

Consumption Pattern Determinants of Low-income Household: Evidence from Malaysia

(Penentu Corak Penggunaan Isi Rumah Berpendapatan Rendah: Bukti dari Malaysia)

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ABSTRACT

This research aims at analysing the determinants of low-income household consumption patterns which represent the lowest income category at the bottom 40 percent (B40) of the population's income level. The determinants were socioeconomic and demographic factors. We used the OLS and Tobit estimation methods to determine the effects of these factors on B40 household consumption pattern. The findings showed that income, urbanisation, household size, gender, marital status, elderly status, housing status and age influenced the B40 household consumption. We thus conclude that socioeconomic and demographic factors exert significant impact on the B40 household consumption patterns. As urbanisation and development are rapidly growing, the study discovered that urbanization has a significant effect on food, transportation, clothing, equipment, alcohol and tobacco consumption patterns of B40 household. The study also showed differences in consumption pattern of the elderly compared to non-elderly B40 members. Further, the elderly status produced significant impact on food, housing, health, education, clothing, communication, and equipment. In addition, there are considerable differences between the 12 group of household consumption patterns based on age, gender, marital status, income, housing status and elderly. Changes in and evolution of socioeconomic and demographic factors also exert great influence on B40 household consumption and should thus be prominent in government policy. This study suggests that the government should focus on these factors in order to sustain B40 households' consumption level when real incomes are decreasing while the cost of living is intensifying. The government should also pay attention to the influence of socioeconomic and demographic factors that play a significant role in B40 household consumption and in structural changes to identify the vulnerable groups of households in order to gauge their diminishing ability to sustain spending.

Keywords: B40; low-income household; consumption pattern; demographic factor; socio-economic factor

ABSTRAK

Kajian ini bertujuan untuk menganalisis corak perbelanjaan dan faktor yang mempengaruhi corak perbelanjaan isi rumah berpendapatan rendah pada paras 40 peratus terendah (B40) di Malaysia. Faktor tersebut adalah faktor sosioekonomi dan demografi. Kajian ini menggunakan kaedah anggaran OLS dan Tobit untuk menentukan kesan ini terhadap corak perbelanjaan isi rumah B40. Penemuan kajian menunjukkan bahawa pendapatan, perbandaran, saiz isi rumah, jantina, status perkahwinan, status perumahan dan umur mempengaruhi penggunaan isi rumah B40. Kajian ini menyimpulkan bahawa faktor sosioekonomi dan demografi secara signifikan mempengaruhi corak perbelanjaan isi rumah B40. Kajian ini mendapati perbandaran mempunyai kesan signifikan ke atas corak penggunaan makanan, pengangkutan, pakaian, peralatan, alkohol dan tembakau isi rumah B40. Kajian ini juga menunjukkan perbezaan corak perbelanjaan di antara warga tua berbanding bukan warga tua B40. Status warga tua menghasilkan impak yang besar terhadap makanan, perumahan, kesihatan, pendidikan, pakaian, komunikasi dan peralatan. Selain itu, terdapat perbezaan yang ketara antara corak penggunaan 12 kumpulan isi rumah berdasarkan umur, jantina, status perkahwinan, pendapatan, status perumahan dan warga tua. Perubahan dalam dan evolusi faktor-faktor sosioekonomi



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dan demografi juga memberi pengaruh yang besar terhadap penggunaan isi rumah B40 dan perlu ditonjolkan dalam dasar kerajaan. Kajian ini mencadangkan bahawa kerajaan harus memberi tumpuan kepada faktor-faktor ini untuk mengekalkan tahap penggunaan isi rumah B40 apabila pendapatan benar berkurangan manakala kos sara hidup semakin meningkat. Kerajaan juga harus memberi perhatian kepada pengaruh faktor sosioekonomi dan demografi yang memainkan peranan penting dalam penggunaan isi rumah B40 dan perubahan struktur untuk mengenal pasti kumpulan isi rumah yang terancam untuk mengukur keupayaan mereka yang semakin berkurangan untuk mengekalkan perbelanjaan.

Kata kunci: B40; isi rumah berpendapatan rendah; corak penggunaan; faktor demografi; faktor sosio-ekonomi

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INTRODUCTION

Household spending is one of the driving forces of the country's economic growth, which serves as an indicator of the development of demand and supply (Amin 2011). The increase in household spending has a causal effect on the country's economic growth, especially on the expenditure of human capital and energy formation (Chirwa & Odhiambo 2016; Oyebowale & Algarhi 2020; Lin & Benjamin 2018; Ridzuan et al. 2020).

The change in household spending also reflects on an increase in the standard of living and welfare. While the country's economy is growing and household income increasing, household spending in Malaysia has also evolved in terms of patterns, structure, and total expenditure. The change and development of household consumption patterns are strongly influenced by the changing and evolving socioeconomic and demographic factors. The Department of Statistics Malaysia DOSM (2020a) reported changes in household expenditure based on income level, urbanization, household size, age and gender of household head (DOSM 2020).

Malaysian households face income disparity issue (DOSM 2020). Households are classified into three income groups comprising the bottom 40% of earners (B40), the middle 40% (M40), and the top 20% (T20). The B40 group is the lowest income category representing the bottom 40% of the national income level. The 2019 income threshold for the group was the nation's lowest at RM4,849 (DOSM 2020). The definition of household income group is referred to the Department of Statistics Malaysia (2020) and guided in turn by the Canberra Group Handbook on Household Income Statistics, published by the United Nation (UN). In the Sustainable Development Goal (SDG) framework of the UN, the 10th SDG professes to reduce the country's income gap and assist member nations like Malaysia to become sustainable and developed. The UN SDG framework articulates the universal goal to eradicate poverty as enshrined in SDG 1 as well as SDG 8, which espouses to increase per capita income and decent wages.

