future savings (DOSM, 2014; Dasmin, 2017). Although the poor response by changing their food consumption by shifting to less balanced diets which in the long run it can harm their health status. Still, an increase in food price will make the poor worse off than the non-poor since the poor spend a greater part of their income on food (Regmi et al., 2001; UN, 2012). Moreover, with more money spent on food, less is then spent other items such as health care and education. This will bring a negative impact which in the long run it can limit their social and economic development opportunities and weakens the ability of the poor to break out of poverty (Braun, 2008).

The purpose of this paper is to analysis the consumption behaviour of bottom low-income people (zakat recipient) in Malaysia on various types of routine essential goods. In addition, this paper also attempts to estimate the consumption patterns of various subgroups of B40 population (zakat recipient). Subsequently, an analysis was conducted to see the tendency of households to change their usage style in line with the fluctuations in prices of goods in the market. Prior research on income and expenditure focused primarily on zakat recipient and B40 groups' total food consumption but neglected to take into account how consumption (food and non-food) can vary by income group and food and non-food type (Tan, 2016; Bank Negara, 2015; Doris Padmini

Sevaratnam and Poo Bee Tin's 2008; Selamah Abdullah Yusof and Jarita Duasa, 2010: Mok et. al., 2007). However, little study has examined how these distributions vary among family income levels, particularly in the context of Malaysia's disadvantaged groups. Do these income groups spend much differently on food and non-food items? Therefore, this study aims to identify the food and non-food items that are spent the most by this income groups.

The results of this study are important in giving an understanding of the types of commodities considered as necessities and luxury among low-income consumers. Findings from this study can provide more comprehensive explanation and understanding on the pattern of spending among the poor. Authorities such as zakat institutions and poverty alleviation agency can plan for a better strategy in the future regarding the management of zakat money or other poverty alleviation fund to be distributed more efficiently and effectively (Saad, Md Idris et. al., 2017). A clear understanding of how poor people who deal with price fluctuations can help the authorities to achieve sustainable economic development. The remaining parts of study are organized as follows: Review of Malaysia expenditure pattern is presented in section 2. Section 3 focuses previous study on the expenditure of the poor. Section 4 explains about the study area and research methodology. Results and their discussion are given in section 5. Finally, concluding remarks are presented in section 6.

MALAYSIA EXPENDITURE PATTERN

The Malaysian economy is growing at more than 5 per cent for 2016 to 2017 (World Bank, 2018). This growth is significant mainly to the overall level of spending and consumption among the public. The effect is that there is an increase in magnitude of expenditure that contributes to changes in the composition and the type of goods and services demanded. For example, in 2014, the average monthly household consumption expenditure was MYR4, 033. This increased to MYR4, 033 in 2016 which grew at 6.0 per cent per annum in nominal value. During that period, urban area households showed an increment of 5.8 per cent yearly from MYR3, 921 to MYR4, 402, meanwhile rural also increased by 5.7 per cent annually from MYR2, 431 to MYR2, 725 during the period of 2014 to 2016 (DOSM, 2017).

In 2016, Malaysian main household consumption expenditure (Figure 1) was on housing, water, electricity, gas & other fuels; food & non-alcoholic beverages; transport; and restaurants and hotels (69.1 per cent). Housing, water, electricity, gas & other fuels (24.0 per cent) were the highest contributor to the overall household consumption expenditure, followed by Food & non-alcoholic beverages (18.0 per cent); Transportation (13.7 per cent); and Restaurants & hotels (13.4 per cent).

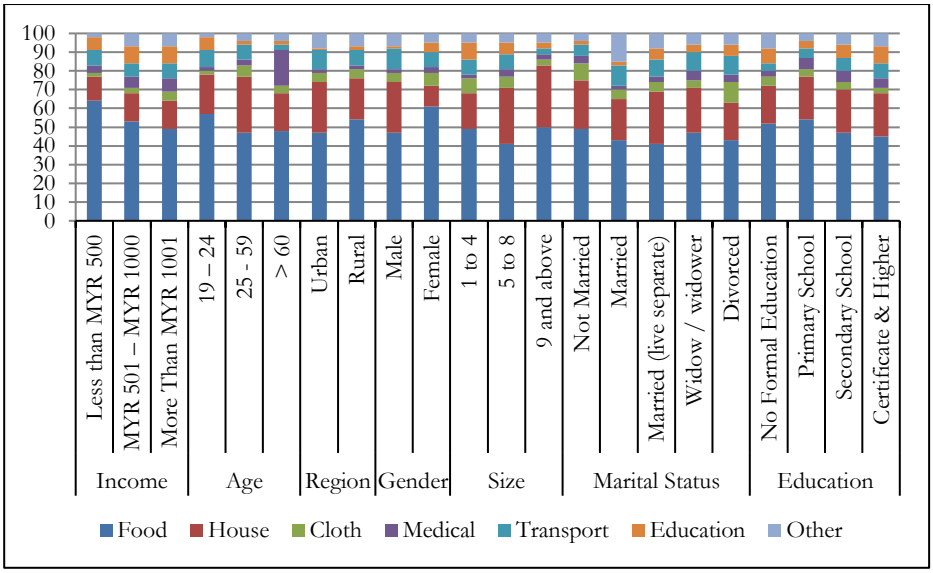

Figure 1: Percentage Expenditure Per Household in Malaysia (2017)
Source: Malaysia Household Expenditure Survey 2017

From the figure we also can see the difference in consumption pattern among Malaysia household which shows that the Malaysia household spend about 66.2 per cent of their income on non-food items while the food items only 33.8 per cent of their expenditure. Most of the non-food expenditure are on house, transportation, and miscellaneous goods & service.

