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FACTORS CONTRIBUTING TO THE RISING COST OF LIVING FOR GROUP M40 IN MALAYSIA

(Faktor Kenaikan Kos Sara Hidup Golongan M40 di Malaysia)

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ABSTRACT

The rising cost of living is an increasingly pressing issue for every household in Malaysia. The middle-income group (M40) is also affected by the growing culture of indebtedness among them. This study examines the causes of the increased cost of living for this group based on two main factors: inflation and spending patterns. The trend in income growth and inflation is also observed and compared from year to year. This study found that inflation or the increase in prices of goods is almost always higher than income growth, making it difficult for the earned income to cover the cost of living. Meanwhile, for spending patterns, multiple regression analysis is conducted to identify the relationship between the demographic of M40 households and essential spending on food, transportation, and housing. The demographic factors considered are monthly income, household size, urban or rural location, and state. The relationship of the log-log linear regression model between spending and income indirectly illustrates the rigidity of essential spending for this group in relation to their income. Additionally, the rigidity of spending for all three essential items are normal. Household size, urban location, and state do not show a high regression factor, thus not significantly affecting their cost of living. Therefore, inflation was found to have a greater impact on the cost of living for the M40 group than their spending patterns.

Keywords: middle-income group; M40; cost of living; factors; inflation; spending patterns

ABSTRAK

Kos sara hidup merupakan isu yang semakin merunsingkan setiap ahli isi rumah di Malaysia. Golongan yang berpendapatan sederhana (M40) turut terkesan sehingga meningkatkan budaya berhutang di kalangan mereka. Kajian ini meneliti punca kepada peningkatan kos sara hidup golongan ini berdasarkan dua faktor utama iaitu inflasi dan juga corak perbelanjaan. Tren pertumbuhan pendapatan dan juga inflasi dilihat dan dibandingkan dari tahun ke tahun. Hasil kajian ini mendapati inflasi atau kenaikan harga barang hampir sentiasa lebih tinggi berbanding pertumbuhan pendapatan yang menyebabkan gaji yang diperoleh sukar untuk menampung kos sara hidup. Sementara itu, bagi corak perbelanjaan, analisis regresi berganda dilakukan bagi mengenal pasti hubungan demografi isi rumah M40 dengan perbelanjaan keperluan asas iaitu makanan, pengangkutan dan juga perumahan. Faktor demografi yang diambil kira adalah pendapatan bulanan, saiz isi rumah, lokasi bandar atau luar bandar dan juga negeri. Hubungan model regresi linear log-log di antara perbelanjaan dan juga pendapatan secara tidak langsung menggambar keanjalan perbelanjaan keperluan bagi golongan ini terhadap pendapatan mereka. Hasil kajian ini mendapati, keanjalan perbelanjaan bagi ketiga-tiga barangan keperluan asas adalah normal. Faktor saiz isi rumah, lokasi bandar dan juga negeri tidak menunjukkan hubungan koefisisen regresi yang tinggi dan tidak memberi kesan kepada kos sara hidup mereka. Oleh itu, inflasi telah mempengaruhi kos sara hidup golongan M40 berbanding corak perbelanjaan mereka

Kata kunci: golongan berpendapatan sederhana; M40; kos sara hidup; faktor; inflasi; corak perbelanjaan

1. Introduction

Cost of living according to Bank Negara Malaysia (2016) is the total expenditure on goods and services by a household, including financial expenses, to maintain a certain standard of living. The M40 group, households with incomes between RM4,850-RM10,959, are significantly affected by the rising cost of living besides the B40 group (Wahab *et al.* 2018). Additionally, according to the Department of Statistics Malaysia (2021), the majority of M40 (83%) reside in urban areas, making it more challenging for them to afford living expenses. Based on the report by Bank Negara Malaysia (2016), the cost of living is generally related to inflation and spending patterns. Inflation is the phenomenon of rising prices of goods over a period, while the inflation rate is the percentage used as a measure of the increase in these prices (iMoney 2013).

The rising inflation rate faster than the growth rate of income will cause pressure on the cost of living (Wahab *et al.* 2018). For example, after the COVID-19 pandemic, there was an increase in global inflation by 7.5% (Binici *et al.* 2022). However, industries are still reducing labor force, causing global unemployment to remain at a high level. This situation has added pressure to the cost of living for people worldwide. Furthermore, spending patterns also serve as a measure of an individual's spending habits. According to Wahab *et al.* (2018), there are three basic components in household spending, which are categorized as essential goods, including food, transportation, and housing. This category also contributes significantly to the household spending in the calculation of Gross Domestic Product (GDP). According to Tan Sri Noor Azlan Ghazali, who is an expert at the Economic Action Council (MTE), 70% of Malaysian household spending is influenced by these three types of goods. This is significant in describing the current cost of living issue in the country (Husin 2022).