It is believed that Malaysia's B40 household group is at risk because of the country's growing cost of living, making it challenging to meet their basic needs since the low-income public does not have enough money to meet their daily living expenses. If the cost of living rises, they can only afford low-quality consumption thus putting their

health and wellbeing at risk (Robak et al. 2018). The low-income household cannot provide for the bare minimum of services and necessities, which may eventually stunt growth and health development especially in the young. According to Domínguez-Amarillo et al. (2020), low-income households are unable to utilize the optimal energy source since they cannot afford to purchase the necessary equipment. They are forced to economise on fresh produce and other quality food consumption to save money which may often be spent on unaffordable addictions (Joung & Min 2021a). Low-income household members characteristically appear physically weak and undernourished due to such economic reason ((Emery & Guo 2019). Income and financial constraints are the underlying causes for low-income. When this occurs in areas with high standard of living, the deleterious effect on the household may ultimately lead to worsening social problems in the community (Chien & Mistry 2013; Kurre 2003). The study by Badari et al. (2009) revealed that low-income households in the country characteristically showed deficiencies in income spending. Some past studies had similarly exposed negative social aspects regarding community health, life quality of the elderly and youths, socioeconomic development, and poverty (Alam et al. 2016; Mustapa et al. 2018; Rizal et al. 2022). The government's subsequent concerns on the growing poverty were translated into active efforts to eradicate it and reduce the wide income gap through the implementation of policies focused on aiding the low-income public.

The study on consumption patterns of B40 households gave a clear understanding on their economic situation. Analysis of household consumption patterns can provide information on their variation due to demographic and socioeconomic characteristics. Low-income household consumption patterns also differ from those of medium- and high-incomes. They tend to spend a greater percentage on food than other items (Hamid et al. 2021; Ismail 2020)(Rashid et al. 2018)).

This study aims to analyse the effects of income, urbanisation, household size, gender, marital status, the elderly, housing status and age on B40 household consumption pattern. It endeavours to analyse the socioeconomic and demographic factors that influence the spending patterns of these households. Does the urbanisation process exert impact on the spending patterns? Similarly, how do socioeconomic and

demographic factors affect their spending? Further, how does the elderly members affect household consumption? This is potentially an important consideration since Malaysia is rapidly becoming an aging society. Both the socioeconomic and demographic factors of the household are considered important in the assessment on consumption, including their evolution over time (Yusof & Duasa 2010a). Consistent with some earlier research (e.g., Mien & Said 2018; Yusof & Duasa 2010a) on Malaysian household consumption pattern, this study analysed the spending patterns of B40 households. However, a more comprehensive assessment was conducted since all 12 categories of spending were addressed. Data used for the analysis were from HES 2016, collected through DOSM. The findings established that socioeconomic and demographic factors significantly influenced B40 household consumption pattern together with their ongoing changes and evolution. The B40 household experiences lower expenditure rate compared to the Malaysian standard and the consumption pattern are concentrated on food, housing and transportation spending.

The current study contributes to the determinants of household consumption pattern in general and specifically on Malaysian B40 households, that are vulnerable to the increasing cost of living and purchasing. The study by Mien and Said (2018) in Malaysia utilised the HES 2014 data with focus on the problem of bankruptcy. In comparison, this study used the HES 2016 but concentrated on the consumption pattern. Research on household consumption in Malaysia normally used primary data, as in Badari et al. (2013), Latimaha et al. (2018), Rashid et al. (2018), and Yusof & Duasa (2010). Since the current study employed substantial HES data its findings can thus be applicable to the socioeconomic and demographic household situation of the Malaysian population, with the application of the stratified technique. This study adds to a better understanding on how income, urbanization, family size, gender, marriage status, elderly, housing status, and age affect the consumption habits of 12 different spending groups. Changes in the socioeconomic and demographic variables, are indicative that the B40 household spending behaviour in the market may exert a large influence on the economy given that this group makes up a substantial portion of the household component. Analysis on the relationship and impact of socioeconomic and demographic factors influencing B40 household spending patterns may reveal factors that support or threaten household spending, and ultimately economic growth.

LITERATURE REVIEW

THEORETICAL FRAMEWORK

The Engel Curve theory explains the household consumption patterns and their relationship with

income levels. It expounds that the percentage of food expenditure is influenced by the amount of income and size of the household, and the proportion decreases as income level grows. The household size in turn, is directly proportional to the total food expenditure. The theory was proposed by Ernest Engel, a German statistician (Abdel-Ghany & Schwenk 1993; Houthakker 2011) and its application is not confined to food expenditure alone. It has also been adopted in studying the relationship between other expenditure groups and household income (Yusof & Duasa 2010c). In addition, the Engel Curve Theory has also been used to explain the increasing number of expenditures on necessities, concomitant with the decreasing rate of growth in household income (Rashid et al. 2018; Wahab et al. 2018). Several theories that pioneered studies related to consumption were also used to determine the factors chosen to be tested in relation to household consumption patterns. The Life Cycle Hypothesis Theory explains the influence of age factors on household consumption patterns. Moreover, the theory of Relative Income Hypothesis describes the relationship of income with consumption in addition to explaining the influence of the psychological aspects of the individual's environment such as the state of society that will affect consumption in addition to income and price levels (Zeynalova & Mammadli 2020).