While a good deal of research has been done in understanding consumption patterns among consumers, however study on the effect of socio background on consumption patterns especially in Malaysia is still at infancy stage. In addition, such studies focused on a general population and specific commodity which did not reflect the true consumption of the poor. For example, Othman and Ong (1995) only explored the usage patterns of electrical appliances among Malaysian, while Ong et al. (2008) only focused on expenditure patterns of adults aged 55 years or more, and Sheng et al. (2008) only examined the changes in food consumption pattern among Malaysian. Since private consumption by consumers which includes things like food, housing, energy, clothing, clothing, health, leisure, education, communication, transportation, as well as hotel and restaurant services—is one of the key factors in any nation's economic growth and consumer demand patterns for particular food items will be examined in this study by income groups in Malaysia. The

variations in food composition and household usage patterns in Malaysia could be influenced by a wide range of variables, including household size, prices for items, and income levels. The study's findings will help policymakers make recommendations for actions that are specifically targeted at these income categories. For policymakers to develop a strategy for food pricing determination and income-based consumer insights, it is crucial to understand how these elements affect household spending patterns on food goods. Additionally, the results will give health and government officials a clearer picture of how all these elements interact, as well as valuable information on the distribution of food and non-food expenditures by demographic and income categories, ensuring a higher standard of living for the B40 group.

LITERATURE REVIEW

Consumption can be defined as the final purchase of goods and services by individual. Consumption is an important concept and area in economics discipline because it generates growth and national income of the nation. Based on the renowned Keynesian theory, consumption is a theory of total spending in the economy (called aggregate demand) and its effects on output and inflation. The Keynesian also believes that aggregate demand is influenced by a host of economic decision, both public and private (Blinder, 1986). This theory also explains that the most important determinant of consumption is current real income. In a modest way, spending is based on how much income we have based on the type of economics goods; necessity or luxury goods (Rohana et. al., 2017).

Analysis on household's consumption patterns and how they change their consumption trends based on their income's fluctuations bring us to an understanding of the type of commodities deemed necessities and luxuries among poor people. Lately, there has been a thoughtful concern about the food and nutrition condition of poor people in developing countries (Bonaventure Boniface et. al., 2012; Abu Bakar et. al., 2012). Recent years has seen a rise in prices particularly for food which increase the share of the budget of low-income households (Levell & Oldfield, 2011). However, there is a deficiency of information about the way households allocate their budgets across different types of goods and services. Buchs, M., & Schnepf, S. V. (2013) stated that the household's budget allocation can depend on the household's demographic characteristic like income group, household size and prices. The increasing prices can lower the poor's purchasing power based on their nominal income and further affect their decisions on household's expenditure.

One of the purposes in estimating elasticity of consumption goods is to identify whether a good is a necessity or a luxury. For example, Wan (1996)

estimated Engel functions to compute the elasticity for rural China and found out that the staple food and clothing are necessities while housing and eating out appeared to be the two most luxurious goods. Kalwij and Salverda (2007) found out that in Netherlands, housing, food and beverages and home energy is classified as a necessary commodity. Items that were classified as luxuries were personal care and health care, food away from home, holidays and entertainment. Denton et. al., (2006) applied an adapted form of the Almost Ideal Demand System (AIDS) to estimate expenditure patterns and elasticity among the older population in Canada. The result shows that recreation, transportation, alcohol, clothing, food from restaurants, and health and personal care have the highest elasticity which imply that the goods are luxury. In contrast, goods that have the lowest elasticity of well below one are food at home, tobacco, and shelter which implying that these are necessities.

Moreover, Du and Kamakura (2008) use the Consumer Expenditure Survey data from the United States and found out that the poorest 20 per cent of US consumer have a higher preference share for food at home, health insurance, electricity, water and sewer and trash collection services, tobacco and smoking products, telephone services and gas, heating oil and coal, which suggest that these items are essential consumption product. In South African, Maitra and Ranjan (2006) found out that the rural households and a higher level of educational attainment spent a higher share on food expenditure compared to urban households. The female household head has a significant positive effect on the household's budget share of clothing. Other studies on specific commodity expenditure such as food are Bitterncourt et. al*.,* (2007) who analysed food consumption in Japan, found out that economic and non-economic factors have different impacts on food consumption over a lifetime.

Among the studies that highlighted the relationship of the price and consumer lifestyle studies like Grunert (2006) which found out that price has significant relationship with consumer lifestyle as the price of these food items (chicken and eggs) might be a reason to why chicken and egg products were consumed more frequently in the urban areas and among men, As well as in the urban areas, the lifestyle of the population is usually more hectic in comparison to their rural (Grunert, 2006; He et. al., 2010). Similarly, Othman, K. I., Karim et. al., (2013) pointed that price has significant relationship with consumption pattern of healthy food. According to Ali and Abdullah (2012), the new living environment and changes of lifestyles (cook and to eat food at home) have resulted in new arrangement in food consuming which different compared to two decades ago. It is the results from the growing of food industry, working condition and diminishes of traditional values which expecting woman to prepare food for the family. The practice of eating-out has helped families and

individuals to meet their food needs, biologically and socially. Study by Ishida et al. (2003) found out that the population growth, higher per capita income and rapid urbanization influenced the food consumption among the Malaysians. However, her study only utilized the data collected in the West Malaysia. Neglecting the sample population in the East Malaysia may have the Engel elasticity underestimated. This is because the income level of residence in the East Malaysia was generally much lower than in the West Malaysia in the survey periods.