Eighty-three percent of the 2.91 million M40 households reside in urban areas (Department of Statistics Malaysia 2021). Therefore, the issue of homeownership in major urban areas like Kuala Lumpur, Selangor, Penang, and Johor poses a challenge for the M40 group in line with the rising cost of living. According to the Jabatan Perumahan Negara (2019), from 2016 to 2017, 35% of households in Malaysia could afford homes priced up to RM250,000. However, only 24% of new housing launches were priced below RM250,000. This indicates a limited number of affordable housing units available. Apart from limited units, the M40 income class also faces difficulties in qualifying for assistance. Based on the Budget 2023 (Ministry of Finance 2023), among the affordable housing assistance provided by the government, only a few are eligible for middle-income families, such as the People's Ideal Home (RIR) with a maximum estimated price of RM350,000. This differs from the assistance programs available for the B40 group, such as the Housing Loan Scheme (SPP), MyHome Scheme, People's Housing Program (PPR), and Transit Homes.

The difficulty in owning basic necessities has also increased the culture of borrowing within this group. According to the UKM Pakarunding (2016), the Credit Counseling and Debt Management Agency (AKPK) revealed that the group of households most in debt and at risk of credit problems is the M40 group. This spending pattern has the potential to increase household spending relative to income, indicating that their spending increases more rapidly than income growth. If housing costs in urban areas along with overall household expenses continue to exceed the income capacity of the M40 group, it will lead them to fall into the urban poor category.

In addition to housing expenses, food expenditure is also a challenge for the moderate-income group. The expenditure rigidity for food among the B40 group is lower (0.679729) compared to the M40 group (1.102736) residing in urban areas in 2014 (Wahab *et al.* 2018). This expenditure rigidity indicates that the cost of living pressure for food expenses is higher

for the M40 group compared to the B40 group. Wahab *et al.* (2018) suggested that this situation may stem from better financial planning by the B40 group compared to the M40 group following raw material price increases. Government assistance diversity such as 1Malaysia People's Shop (KR1M), Farmers' Market, and MyFarm Outlet should be able to help both groups in managing food expenses. However, factors like exposure and the M40 group's preference for quality and healthy goods are higher.

Therefore, the M40 group has been proven to be significantly affected by the cost of living issue. The study was conducted to compare the growth rate of M40 income with the increase in inflation rate and to identify the spending patterns of M40 households through the construction of a multiple regression model. As a result, the main causes of the rising cost of living for the M40 group in Malaysia can be identified based on two main factors, namely inflation and spending patterns. If the growth rate of inflation increases more rapidly than the growth rate of M40 income, the increase in the cost of goods becomes the cause of the cost of living pressure for this group. For the spending pattern factor, the elasticity of expenditure on essential goods exceeding 1.0% indicates that the increase in the cost of living for the M40 group is due to individual spending habits. Apart from income, other demographic factors such as household size, state, and urban or rural areas also play a significant role in monthly essential expenditure. The findings of this study can help the public and the government understand the causes of the rising cost of living for the M40 group and find appropriate assistance or solutions to reduce the cost of living pressure in the future as the economy transitions.

This study used gross income data based on the Household Income Survey (HIS) for the years 2007, 2009, 2012, 2014, 2016, and 2019 obtained from the Department of Statistics Malaysia (DOSM). To compare the growth rate of income and inflation rate, inflation data was obtained from the World Bank data starting from the year 2007 until 2019. For expenditure data, the latest Household Expenditure Survey (HES) data for the year 2019 is used. Among the information used are household income, state, urban or rural areas, number of households, number of expenditures, and expenditure items.

The HES data was collected through survey methods (primary data) by the Department of Statistics Malaysia from 16 states and territories of Malaysia. The urban and rural locations of each state are also specified. For expenditure items, the data provided is based on the Classification of Individual Consumption According to Purpose (COICOP). However, for this study, expenditure data will be divided into three main categories: food, transportation, and housing, which are essential components of household spending categorized as necessities (Wahab *et al.* 2018).