Engel curve function: $q_i = g_i(y, z)$ connects (total consumption) with $q_i y$ (income) and z (characteristics that the user has such as age, household size and other demographic characteristics). The shape of the Engel curve determines the relationship between variables for the expenditure of goods or services (Houthakker 2011; Lewbel 2006). The six Engel curve functions often used and tested for data analysis are linear, semi-log, hyperbolic, double-log, log-hyperbolic and inverse-log functions (Abdel-Ghany & Schwenk 1993; Bae 1992). The analysis of the Engel curve is formed based on two assumptions. The first assumption is that all households experience the same price levels for all types of goods, while the second assumption is that all households are on the same level of satisfaction. Household income or total expenditure is an independent variable used in analysing household expenses that apply the Engel Curve theory (Abdel-Ghany & Schwenk 1993; Khan & Khalid 2012; Yusof & Duasa 2010b). The function of the Engel curve is as follows:

$$w_{ij} = \alpha_i + \beta_1 Y + \beta_2 X_{ij} + \mu_i \quad (1)$$

w_{ij} = total expenditure of goods i for household j = (price * quantity) $P_i X_i$

Y = total income

X_{ij} = Household socioeconomic and demographic characteristics

μ_i = Error

HOUSEHOLD CONSUMPTION PATTERN

The term “household consumption” refers to any financial transaction carried out by households to acquire goods and services to fulfil the households’ necessities and wants (DOSM 2017; OECD 2013). The proportion of a household’s overall expenditure allocated to purchase particular category of products or services compared to the household’s total income is known as consumption pattern (Shah et al. 2020); Yusof & Duasa 2010). Households choose their spending priorities based on the relative importance of different requirements and desires and varying socioeconomic and demographic variables (Manajit et al. 2020). A review of the relevant literature revealed that factors such as income, price, urbanization of the residential area, age, gender, marital status, level of education, housing status, and old age all play a role in determining household consumption patterns. Other factors that play a role include household size (Alali et al. 2020; Elzaki et al. 2021; Manajit et al. 2020; Rashid et al. 2020). Each element varies in its degree of impact and may occasionally positively or negatively impact consumption patterns.

HOUSEHOLD CONSUMPTION PATTERN DETERMINANTS

Household income is among the most important factors significantly related to consumption. Keynesian consumption theory states that consumption is directly related to income. The study of Abdel-Ghany & Schwenk (1993); (Haron et al. 2005) Yusof & Duasa (2010); (Bagarani et al. 2011) (Dawood 2014)); Rashid et al. (2018) have found that income significantly influence and have a positive impact on food expenditure. The study of Wahab et al. (2018) reported differences in item consumed among households due to income level differences where the total expenditure of high-income households is greater than low-income households. (Park et al. 1996) also found that the total weekly and annual expenditure of low-income households was slightly lower than that high-income households strengthening the relationship of income and household consumption.

The Engel Curve theory also explains the consumption pattern of low-income households with a more significant percentage of food expenditure compared to households in higher-income groups such as M40 and T20. Badari et al. (2013) have found that on average low-income households spend 48% of their income on food expenditure with the highest percentage being on rice, sugar, and vegetable. An increase in income will increase total food expenditure but the percentage of food expenses will decrease in line with income growth. The decline in the value of household real income will affect spending on food items. They will respond to this by increasing the total expenditure on food items relative to other expenses (Badari et al. 2013).

An analysis on household food items in Turkey (Bilgic & Yen 2013) revealed that the value of income elasticity for food items exceeds one (1), thus indicating that expenditure on food items outstrips the increase in income. In comparison, income elasticity for food items in Malaysian households is on average relatively low, with a value of less than 1 (Mien & Said 2018). However, Wahab et al. (2018) discovered that households in the M40 group showed food income elasticity of more than 1 indicating that expenditure on food items is sensitive to income changes compared to that of B40 and T20 households. The analysis on income subgroups reported different results relative to overall calculation on elasticity. Rashid et al. (2020) found that increase in Malaysian household incomes stimulated M40 and T20 spending at a rate exceeding income growth as compared to B40 households.

With reference to the Absolute Income Hypothesis, the consumption of individuals is influenced by income, taxes and transfer payments. Although in this study the influence of taxes and transfer payments on consumption were not examined the Hypothesis is still useful in understanding the influence of income as a key factor to consumption. The study also refers to the Fixed Income Hypothesis to explain the relationship between income, wealth and interest rates that affect consumption but ignores the factors of interest rates and wealth. The socioeconomic and demographic factors tested were income, urbanisation, age, household size and gender. In this study, marital status and education were also included in the regression analysis given that these factors were frequently tested as reported in the literature review (Alali et al. 2020; Manajit et al. 2020; Mien & Said 2018; Shah et al. 2020; Yusof & Duasa 2010). Further, the educational factor is also considered important due to the policy of the Malaysian government in prioritizing education in the development of human capital. Given that the country is rapidly greying and heading for an aging society, the study also tested the elderly status of the household head and its impact on household consumption patterns.

The selection of income, urbanization, age, household size, gender, marital status, housing status, elderly status and education as socioeconomic and demographic factors were also based on many earlier studies (Abdel-Ghany & Sharpe 1997; Alali et al. 2020; Caglayan & Astar 2013; Elzaki et al. 2021; Latimaha et al. 2018; Manajit et al. 2020; Mien & Said 2018; Moon & Joung 1997; Rashid et al. 2020; Rashid et al. 2018; Yusof & Duasa 2010b). In this study, urbanisation is one of the factors that was analysed to discern household consumption pattern in urban and rural areas as influenced by income gap and price differences (BNM 2016). Urbanisation is seen as the potential factor that affects consumption due to the difference in price levels with expenses in the urban areas being distinctly higher than those in rural areas (Navamuel et al. 2019); DOSM 2022). Households headed by single mothers prefer education, health and food expenses which

differed from households led by men or married couples. Moon & Joung (1997) discovered lower spending for female-led households compared to those headed by men in South Korea. Paulin & Lee (2002) however, found no difference in consumption patterns between households led by male and female heads in the United States. Household consumption pattern is an important measure since it provides an overview of spending behaviour and potential market demand (Yusof & Duasa 2010b) and also household living standards (Wahab et al. 2018).