STUDY AREA AND RESEARCH METHODOLOGY

The state of Kelantan has been selected as a study area for this study. Kelantan state has been selected because it has the highest poverty incidence in Peninsular Malaysia (DOSM, 2017) (Table 1). Furthermore, this state has a lot of poverty alleviation resources such as zakat (Mohd Ali, A. F., et. al., 2016) which among the highest zakat collection states in Malaysia that can be utilized as poverty alleviation fund (MAIK, 2014; Saad, Sawandi & Muhammad, 2016). However, to implement a policy, it is important for policy makers to know the pattern of consumption at household and individual level, especially among the poor (Mok et al., 2007). Table 1 explain the poverty incidence, Min Household Size, Min Income and Median Income in Malaysia for 2014 and 2016.

Table 1: Poverty Incidence, Min Household Size, Min Income and Median Income 2014 & 2016 (Malaysia)

State	Poverty Incidence (per cent)		Gini Coefficient (per cent)		Min Income (MYR)		Median Income (MYR)	
	2014	2016	2014	2016	2014	2016	2014	2016
Malaysia	0.6	0.4	0.40	0.40	6,141	6,958	4,585	5,228
Johor	0	0	0.32	0.35	6,207	6,928	5,197	5,652
Kedah	0.3	0.2	0.37	0.39	4,478	4,971	3,451	3,811
KELANTAN	0.9	0.4	0.39	0.39	3,715	4,214	2,716	3,079
Melaka	0.1	0	0.32	0.34	6,046	6,849	5,029	5,588
N.Sembilan	0.4	0.2	0.36	0.38	5,271	5,887	4,128	4,579
Pahang	0.7	0.2	0.36	0.32	4,343	5,012	3,389	3,979
P.Pinang	0.3	0.1	0.36	0.36	5,993	6,771	4,702	5,409
Perak	0.7	0.2	0.37	0.36	4,268	5,065	3,451	4,006
Perlis	0.2	0.1	0.35	0.33	4,445	4,998	3,500	4,204
Selangor	0.2	0	0.38	0.37	8,252	9,463	6,214	7,225
Terengganu	0.6	0.4	0.36	0.33	4,816	5,776	3,777	4,694
Sabah	3.9	2.8	0.39	0.40	4,985	5,468	3,800	4,123

Sarawak	0.9	0.6	0.39	0.39	4,934	5,387	3,778	4,163
W.P.KL	0.1	0	0.41	0.38	10,629	11,692	7,620	9,073
W.P.Labuan	0	0	0.37	0.37	10,401	11,555	7,512	8,275
W.P.Putrajaya	0	0	0.32	0.35	6,207	6,928	5,197	5,652

Source: DOSM, 2017

The Kelantan state consist of ten districts namely Kota Bharu, Pasir Putih, Pasir Mas, Kuala Krai, Gua Musang, Tumpat, Bachok, Jeli, Tanah Merah, and Machang. In Kelantan, 95.3 per cent of the population is Muslim (Kelantan Economic Report, 2016/2017). Kelantan was the poorest state in Malaysia in 1976. Statistics show that majority of Kelantan people (67.1 per cent) are below poverty. This statistic was then changed in 1997 when Sabah was recorded as the poorest state in Malaysia (22.1 percent). The rate of poverty has decreased in the following years. For example, the poverty rate in Kelantan has dropped to 0.4 per cent in 2016 from 0.9 in 2014 (DOSM, 2017).

Respondents for this study were selected from 2019 Kelantan Islamic Religious Council (MAIK) zakat recipients list of the poor and needy category, which is the lowest income quartile (B40) in Kelantan. Some criteria have been determined as sample selection. The recipient of this zakat must be for at least a year. These recipients are scattered in ten districts located in Kelantan. The selected sample list will be sent to a structured questionnaire. This questionnaire contains the most diverse and closed questions. The questionnaire used was through a pilot test to test the validity and reliability of the instrument. The pilot test was carried out in Kota Bharu, Bachok and Pasir Putih district prior to the actual fieldwork.

Sampling procedure in this study is based on stratified multi-stage method. This process starts with sample selection by dividing the population into strata or sub-populations. This sub population is solved to the district, region and sex of the household head. Next, samples were randomly selected (Randall et. al., 2013). The list of poor from MAIK zakat recipients will be used as a reference for respondent information in order to locate the address of the respondent. In order to get an accurate data and minimize bias, the questionnaire will be in local language (i.e. Bahasa Malaysia) and was clearly explained to the respondents. The head of household regardless of sex has been used as the unit of observation for this study. However, in a certain exceptional case, some other responsible member of the family (usually the wife) will be used as a respondent to replace the absentee head (usually the husband) of the household. The data collection process was done from May until December 2019. About 600 questionnaires were distributed to the respondents but only 422 surveys were

completed. The 422 completed questionnaires were analysed using Statistical Package for Social Sciences (SSPS).

The data in this study comprises items in household expenditure (HES). This includes spending on durable and non-durable goods and services performed by them. Specifically, the data included are the amount of expenses for food, expenses for non-food items, daily household items, gifts, and accommodation. In addition, the value of the use used for occupied homeowners is also taken into account. Household consumption expenditure is the value of consumer goods and services acquired, used or paid for by a household for the satisfaction of the needs and wants of its members. Non-consumption expenditure such as loan repayments and purchase of houses, etc are also included.

The variables in this study were selected based on theory and literature. The total expenditure of the households was used as dependent variables which includes expenses on food and non-food items. According to Deaton and Anne (1987) household consumption consists not only of goods and services purchased by households, but also those that they produce and consume themselves, as well as those important items (such as education and health facilities) that are frequently provided at least in part on a communal basis. The food expenditure includes seven items based on human food pyramid and calorie requirement including 1) Cereal Product, 2) Meat, Eggs and Fish, 3) Milk, 4) Beans, 5) Oil and Fats, 6) Sugar and 7) Vegetable and Fruits (MOH, 2005; MOH, 2009; MOH, 2016). The items under this part were adapted from reports from recommended nutrient intakes for Malaysia (MOH, 2005).