2. Literature Review

2.1. *Factors contributing to the rising cost of living for middle-income families*

2.1.1. *Inflation*

Inflation is usually measured using the change in the Consumer Price Index (CPI) which reflects the average price of a basket of goods and services in a country (Bank Negara Malaysia 2016). Therefore, there is an assumption that the spending patterns of each household are similar and the quality of products and services offered is the same. If the spending patterns of households are not significantly different within a study, inflation can become a major factor in the current cost of living pressure (Bank Negara Malaysia 2016).

Furthermore, based on consumer purchasing power, an increase in the inflation rate will only have a significant impact on the cost of living for the people if it aligns with the income

growth rate (Oner n.d.). A study conducted by Latimaha *et al.* (2018) supported this statement by finding that inflation was a cause of the rising cost of living for the M40 group residing in major cities like Kuala Lumpur, Johor Bahru, and George Town. The sudden and faster increase in prices compared to income growth has made it difficult for them to afford living expenses. Additionally, according to real estate consultant Izrul Hanafiah reported by Husin (2022), housing prices in major urban areas are soaring. A study by Abidin (2021) also indicates that rising house prices and a shortage of affordable housing units expose the M40 group to urban poverty risks. Moreover, excessively high loan interest rates make this group particularly vulnerable to credit or debt issues.

The issue of rising prices is not only felt by Malaysians but also globally. For instance, the United States recorded the highest inflation rate of 9.1% in 2022 compared to the previous year (O'Brien 2022). This has had a significant impact, especially on those with low to moderate incomes. According to the US Census Bureau (USCB), half of the households fall into the moderate-income group, earning between $47,189 and $141,568 annually (McNair 2023). The increase in prices, especially for essential goods, has forced them to abruptly change their spending patterns. McNair (2023) reported that, 54% of moderate-income households reduced driving time, 49% cut back on grocery purchases, and 45% decreased housing expenses. These three aspects of essential goods have become the primary focus for this group in their efforts to control spending.

According to O'Brien (2022), the income growth rate in that year was 5.1% and failed to keep up with the rising prices in the United States. Based on USCB, the cost of living for this group has increased by 25% more than the income growth rate from 1990 to 2019 (McNair 2023). The real wage growth rate issue is also a global issue faced by high-income countries like Japan, Italy, and Spain (Bucholz 2023). In the United States, statistics show that low to moderate-income groups have experienced very low real wage growth compared to high-income groups with a difference of 11% to 12% (Desilver 2018). This situation indicates a large income gap and is a sign of economic instability. Therefore, when analyzing inflation as a factor in rising living costs, comparing it with income growth rate can illustrate the level of pressure currently faced.

2.1.2. *Spending patterns*

a. *Standard of Living*

In addition to inflation, in the context of the cost of living, spending patterns are also a crucial aspect focused on the differences in each household's choices of goods and services. If there are significant differences in household spending patterns, inflation becomes a weak indicator of the cost of living increase (Bank Negara Malaysia 2016). Conversely, changes in a household's spending pattern are driven by an increase in living standards. Based on the definition of the cost of living, the standard of living becomes a determinant of household or individual expenditure. The standard of living, by definition, is a measure of the quality of life or the desired level of well-being by individuals (Bank Negara Malaysia 2016). A study by Latimaha *et al.* (2020) using the Granger Causality method revealed a high correlation (0.907) between the cost of living and the standard of living. This proves that the standard of living is a significant factor in the increase in the cost of living for the people in Malaysia.

The study by Wahab *et al.* (2018) supports the findings of Latimaha *et al.* (2020). They used multiple regression analysis to identify the changes in the standard of living's impact on essential goods for each income class of households from each state. Through this method, the elasticity of expenditure, which is the relationship between log-log changes in expenditure

and income, represents the spending pattern for their study group. The elasticity of expenditure value then becomes a guide to the standard of living situation of a household, indicating the level of need for goods that are spent with the income earned. According to their study, the middle-income group (M40) in Malaysia was found to have the highest overall expenditure elasticity (1.0034) compared to the B40 and T20. Additionally, the expenditure elasticity for housing goods (1.0708) and food (1.1374) also showed high values. This indicates an increase in the standard of living for the M40 group, as theoretically, essential goods should only have a low expenditure elasticity (0% to 1%). According to Wahab *et al.* (2018), the increase in the standard of living for the M40 group is due to their needs and desire to own higher quality goods, which has led them to increase their spending.

In addition to basic necessities, this M40 group also experiences an increase in their standard of living in goods and services such as healthcare and education. Due to the spread of COVID-19, some items that were previously considered luxuries, like face masks, have become necessities at the beginning of its spread. Heightened awareness of the quality of healthcare goods and services obtained further increases the cost of living for this group. Additionally, Pearson *et al.* (2019) predicted that by the year 2029, the United States will have 14.4 million elderly citizens classified as middle-income. 60% of them will have difficulty walking, and 20% will require high levels of healthcare assistance. The need for healthcare goods will also add pressure to their cost of living.