In this study the factors which affect Malaysian B40 household consumption patterns were examined and discussed. Comparisons were made with the national average in 12 categories of goods and services, to elucidate spending gaps and patterns in the poorer households. The 12 categories of expenditures were food, housing, transportation, health, education, clothes, communications, equipment, restaurants and hotels, alcohol and tobacco, leisure and entertainment, and miscellaneous goods. Malaysian household spending habits have changed over time in line with changes in household demographic structure. This study potentially contributes to extant information on household consumption patterns related to status of bankruptcy (as assessed by Mien and Said 2018), the cost of living (Wahab et al. 2018), and food consumption pattern (Applanaidu et al. 2022; Azahari & Badari 2009; Haron et al. 2005; Ishida et al. 2003; Tey et al. 2008).

METHODOLOGY

The consumption patterns of B40 households and the average Malaysian households were computed and compared. The purpose of the analysis of socioeconomic and demographic factors was to determine the relationship between 12 different household expenditure groups and factors such as income, urbanisation, age, household size, gender, marital status, housing status (renting versus own the house), presence of elderly household heads and education level.

HOUSEHOLD CONSUMPTION ANALYSIS

Household consumption pattern model analysis was conducted using the formula on percentage of expenditure to total expenditure following Mien & Said (2018); Ozer (2003); (Abdel-Ghany & Schwenk 1993); Bae (1992). Twelve models were developed to analyse the determinants of household consumption pattern. The formulation of the consumption expenditure model referred to the method used by some authors (Alali et al. 2020; Mien & Said 2018; Yusof & Duasa 2010a; Abdel-Ghany & Schwenk 1993). The model estimated is as followed, with the consumption pattern on the left side of the equation.

$$exp_i = \beta_0 + \beta_1 income_i + \beta_2 strata_i + \beta_3 age_i + \beta_4 size_i + \beta_5 gender_i + \beta_6 mar_i + \beta_7 eld_i + \beta_8 hstat_i + \varepsilon_i \quad (2)$$

The consumption pattern groups tested were food, housing, transportation, healthcare, education, clothing, communication, furnishing and equipment, restaurant

and hotel, alcohol, recreation, and others. Table 1 shows the category of independent variables investigated in this research.

TABLE 1. Research independent variables

Independent variables	Description
Income	Household head income
Urbanisation	Urbanisation 1= urban 2= rural
Age	Household head age
Size	Number of households
Gender	Household head gender 1 = male 2 = female
Marital status	Household head marital status 1 = married 2 = non-married
Elderly status	1 = household head is elderly 2 = household head is non-elderly
Housing status	1 = rent the house 2 = Own the house
Education	1 = Higher education 2 = Less than university attainment

DATA AND VARIABLE

The study used HES 2016 data collected by DOSM. The HES data is cross-sectional and acquired by a stratified probability sampling procedure. The socioeconomic and demographic aspects of Malaysian households were given priority in the sourcing. HES data have generally been extensively used for policy purposes related to national development by government and non-government agencies (DOSM 2020). The national data collection is carried out biannually every five years covering the consumption expenditures under the demographic and socioeconomic characteristics of the Malaysian population.

The idea of a household calculation block in a residential area was used as the basis for the sampling process carried out by the DOSM. The calculation block was developed in residential areas with dwellings of between 80 and 120 houses. The range of house numbers used in this calculation block is thus 80 to 120 (DOSM 2020b). The regions used in the study were designated, possessed their own borders, located inside administrative districts, and are subjected to regulation by local authorities.

The sample framework comprised computation blocks divided into categories based on urban or rural locations. The location of study must be officially recognized as a built-up and bounded residential urban area. Further, there must be a minimum of 10,000 residents according to the Malaysian Population and National Surveys. If the population is fewer, without designation as a city or town, the area will be considered rural.

A systematic random selection was adopted to ensure that each resident has an equal probability of being chosen as a respondent. Based on the chosen region, the probability of proportional size was then used to determine the number of household sample. For this survey, it was important to ensure that the selection of households was not biased so that the information obtained from the respondents can be generalized for the whole population. The total number of household participants in the survey was 14 55 with B40 representing 46% (or 6720), M40 representing 38% (5467) and T20 representing 16% (2364).

Household expenses are any form of financial transaction carried out by the household to obtain goods and services to meet their needs ((DOSM 2020b; OECD 2013). In line with the study's objective to analyse B40 household consumption patterns, 12 groups of goods and services were used as dependent variables for developing the regression model of household consumption. The groups refer to the category of expenditure used by the DOSM according to the Classification of Individual Consumption According to Purpose (COICOP) classified by the United Nations. These include food and drink, housing, transportation, health, education, clothing, communications, equipment, restaurants and hotels,

alcohol and tobacco, recreation and miscellaneous goods and services. HES data used in research were often debated on from the aspect of accuracy, consistency, and stability, either from the view of research findings or in the data collection process. However, HES data were seen to be consistent in terms of time series when compared to national account data (Smith et al. 2014) and their stability in terms of spending value for each group can also be observed (Xu et al. 2009). Disbursement values were not significantly different between expenditure groups, except for tobacco. HES values however differed from per capita value from national accounts and HES data findings are said to be smaller (Atkinson & Micklewright 1983; Smith et al. 2014).