The non-food expenditure was adapted from Malaysia Statistics Household Expenditure Survey (2019) non-food criteria which include six items (1) Housing, including household utilities and housing contents and services; (2) Clothing and Footwear; (3) Medical; (4) Transportation and communication; (5) Education; (6) and Other Expenditure, including other payment, saving, fines and money given to others. The independent variables include total expenditure on food, cloth, house (shelter and utility), medical, education (both the formal and non-formal), transportation and communication and others (personal items) (Table 2).

Table 2: Food and Non-Food Items

FOOD	NON-FOOD	
Cereal Product:	Cloth and Shoes:	
✓ Rice	✓ Shirt	✓ Shoes
✓ Flour	✓ Pants	✓ Slippers
✓ Biscuit	✓ Socks	✓ Others

Meat, Eggs and Fish: ✓ Fish ✓ Eggs ✓ Chicken ✓ Red Meat	Shelter and Household utility: ✓ Rent ✓ Monthly Instalment ✓ Bills ✓ Toiletries ✓ Cooking Gas ✓ Others
Milk : ✓ Flour Milk ✓ Sweetened Creamer	Medical: ✓ Medicine ✓ Spectacles ✓ Monthly Inspection Fee ✓ Others ✓ ✓
Beans : ✓ Green Beans ✓ Dhal	Education: ✓ Fees ✓ Book ✓ Stationary ✓ Transportation (Bus School) ✓ Hostel fees ✓ Others
Oil and Fats: ✓ Cooking Oil ✓ Margarine	Transportation and Communication : ✓ Monthly Instalment ✓ Fuel ✓ Hand phone Top-up / Bills ✓ Newspaper ✓ Insurance ✓ Others
Sugar: ✓ Sugar, White Sugar, Honey	Personal items: ✓ Personal hygiene care ✓ Sport Gear ✓ Hobby ✓ ✓ Recreation ✓ Others
Vegetable and Fruits: ✓ Green leafy ✓ Fruits	

Source: DOSM, 2020

The respondent profile in this study are based on household head's income, size of family, region, gender of the household head, level of education for household head, age of the household head and marital status of the household head. Justifications of the respondent profile are explained in Table 3.

Table 3: Respondent Profile

PROFILE	CATEGORY	SOURCE
Income	1. Less than MYR 460 (Extreme Poor)	1. Malaysia Household Expenditure 2009 / 2014.

	2. MYR 461 – MYR 760 (Poor) 3. More than MYR 761 (Not Poor)	
Family Size	1. 1 to 4 2. 5 to 8 3. 9 and above	1. Malaysia Household Expenditure 2009 / 2014
Region	1. Urban 2. Rural	1. MAIK zakat recipients list (2016). 2. Malaysia Department of Statistic
Household Head Gender	1. Male 2. Female	1. Malaysia Household Expenditure 2009 / 2014
Household Head Education	1. Not Schooling 2. No Formal Education And Religious Education Only 3. Primary School 4. Secondary School 5. College Or University	1. MAIK zakat recipients list (2016). 2. Malaysia Household Expenditure 2009 / 2014
Household Head Age	1. 19 – 24 2. 25 – 59 3. > 60	1. United Nations Development Programme (UNDP), Malaysia. 2007. 2. MAIK zakat recipients list (2016). 3. Malaysia Household Expenditure 2009 / 2014
Household Head Marital Status	1. Not married 2. Married 3. Married but live separated 4. widow/ widower (death of spouse) 5. Divorced.	1. MAIK zakat recipients list (2016). 2. Malaysia Household Expenditure 2009 / 2014

Source: Various Issues

The statistical model used in this analysis uses information from both consuming and non-consuming households. The exponential regression model was used to see and identify the level of interaction of the dependent variables

(total expenditure) and the expenditure on the various independent variable i.e the X(s). The exponential model was used because it gave and output of a robust coefficient of determination that supported expenditure based on economic theory and statistical significance (Nakagawa, S., et. al., 2017). For a typical household the exponential model (Angeletos, G. M., et. al., 2001) can be expressed as:

$$\text{Ln } Y = f(X_1\beta_1 + X_2\beta_2 + X_3\beta_3 + X_4\beta_4 + X_5\beta_5 + X_6\beta_6) + \varepsilon \quad (1)$$

$$\text{Inexpenditure}_i = f(\text{Food}_i, \text{Cloth}_i, \text{House}_i, \text{Education}_i, \text{Medical}_i, \text{Transportation}_i, \text{Others}_i) \quad (2)$$

Where:

Inexpenditure_i	=	Total Household Expenditure
Food_i	=	Total Expenditure on Food and Drinks
Cloth_i	=	Total Expenditure on Cloth
House_i	=	Total Expenditure on House
Education_i	=	Total Expenditure on Education
Medication_i	=	Total Expenditure on Medication
Transportation_i	=	Total Expenditure on Transportation
Others_i	=	Total Expenditure on Other Items