METHODS OF ESTIMATION

OLS and Tobit estimation models are used to estimate household consumption patterns. If the percentage of total consumption, indicated as zero, is more than 5%, then it is possible to apply the OLS estimation method according to Gujarati (2011) and Abdel-Ghany and Schwenk (1993) as long as it does not exceed 9%. Conversely, if the number of zero-consumption households in the expenditure group exceeds the specified value, the Tobit estimating model should be employed. According to Newman et al. (2001) and Eakins (2013), the scenario of zero consumption value may be presumed to result from households not purchasing the items attributable to non-economic variables such as tastes and preferences or commodities purchased outside the review period as well as economic factors like price level and income. The Tobit estimate approach is used when the total zero spent on the observation is more than 9%, as recommended by Abdel-Ghany & Schwenk (1993).

The OLS estimation method was used to analyse the expenditure analysis of various goods and services in the food, housing, transportation, clothing, communication, equipment, restaurant and hotel, recreation and culture, and miscellaneous expenditure groups. In contrast, the expenditure analysis of health, education, and alcohol and tobacco will be based on the observation of zero total expenditure and the appropriate analysis method proposed by Abdel-Ghany & Schwenk (1993).

RESULT AND DISCUSSION

Table 2 shows the overall minimum consumption value and consumption pattern of Malaysian and B40 household consumers, according to independent variable categories. The biggest proportion of B40 household expenditure was on food, followed by housing, restaurants and hotels, and transportation. The consumption pattern, in proportional term, of B40 households in food, restaurants and hotels, as well as alcohol and cigarettes, surpasses that of the average value of Malaysian households. Based on gender analysis, B40 revealed that female households showed greater total consumption

in the health and education categories. The expenditure was however lower in other categories. Compared to unmarried members, married couples spend more on food, health, clothes, communication, equipment, restaurants and hotels, recreation, and miscellaneous products. Households with rent status spend more on transportation, education, clothes, communications, equipment, restaurants and hotels, alcohol and tobacco, and miscellaneous goods and services compared to

house owners. Total group consumption of food, transportation, education, communication, alcohol and tobacco, and other expenditures was greater in elderly households than the non-elderly. The average total household consumption of male members is greater than that of females, as well as that of married couples. Renter households spent more than owners, while the elderly spent more than younger members.

TABLE 2. B40 household consumption pattern

Expenditure group	Expenditure min (RM)		Consumption pattern (%)		Expenditure Min (RM)	
	Malaysia	B40	Malaysia	B40	Gender	
					Man	Woman
Food	718.27	582.53	21.37	23.34	598.97	518.00
Housing	844.76	531.82	22.29	21.30	531.96	531.28
Transportation	489.04	256.91	10.99	10.29	268.76	205.36
Health	71.43	41.35	1.73	1.66	40.13	46.01
Education	96.18	45.49	2.03	1.82	44.30	51.13
Clothing	117.08	75.90	3.09	3.04	78.13	67.12
Communication	183.03	90.09	4.38	3.61	91.78	83.14
Equipment	157.18	70.52	3.39	2.83	71.45	66.84
Restaurant & hotel	486.57	480.37	16.64	19.24	485.94	466.50
Alcohol & tobacco	144.17	93.40	3.56	3.74	95.28	76.23
Recreation	197.56	85.15	4.04	3.41	88.12	72.66
Miscellaneous	276.02	142.72	6.48	5.72	146.25	128.72

Expenditure group	Expenditure Min (RM)					
	Marital status		Housing status		Elderly Leader	
	Marriage	Non-marriage	Own	Rent	Non-elderly	Elderly
Food	622.90	478.08	598.54	538.41	577.43	585.20
Housing	530.51	535.21	538.40	513.70	549.79	522.42
Transportation	276.58	201.85	250.67	273.81	244.42	263.04
Health	40.64	43.16	45.18	30.57	56.25	33.21
Education	44.68	49.78	41.00	57.97	37.67	47.34
Clothing	80.97	62.78	75.04	78.27	62.95	82.66
Communication	91.39	86.58	87.22	97.81	83.82	93.20
Equipment	73.76	61.97	69.93	72.16	73.26	69.09
Restaurant & hotel	482.79	479.98	474.49	502.78	488.27	478.75
Alcohol & tobacco	92.54	96.36	91.10	99.48	91.23	94.33
Recreation	88.17	76.70	86.28	81.94	94.33	80.54
Miscellaneous	154.81	111.23	137.46	157.14	119.41	154.78
Total	2,579.74	2,283.68	2,495.31	2,504.04	2,478.83	2,504.572

The regression analysis of the household consumption pattern model in Table 3 shows that income, urbanization, age, household size and gender significantly affect household consumption patterns. Analysis of household consumption patterns conducted by (Campbell & James 2020); (Navamuel et al. 2017); (Kurre 2003) found urbanization factors were directly related to consumption. This gives an indication of an increase in income causing expenses to increase. The findings also found that income factors significantly affect household consumption except for alcohol and tobacco consumption. (Alali et al. 2020; Caglayan & Astar 2013; Mien & Said 2018; Yusof & Duasa 2010a) also found that income is significant and has a positive relationship with household expenses. Mohd Ali et al. (2021) also found that income is a significant determinant in influencing the expenditures of poor households, where the government's support for strengthening household income over the long term is seen to have an effect on the growth of household expenditures.