Where i = 1, 2...., n; n is the number of households; Y_i is item expenditure; X is a vector of explanatory variables; B is a vector of coefficients; and ε is an independently and normally distributed random disturbance term with a mean of zero and constant variance, σ^2. The level of expenditures for the i^{th} household is determined by the combination of a non-stochastic component, $X_i\beta$, and a stochastic component, ε_i. The explanatory variables included in this model are total expenditure on Food, Cloth, House, Education, Medication, Transport and others (personal things). In this study, we create functional form to determine correlation between dependent variable and independent variables. Here, we stated the model specification following (Noel Blisard and J. Micheal Harris, 2002; Ali, M., 2011). We than transform the actual functional form into logarithmic form which clearly stated as follows:

$$\text{lnexpenditure}_i = \beta_0 + \beta_1\text{lnfood}_i + \beta_2\text{lnhouse}_i + \beta_3\text{lncloth}_i + \beta_4\text{lneducation}_i + \beta_5\text{lnmedication}_i + \beta_6\text{lntransportation}_i + \beta_7\text{lnothers}_i + \varepsilon t$$

Where:

ε = Error term for the model

The log model measures the percentage change. Therefore, the models are invariant to the scale of the variables. The models also give a direct estimate of elasticity. For models with $y > 0$, the conditional distribution is often heteroskedastic or skewed, while $\ln(y)$ is much less so. On top of that the distribution of $\ln(y)$ is narrower, limiting the effect of outliers. The regression technique will allow us to isolate and compare the effect of household characteristic on their expenditure, while holding other determining variables constant. The results of this study can visualise which characteristic have the largest impact on determine the income of the poor and how much the impact give does and in the future, it assist the poverty alleviation agencies by providing a special attention in designing strategies to increase the effectiveness of welfare enhancing programs.

RESULTS

Sample of the study were 422 households from the poor households in Kelantan for 2019. Samples selection ranged 51 per cent (215) for urban and 49 per cent (207) for rural area. It shows that 44 per cent of the respondent is male household head and 56 per cent is female household head. Overall respondent in the urban area and female household head were higher as compared to rural area and male household head (Table 4).

Table 4: Respondent of the Study

Profile	Frequency	Per cent	Cumulative per cent
Income			
Less than MYR 500	100	24	24
MYR 501 – MYR 1000	184	44	67
More Than MYR 1001	138	33	100
Family Size			
1 - 4	120	28	28
5 - 8	166	39	68
More than 9	136	32	100
Region			
Urban	215	51	51
Rural	207	49	100
HH Gender			
Male	186	44	44
Female	236	56	100

HH Education			
No Formal Education	65	15	15
Primary School	97	23	38
Secondary School	168	40	78
Certificate & Higher	92	22	100
HH Status			
Not Married	88	21	21
Married	125	30	50
Married Live Separated	44	10	61
Divorced	52	12	73
Widow/ Widower	113	27	100
HH Age			
19 - 24	82	19	19
25 - 59	182	43	63
More than 60 years	158	37	100
Total	422	100	

Source: Questionnaire

Analysis on food and non-food expenditure as shown in Figure 2 shows a higher portion of expenditure is used on non-food items. Poor household spend on average MYR 490 per month on non-food items which accounts for roughly 56 per cent of their total monthly expenditure. However, in term of types of expenditure, poor households spend on average MYR 385 per month on food, which accounts for roughly 44 per cent of their total household expenditure. Higher per cent of total expenditure on food indicates that the poor tends to fulfil their basic needs (food) before other items. Expenditure on housing are (18 per cent), education (11 per cent), transportation (8 per cent), others items (8 per cent), cloth (6 per cent) and expenditure for medication is 4 per cent.

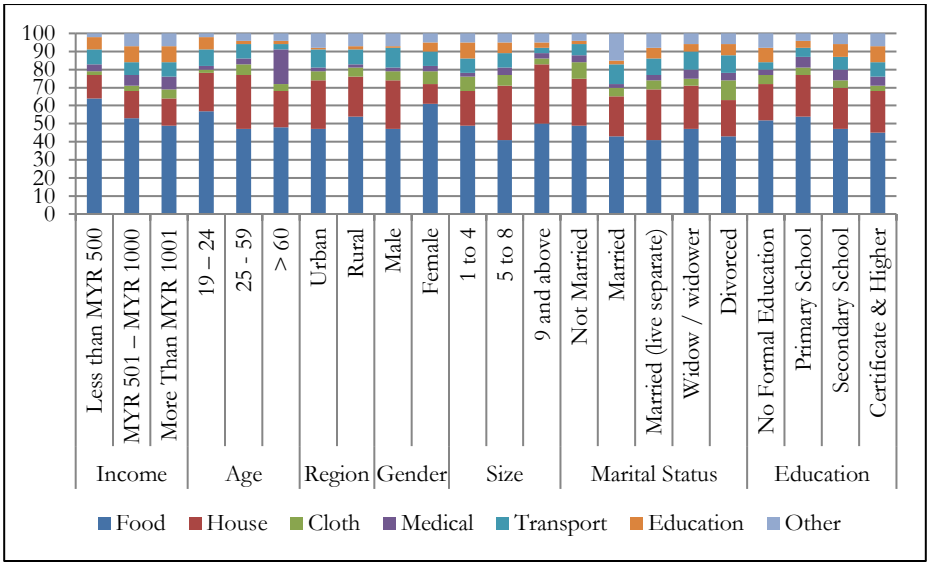

Figure 2: Kelantan Total Expenditure by Expenditure Groups: 2019 (Per cent)

The differences of food and no-food expenditure based on household characteristic in Kelantan (Figure 3) showed that most of the household spend most of their expenditure on food items where the percentage for food expenditure enclose and exceed half (50 per cent) of their expenditure. Results from Figure 3 shows that income less than MYR 500, household head aged 19 to 25, live in rural area, female household head, household member sized more than 9, did not have partnered (single) and only finished primary school has the highest food expenditure. Thus, according to Engel law, these groups are the worst groups of income distribution in Kelantan due to large portion of expenditure are devoted to the provision of food (Engel, E., 1857).

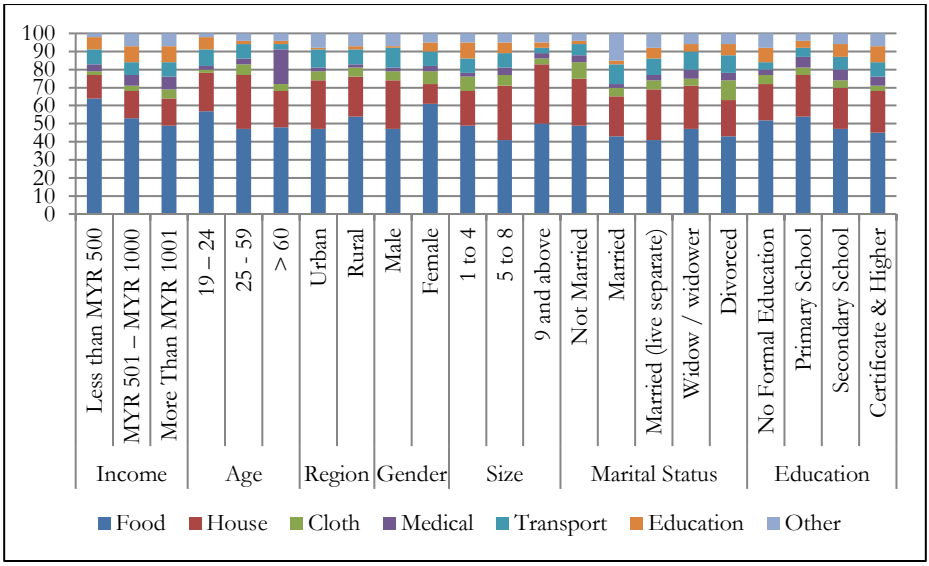

Figure 3: Kelantan Total Expenditure based on Food and Non-Food items: 2019 (Per cent)

The estimated average monthly household expenditure was MYR 925 (Table 5). The average household expenditure was highest on food and drink. Average monthly household expenditure on food was about MYR 589 which more than total expenditure for non-food items. The combined contributions from food expenditure made up 64 per cent of the total household expenditures. Average monthly household spending on transportation and other items was second behind food, due in part to the widespread of working nature among the poor. Cloth expenses had the lowest expenditure value of less than a MYR 6 or 0.6 per cent, showing that households spend the least on good or services relating to cloth.

Table 5: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Total Expenditure	546	387	5097	925.73	494.836
Food & Drink	546	200.88	1866.38	588.5862	232.35931
House	546	15.00	243.00	52.0128	26.21047
Cloth	546	.00	46.00	5.5824	3.88192
Medication	546	10	191	14.12	14.127
Transport	546	50	348	169.39	96.230
Education	546	5	25	13.10	7.300

Other	546	6	1322	100.69	118.029
Valid N (listwise)	546				

Results from linear regression revealed that about 82 per cent of the total variation associated with income was accounted by the six items of expenditure. This value can be classified as a high value for Adjusted R-squared that use the cross-section analysis. All variables show positive regression coefficients, explain that any improvement in expenditure will increase the amount of expenditure on the items. In reverse, negative regression coefficients explain that any increase in income of the poor dimension will decrease their expenditure. The Durbin-Watson value 1.005 presents that the regression result is free from a serious Autocorrelation problem. Table 6 also indicates that all variables have a significant effect in determining the expenditure of the poor and needy.

Table 6: Linear Regression Model Summary

Independent Variables	**B**	**Beta**	**t**	**Sig (*p*)**
(constant)	62.892		4.924	.000***
Food	9.647	.275	40.433	.000***
House	1.742	.092	22.402	.000***
Cloth	.246	.048	4.852	.000***
Medication	.994	.467	65.406	.000***
Transport	3.089	.024	6.347	.000***
Education	4.276	.063	6.491	.001***
Other	1.056	.252	47.349	.000***

*** Significant value at 1per cent, $R^2 = 0.821$, F = 351.753, Durbin Watson = 1.005

a. Dependent Variable: Total Expenditure

b. Predictors: (Constant), Food & Drink, House, Cloth, Transport, Medication, Education, Other.

Results from Table 6 shows that food, house, cloth, medication, transport, education and other personal items has a strong influence on total expenditure among poor household. These variables are all significant at the 1% ($P \leq 0.01$), and has a positive, showing an equivalent relationship. The food item has the strongest influence on total household expenditure whereas if the expenditure of the family goes up by 1 per cent, the monthly expenditure on food will increase by 9.6 per cent ($\beta = 9.6$, $p < 0.01$), holding other variables constant. Household with low income and bigger size are expected to spend

more on food items. The results also show that education ($\beta = 4.3$, $p < 0.01$), transportation ($\beta = 3.1$, $p < 0.01$) and housing ($\beta = 1.7$, $p < 0.01$) expenditure are also important in determine the expenditure of the poor.

Since the poor involved in several economic activities, expenses for transportation is also high which assist them travelling from place to place. While at the same time education is given priority among the poor expenses where if expenditure of the family goes up by 1 per cent, the monthly expenditure for education items will increase by 4.3 per cent, holding other variables constant. Cloth has become the least important items in determine the expenditure of the poor whereas it only determine 0.246 ($p < 0.01$) of the total expenditure.

Estimated differences in expenditure levels between socio economics groups are shown in Table 7. Estimates are shown for differences in expenditure levels between the level of income, family size, region, household head gender, household head highest education, household head marital status and household head age. The results present differences in expenditure types after controlling for socio demographics.