Urbanization was also among the significant factors associated with household consumption with higher total expenditures found to be in urban households compared to rural areas except in housing, education and recreation and cultural expenditures. (Kurre 2003) explained that urban areas with higher population density would affect and impact the increase in the cost of living. This finding is in line with a study conducted by (Navamuel et al. 2019) in which the municipal status of large cities affects and influences the cost of living. A study on household

expenses conducted by (Alali et al. 2020; Caglayan & Astar 2013; Mien & Said 2018; Yusof & Duasa 2010a) also found that urbanisation significantly influences and affects household consumption.

In addition, household size also significantly affects household consumption. The household size significantly positively affects the expenditure on food, clothing, communications and miscellaneous goods and services. On the contrary for other expenses, an increase in the household size has a negative effect on expenses. Mien & Said Study (2018); Rashid et al. (2018); Caglayan & Astar (2013); Yusof & Duasa (2010) (Rashid 2018) also found that household size affects household consumption as same in this study. Age among others is significantly related to household consumption patterns. However, the impact and influence of age factors are very small on consumption patterns.

The analysis of this study found that there was a difference in household consumption as a result of the influence of gender. According to (Moon & Joung 1997) there is an imbalance in household consumption led by single mothers or single fathers. The gender factor of the head of the household plays a role in determining household consumption. In addition, (Yusof & Duasa 2010a) found that gender factors significantly affect household consumption in Malaysia. Based on the analysis, there is a gender-influenced expenditure gap where the female household leader has lower amounts of expenditure on food, housing, health, education, clothing, equipment and miscellaneous goods and services.

TABLE 3. Factors of Malaysian household consumption pattern

Factors	Expenditure group		
	Food	Housing	Transport
Income	-0.092 (0.000) ***	-0.050 (0.000) ***	0.026 (0.000) ***
Urbanisation	0.033 (0.000) ***	-0.044 (0.000) ***	0.007 (0.000) ***
Age	0.001 (0.000) ***	0.001 (0.000) ***	0.000 (0.000) ***
Household size	0.044 (0.000) ***	-0.023 (0.000) ***	-0.002 (0.045)**
Gender	0.014 (0.000) ***	0.007 (0.004)***	-0.009 (0.000) ***
Marital status	-0.012 (0.000) ***	0.007 (0.000) ***	-0.006 (0.000) ***
Education level	-0.014 (0.000) ***	0.009 (0.000) ***	0.003 (0.017)**
constant)	0.845 (0.000) ***	0.674 (0.000) ***	-0.71 (0.000) ***
R ² (R-squared)	0.383	0.147	0.065
Adjusted R ²	0.383	0.147	0.065

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

Factors	Expenditure group		
	Health	Education	Clothes
Income	0.0068 (0.000) ***	0.0057174 (0.000)***	-0.005 (0.000) ***
Urbanisation	0.0023 (0.000) ***	-0.0034996 (0.000)***	0.001 (0.043)***
Age	0.0003 (0.000) ***	-6.67E-06 (0.836)	-9,549E-5 (0.000) ***
Household size	-0.008 (0.000) ***	-0.0035736 (0.000)***	0.008 (0.000) ***
Gender	0.0033 (0.000) ***	0.0012885 (0.255)	0.002 (0.001)***
Marital status	0.0014 (0.0095)***	-0.0014198 (0.239)	-0.001 (0.170)
Education level	-0.002 (0.009)***	0.0019135 (0.027)**	0.001 (0.008)***
<i>constant</i>	-0.048 (0.000)***	-0.0164009 (0.009)***	0.061 (0.000)***
Adjusted R^2	0.0111	0.0071	0.058

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

Factors	Expenditure group		
	Communication	Hardware	Restaurants and hotels
Income	0.007 (0.000) ***	0.008 (0.000) ***	-0.121 (0.000) ***
Urbanisation	-0.004 (0.000) ***	0.002 (0.000) ***	0.007 (0.013)**
Age	-5,650E-5 (0.000) ***	3,202E-6 (0.867)	0.000 (0.096)*
Household size	0.001 (0.269)	-0.004 (0.000) ***	-0.010 (0.001)***
Gender	-0.001 (0.351)	0.002 (0.024)**	0.001 (0.766)
Marital status	0.003 (0.000) ***	-0.004 (0.000) ***	0.006 (0.125)
Education level	0.005 (0.000) ***	0.004 (0.000) ***	0.002 (0.517)
<i>constant</i>	-0.008 (0.076)*	-0.027 (0.000) ***	1.128 (0.000)***
R^2 (R-squared)	0.049	0.04	0.189
Adjusted R^2	0.048	0.034	0.189

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

Factors	Expenditure group		
	Alcohol and tobacco	Recreation	Miscellaneous
Income	0.000548 (0.0511)*	0.020 (0.000)***	0.011 (0.000)***
Urbanisation	0.006897 (0.000)***	-0.002** (0.010)	-0.001 (0.396)
Age	-5.1E-05 (0.119)	0.000 (0.000)***	0.000 (0.000)***
Household size	-0.00172 (0.000)***	-0.010 (0.000)***	0.009 (0.000)***
Gender	-0.01273 (0.000)***	-0.004 (0.001)***	0.009 (0.001)***
Marital status	0.0098 (0.000)***	0.001 (0.574)	-0.011 (0.000)***
Education level	-0.01038 (0.000)***	0.000 (0.599)	0.003 (0.007)***
Constanta (constant)	0.039926 (0.000)***	-0.103 (0.000)***	-0.008 (0.242)
R ² (R-squared)		0.075	0.077
Adjusted R ²	(Pseudo R ²) -0.0122	0.075	0.077

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

Table 4 shows the regression result of the B40 household consumption pattern. Household income positively affects the consumption pattern of every expenditure group, indicating that increasing income will increase B40 household consumption pattern (Lima et al. 2018). This aligns with findings on research by (Jamasp & Meier 2010); (Domínguez-Amarillo et al. 2020) where income significantly affects low-income housing energy expenses. When it comes to value, households with higher incomes will have a greater amount, but when it comes to proportion, households with lower incomes will have a higher proportion on food and other necessities (Kirkpatrick & Tarasuk 2003); (Levell & Oldfield 2011). Given the influence degree that income has on expenditures varies greatly across different income groups of households, a policy that affects expenditures on necessities such as housing expenditures is suggested not to treat all households in the same approach (Jamasp & Meier 2010); (Kambule et al. 2019). Low-income household expenditure is proportionately high on basic needs and less on non-basic needs (Latimaha et al. 2017); (Kambule et al. 2019). Non-necessities expenditure as leisure and tourism is found to be proportionately less in low-income group (Lima et al. 2018). Another interesting finding is low-income households rather increase cigarette expenditure and trade it with necessity goods like food (Joung & Min 2021b).

Urbanisation is also found to significantly affect all group consumption patterns except for health and communication. This is consistent with the results of the study by (Lima et al. 2018)); Jamasp & Meier (2010) that discovered low-income households staying in rural areas experienced high amounts of energy expenditure and recreation expenditure (Lima et al. 2018). Based on descriptive analysis of household mean expenditure in this research, urban household consumption was higher than rural on food, transport, equipment and alcohol and tobacco expenses, but for housing and recreational, low-income rural households recorded higher consumption patterns.

Household size negatively affects housing consumption, transportation, health, communications, equipment, restaurants and hotels, alcohol and tobacco, recreation and culture and miscellaneous expenditures. This indicates that households with large households in the B40 group have experienced an imbalance in consumption whereas the size of a household grows bigger, consumption of such items will get smaller. Research by Jamasp & Meier (2010); (Ward et al. 2013); (Lima et al. 2018) discovered that low-income households with a greater number of kids significantly experienced high amounts of energy and food expenditure. Low-income households give more focus on necessities and tend to neglect non-necessities goods and services (Jamasp & Meier 2010).

Household head gender is also found to be significantly affecting household consumption patterns. Households with male leaders have a higher consumption of food, housing, clothing, and equipment but females significantly have higher transport and miscellaneous expenditure expenses. There is a significant difference in household consumption patterns headed by men and women urge for consumption pattern analysis considering gender on household consumption pattern (Lino et al. 2017). Clearly, the priorities of male are different from those of female households that need attention.

Findings from the regression analysis indicated that marital status has a significant effect on household consumption patterns. Married members spent more on housing, communications, alcohol, and cigarettes. This is consistent with Domínguez-Amarillo et al. (2020) who discovered that widowers who were household heads tend to have lower housing expenditure compared to married couples. Low-income married couples however spend more on housing than ordinary widows (Domínguez-Amarillo et al. 2020). The fact that married couples commonly have children, their preferred consumption of cigarettes and alcohol is disturbing given the negative impact on their health as well as the family financial resources.

Non-elderly households spend much more on food, housing, health care, communication, and equipment than households with elderly occupants. Heads of elderly households exert a substantial influence on spending for housing since they spend negligible amount on this (Domínguez-Amarillo et al. 2020 ; Jamasb & Meier 2010). The elderly in the low-income group spends less on food which is consistent with findings by Ward et al. (2013). They also discovered that households with elderly head occupy the bottom rung of social welfare followed by those headed by single parents and single persons.

Homeowners spend more than renters on education, communication, alcohol, cigarettes, and other commodities. However, they spend less on food, housing, transportation, and health. Renters and homeowners

have distinct priorities that clearly differentiate between them. Homeowners are likely to face financial constraints and have to make compensatory sacrifices elsewhere. According to (Kirkpatrick & Tarasuk 2003), housing ownership increases the burden of low-income household expenditure. It is clear that housing ownership significantly influenced housing expenditure for low-income households as subsequently supported by Jamasb & Meier (2010). Lima et al. (2018) further established that expenditure on housing energy consumption and recreation was significantly affected by ownership status in low-income households.

Household age was positively associated with housing, health, education, restaurant, and hotel expenditures. It also significantly affected low-income household expenditure. As the household leader gets older, consumption patterns become proportionately smaller (Lima et al. 2018; Domínguez-Amarillo et al. 2020).

The findings on B40 household consumption patterns established that the household expenditures are focused on food items, housing, and transport which can be regarded as be basic needs. Restaurant and hotel expenditures, also known as FAFH, constitute a large portion. By comparison the standard consumption pattern of a Malaysian household showed that other categories of expenditures did not record significant amounts or were much lower than expected. The imbalance that occurs is clearly focused on spending for basic necessities. The B40 household also reported lower mean expenditure than the Malaysian standard thus indicating the enforced thriftiness of the poorer consumers. The elderly B40 households, similarly focused their expenditures on food, housing and transport. Renters, on the other hand, face relatively high housing costs and are comparable to homeowners. This study verified that B40 households generally spend less than the standard Malaysian family. Urban and rural households, large households, households with female or male leaders, and renters as opposed to homeowners also showed different spending patterns.