Table 7: Exponential Regression Results for Monthly Household Expenditures Based on Food and Non-Food Items

	Food	House	Cloth	Medication	Transportation	Education	Others
Income (MYR)							
Less than 500	17.185	1.359	0.889	3.787	0.189	4.967	1.048
	(7.5)	*(22.8)*	*(51.8)*	*(6.7)*	*(6.1)*	*(10.6)*	*(30.3)*
501 – 1000	9.246	0.858	0.685	1.707	2.488	8.805	0.786
	(19.8)	*(9.2)*	*(25.5)*	*(2.9)*	*(4.3)*	*(4.3)*	*(18.2)*
1001	1.025	2.038	2.734*	7.891	0.553*	11.176	1.113
	(14.6)	*(3.9*	*(0.4)*	*(7.0)*	*(4.0)*	*(1.1)*	*(12.5)*
Family Size							
1 - 4	10.88	1.343	2.33	0.312	2.965	1.08	0.88
	(21.0)	*(14.1)*	*(6.5)*	*(2.5)*	*(2.3)*	*(6.3)*	*(20.4)*
5 - 8	0.975	1.488	2.209	10.614	0.159	6.227	1.043
	(46.9)	*(18.8)*	*(3.4)*	*(32.1)*	*(1.7)*	*(7.8)*	*(31.8)*
> 9	0.586	1.825	1.025	1.002	3.038	9.167	2.064
	(3.2)	*(8.8)*	*(23.6)*	*(28.2)*	*(3.2)*	*(19.1)*	*(0.9)*
Region							
Urban	2.653	9.745	0.351	0.357	2.616	1.017	1.06
	(4.3)	*(15.7)*	*(4.5)*	*(29.9)*	*(2.7)*	*(50.2)*	*(37.4)*
Rural	1.236	1.51	0.871	1.126	5.939	3.672	1.004
	(5.3)	*(20.1)*	*(42.9)*	*(7.7)*	*(8.8)*	*(4.7)*	*(20.2)*
HH Gender							
Male	0.927	1.548	6.241	1.668	10.191	1.019	4.288
	(43.5)	*(21.4)*	*(8.6)*	*(6.1)*	*(4.3)*	*(26.3)*	*(6.8)*
Female	1.007	1.676	2.298	9.546	0.344	3.732	1.045
	(65.4)	*(22.4)*	*(6.3)*	*(40.4)*	*(4.9)*	*(6.5)*	*(47.3)*

HH Education							
No Formal Education	12.028 *(50.7)*	1.272 *(15.3)*	1.559* *(4.8)*	1.038 *(30.8)*	0.093* *(4.5)*	-0.658* *(2.9)*	1.031 *(37.7)*
Primary School	6.615 *(11.6)*	1.761 *(14.2)*	0.905 *(35.9)*	6.891 *(16.2)*	0.282 *(3.2)*	6.033 *(4.9)*	1.291 *(31.5)*
Secondary School	6.075 *(10.0)*	1.208 *(14.7)*	0.849 *(29.8)*	0.134 *(-0.009)*	5.11 *(3.7)*	0.919 *(7.8)*	0.849 *(24.4)*
Certificate & Higher	10.9 *(31.8)*	1.49 *(12.9)*	0.865 *(0.45)*	0.278 *(-2.9)*	4.282 *(4.8)*	1.022 *(4.8)*	0.9 *(9.9)*
HH Status							
Not Married	0.888 *(10.7)*	1.196 *(5.3)*	3.762 *(-4.1)*	0.308 *(8.1)*	4.877 *(-0.4)*	1.166 *(0.4)*	0.888 *(6.1)*
Married	10.915 *(-3.3)*	1.288 *(1.5)*	1.308* *(-3.4)*	0.655 *(7.5)*	0.162 *(-2.1)*	6.447 *(0.4)*	0.785 *(4.79)*
Married Live Separated	3.386 *(6.8)*	1.257 *(13.6)*	0.826 *(25.5)*	0.261 *(4.5)*	11.726 *(0.3)*	5.091 *(2.1)*	1.006 *(11.1)*
Divorced	12.502 *(1.8)*	1.116 *(9.1)*	1.809 *(2.2)*	0.972 *(21.5)*	0.337* *(3.4)*	1.596* *(0.6)*	1.007 *(12.6)*
Widow/ Widower	1.025 *(40.3)*	2.072 *(10.3)*	2.679* *(3.2)*	7.823 *(24.2)*	10.174 *(3.9)*	1.12* *(0.6)*	1.025 *(30.5)*
HH Age							
19 - 24	2.566 *(7.3)*	1.192 *(32.0)*	-0.03* *(-1.5)*	0.112* *(1.5)*	1.019 *(102.1)*	0.667* *(1.5)*	1.156 *(17.2)*
25 - 59	4.207 *(7.2)*	1.152 *(17.1)*	0.896 *(44.0)*	2.199 *(3.1)*	0.099 *(2.8)*	3.414 *(5.9)*	0.931 *(30.9)*
> 60	1.000 *(34.8)*	1.498 *(8.5)*	0.754 *(4.4)*	9.274 *(23.0)*	2.593 *(3.1)*	-0.566* *(-0.2)*	1.024 *(27.7)*

* Not statistically significant.

Note: *t* values in parentheses

Table 7 shows the estimated parameter of total household expenditure function. This finding signifies a positive coefficient between type of expenditure and socio-economic variables. The coefficient of those who has expenditure less than MYR 1000 is positive and significant in all type of expenditure items ($p < 0.01$). The result indicates that household who has higher expenses (more than MYR 1001) has higher significant expenditure on house ($\beta = 2.03$), medication ($\beta = 7.9$) and education ($\beta = 11.2$). Higher expenditure on housing indicates that those who have higher expenses are living in urban area which has a higher cost for housing expenses (i.e.: rent or house utility). Despite Malaysia's commitment to provide free primary and secondary education and medication, much of cost and education and medication fall on the parents, an unendurable burden for the poorest in this community. For example, while all of the school types except the private schools do not charge tuition, families face many other costs of sending their children to school, including exam fees three times per year, as well as school supplies which include school bags, notebooks and pens, uniforms, lunches or snacks during school days.