TABLE 4. Factors of B40 household consumption pattern

Socioeconomic and demographic factors	Expenditure group		
	Food	Housing	Transportation
Income	0.528*** (0.000)	0.548*** (0.000)	0.637*** (0.000)
Urbanisation	0.127*** (0.000)	-0.225*** (0.000)	0.057*** (0.000)
Household size	0.192*** (0.000)	-0.063*** (0.000)	-0.050*** (0.000)
Gender	0.066*** (0.000)	0.032*** (0.003)	-0.075*** (0.000)
Marital status	-0.130*** (0.000)	0.043*** (0.000)	-0.068*** (0.000)
Elderly	-0.029*** (0.079)	-0.047*** (0.005)	0.013 (0.4280)
Housing status	-0.065*** (0.000)	-0.096*** (0.000)	-0.024** (0.023)
Age	0.033*** (0.049)	0.029* (0.096)	-0.079*** (0.000)
n=	6612	6614	6387
Adjusted R ²	0.404	0.388	0.430

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

Socioeconomic and demographic factors	Expenditure group		
	Health	Education	Clothing
Income	0.314*** (0.000)	0.293*** (0.000)	0.463*** (0.000)
Urbanisation	-0.020 (0.134)	-0.053*** (0.008)	0.014 (0.197)
Household size	-0.164*** (0.000)	0.003 (0.861)	0.183*** (0.000)
Gender	0.017 (0.233)	0.024 (0.272)	0.047*** (0.000)
Marital status	0.014 (0.342)	0.002 (0.915)	-0.016 (0.195)
Elderly	-0.064* (0.003)	0.064** (0.018)	0.046** (0.010)
Housing status	-0.044*** (0.001)	0.079*** (0.000)	0.002 (0.834)
Age	0.061*** (0.006)	0.061** (0.027)	-0.056*** (0.002)
n=	5856	2605	6609
Adjusted R ²	0.121	0.104	0.313

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

Socioeconomic and demographic factors	Expenditure group		
	Communication	Equipment	Restaurant & Hotel
Income	0.529*** (0.000)	0.484*** (0.000)	0.052*** (0.000)
Urbanisation	-0.015 (0.188)	0.055*** (0.000)	-0.003 (0.829)
Household size	-0.041*** (0.001)	-0.089*** (0.000)	-0.031** (0.028)
Gender	-0.006 (0.6040)	0.048*** (0.000)	-0.007 (0.636)
Marital status	0.035*** (0.007)	-0.038*** (0.005)	0.011 (0.474)
Elderly	-0.035 (0.056)**	-0.056*** (0.003)	0.028 (0.191)
Housing status	0.048*** (0.000)	0.003 (0.808)	0.017 (0.205)
Age	-0.091*** (0.000)	-0.005 (0.785)	0.050** (0.023)
n=	6362	6603	6675
Adjusted R ²	0.284	0.212	0.003

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

Socioeconomic and demographic factors	Expenditure group		
	Alcohol & Tobacco	Recreation	Miscellaneous
Income	0.346*** (0.000)	0.431*** (0.000)	0.526*** (0.000)
Urbanisation	0.119*** (0.000)	-0.046*** (0.000)	-0.003 (0.764)
Household size	-0.106*** (0.000)	-0.125*** (0.000)	0.100*** (0.000)
Gender	-0.097*** (0.000)	-0.020 (0.145)	0.050*** (0.000)
Marital status	0.048*** (0.006)	-0.005 (0.742)	-0.092*** (0.000)
Elderly	0.024 (0.342)	-0.018 (0.386)	-0.012 (0.486)
Housing status	0.050*** (0.002)	-0.014 (0.292)	0.031*** (0.004)
Age	-0.026 (0.314)	0.054** (0.010)	-0.163*** (0.000)
n=	3894	5724	6577
Adjusted R ²	0.118	0.794	0.386

Note: Note: *, ** and *** $\rho < 0.10$ $\rho < 0.05$ $\rho < 0.01$

CONCLUSION

The purpose of this research is to examine and evaluate the consumption pattern of B40 households. The study discovered that socioeconomic and demographic characteristics influenced and impacted expenditure patterns of B40 households. The degree of the influence varies, but any change in socioeconomic and demographic parameters may serve as an indicator of B40 household expenditure patterns and consequently signify the level of welfare experienced. With the present condition of rapid economic growth it is clear that urbanization stamps an impact on B40 household consumption patterns, particularly on food, housing, and transportation. Urbanization will raise the proportion of these expenditure categories, which may become the major cause for rising cost of living in B40 households, particularly those in the urban areas. Further, with the number of elderly citizens increasing nationwide, the growth of impoverished elderly households are becoming a major concern. Spending capacity becomes greatly diminished in B40 families headed by the elderly thus the likelihood of a household led by them will likewise be reduced. It is clear that the elderly status creates a substantial impact on household spending patterns. It is suggested that more in-depth studies on ageing households, particularly those among the B40 and the poor, need to be undertaken. It is well known that B40 households have low incomes and a limited capacity to face issues caused by the growing cost of living thus posing a major threat to the wellbeing of the poor. Since household income influences expenditure it may also affect household economic activities. This should motivate policymakers and researchers to pay close attention to the inequality in consumption patterns between urban and rural households, men and women, unmarried and married, and the elderly and non-elderly household heads, generated by the inequalities and the influence of socioeconomic and demographic factors. The study proposes that future researchers concentrate on the issues of household consumption patterns of the elderly owing to the deteriorating effect of ageing household leadership and the growing gap in consumption level compared to the Malaysian average. The worsening consumption patterns of the ageing Malaysian, in a rapidly greying nation, spells a major future challenge to the wellbeing of the national economy.

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