Lower expenditure on cloth and education expenditure among less than MYR 1000 expenditure indicate that there are economies of scale in household cloth and education expenditure had made them share their cloth and education tools (books and stationery). Furthermore, the results also suggest that the share of food expenditure will increase with an increase in income among the poor population. The results are results from "Engel's law", where lower income groups are more likely to increase their food budget in response to increase in income mainly due to healthy economic condition of the household. The lower income groups will have to spend most of their expenditure on essential goods such as food. However, when their incomes increase, most of the expenditure will goes into non-food items which left a smaller percentage of it is spent on food (Engel, 1857; Cirera & Masset, 2010; Donkoh, et. al., 2014). For example, if expenditure increases by 10 per cent, the demand for food expenditure among household income less than MYR 500 is likely to increase at 17.18 per cent which is higher than income MYR 501 to MYR 1000 which are only 9.24 per cent.

The coefficient of household size shows that lower sized household spend highest income on food (β = 10.9). We can see that the food expenditure has the highest coefficient suggest that a higher level of food consumption by low size household compared to bigger size household, other things remaining the same. Helen and Andrew (2006) found out that higher household size has less expenditure on food away from home among Malaysian people as larger households have a higher household burden and would be less able to afford the higher cost of eating-out whch make the food prepared at home may be more economical for larger households. Infant and children among lower sized family had create substantial increases in their financial costs of bearing and raising children, reduces the work participation and wage income of mothers, and reduces the proportion of school-age children attending school. Household with sized 5 to 8 has a higher expenditure coefficient on medication (β =10.6) and education (β =6.2) while more than 9 household members are more prone to spend more on transportation (β =3.03) and education (β =9.2). Noteworthy higher coefficient on medication, education and transportation among the higher size family shows that as the family grow, the health and education of the family has become important in determine the expenditure of the family. Higher number of older age in family requires higher expenses on medical service and equipment (Baudry, et. al., 2017). While, as the children grow the education of the children require a higher portion of their expenditure (Anyanwu, 2013).

Analysis on region shows that the poor in urban area has the highest coefficients on housing (β =9.7) expenses while the rural in rural area has the highest coefficients in transportation (β =5.9). This has proven that urban area

has a higher cost of living where their expenditure is more on surviving their basic requirement for house, while the rural poor has to spend more on transportation because of work or other economic activity. The estimated coefficients on household head gender confirm most of previous study. The result shows that the female household head has the highest coefficients in medication (β =9.5) and education (β =3.7) expenses. A number of studies show that increases in women 's control over household resources increase expenditures on family welfare, such as food and non-food items for children (Wongmonta, and Glewwe, 2017; Doss, 2013; Thomas, 1990). Further, previous research had shown that the share of assets owned by female household head significantly affects household expenditure patterns mostly on food and education budget (Muchomba, 2017; Doss, 1996).

The level of household head's education indicates that the low level of education did not give higher intention on cloth, transportation and education expenses. We can see that from the results that these items did not have significant effects on their expenditure. Overall, the food item still has the biggest effects on their expenditure. Marital status of the household head provides us with different results. Most of them have transportation as their highest significant effects on expenditure (not married, married live separated and widow). It shows that transportation is important in determine their monthly expenses. Married and divorced household has a higher significant coefficient on food items (β =10.9; β =12.5). It shows that this type of household has a higher number of household size and at the same time they have low expenditure limit. Results on the age household head, shows that as younger household head has a higher coefficient on food items which shows that they have the lowest income and expenditure among these categories. As they become older, health issues become their biggest concern that we see from the results medication has become the most significant coefficients among the older household head. Education has non-significant effect among the older people's expenditure.

CONCLUSION

This study shows several understandings in poor household's expenditure. The coefficient of total expenditure and food expenditure has an equivalent relationship where the share of food expenditure will increase (decrease) with an increase (decrease) in total expenditure. Lower income household spend a higher amount of their expenditure on food items which shows that other non-food expenditure becomes less important. However, as their income increases, their non-food expenditure increase whch show that their food expenditure decreased. The estimated results are clearly a reflection of "Engel's law", resulting in bigger food expenditure elasticity for lower income groups than

higher income groups. It also describes that the share of household expenditure on food typically falls as income increase.

In Kelantan, lower expenditure on food, house, cloth, education and other items among bigger size household suggest presence of economies of scale in that item's expenditure where it had reduced their per capita cost. The result shows that a larger household are usually those with many children and those who would benefit most from economies of scale. The existence of economies of scale in child rising means that the cost of a child is larger than the cost of a subsequent child. In other words, the cost of the extra child decreases as the number of children increases. Through savings, sharing and bulk buying, higher sized family manage to create economies of scale in family 's expenses which make them spend less per capita compared to low sized family (Anand, 2011).

A different phenomenon of expenditure among the poor suggests a better observations and analysis of the consumption behaviour of poor people in Malaysia for various types of routine essential goods. In addition, this study shows that how the poor's expenditure changed based on their characteristic and subgroups of the population. The impact of urbanization and changing in family's demographic had made the urban and female household head unable to compete for scarce resources and protect themselves from poverty (Bromley, 2013). It is importance to look more closely at the issue of comparability among the socio economic of the poor.

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