In the aspect of education, the closure of educational institutions during the pandemic has indirectly improved the quality of life for some individuals still undergoing the learning process. For instance, owning a fast internet connection and devices like computers had become a necessity to ensure smooth online learning. Despite limited income allocation for basic necessities among those with moderate incomes, awareness of the importance of education has prompted them to allocate part of their expenses for learning purposes. A study by Napolitano *et al.* (2014) revealed that over 90% of low-income families in Philadelphia wish for their children to continue learning despite unfavorable financial situations and assistance. Therefore, when examining the cost of living issue, the desired standard of living serves as an indicator of the spending patterns within a household.

b. *Household Size*

Household size is also a significant determinant of spending patterns and cost of living borne by a group (Mok *et al.* 2007; Latimaha *et al.* 2018). In Malaysia, the average household size is 3.9 people with 54 percent of households having four or more members (DOSM 2020). Kuala Lumpur has the lowest average household size of 3.3 people per household. The relationship between household size and cost of living has been studied by Wahab *et al.* (2018) using multiple regression analysis. They found that larger households lead to higher expenditures. Furthermore, according to DOSM, one of the factors contributing to poverty in Malaysia is the size of households, with statistics in 2019 showing that 70.4 percent of poor households have more than four members. Therefore, this explains the shortcomings in government assistance through income classes as the varying household sizes for each income group are not taken into account.

Similar to the United States, the definition of moderate-income households is further detailed with information on location and household size (Frankenfield 2023). This classification is seen as more effective in identifying their household financial situation. Furthermore, the challenges faced by the M40 group in Malaysia are even more evident when the majority of them reside in urban areas. Higher housing, food, and transportation costs

drive them to increase spending according to their household size needs. Latimaha *et al.* (2020) conducted a study focusing on moderate-income households residing in three major cities: Kuala Lumpur, Johor Baharu, and George Town. They found that household size is one of the main factors contributing to the rise in the cost of living for their study group. Therefore, to ensure that household spending patterns are examined from all aspects, household size needs to be studied to determine if it is a primary cause of the cost of living pressures they face.

c. *Location*

Hatta and Ali (2013) emphasized that state location is significant in determining household spending patterns because each state has a different definition of poverty. Policies on price setting also vary, especially between Peninsular Malaysia and Sabah and Sarawak. This is supported by Mok *et al.* (2007) which highlighted the importance of demographic factors such as household size and the state where one lives in the issue of cost of living. According to Mok *et al.* (2007), income differences do not always indicate the ability to cope with rising cost of living, because the cost of living varies depending on demographic characteristics. In addition to state location, urban and rural areas also influence the cost of living for a household.

According to DOSM (2020), the high urbanization rate or transition from rural to urban areas (76.2 percent) in Malaysia is one of the causes of the rising cost of living. With the majority of the M40 group living in urban areas, the cost of living for this group has increased. Issues such as affordable housing and food expenses are frequently raised problems. For this group, income factors have led to difficulties in loan applications, thereby making it challenging to own a house in urban areas (Abidin 2021). In terms of location, the government is more meticulous in classifying income groups. The M40 group residing in urban areas need to earn between RM5,440 and RM11,849 per month to be categorized as moderate-income earners (DOSM 2020). Similarly, concerning states, the M40 group living in Selangor, Kuala Lumpur, and Putrajaya have higher gross monthly income thresholds compared to other states. This difference further emphasizes that location factors should be considered in analyzing spending patterns regarding the cost of living issue.

3. Methodology

Inflation's data is obtained from the World Bank for the years 2007 to 2019. The percentage inflation rate used is based on the growth of the Consumer Price Index (CPI). The Consumer Price Index is one of the common inflation indicators based on the "basket" of goods and services used by households in a country (Bank Negara Malaysia 2016). The formula for the inflation rate based on CPI is as follows

$$\text{Inflation} = \frac{\text{CPI}_{t1} - \text{CPI}_{t0}}{\text{CPI}_{t0}}. \quad (1)$$

The average gross income data for the M40 group for the years 2007, 2009, 2012, 2014, 2016, and 2019 is obtained from the Household Income Survey (HIS) data. In this study, the percentage growth of average income is compared with the percentage increase in the inflation rate to identify whether CPI increases are a significant factor in the rising cost of living for the M40 group. Therefore, the growth value of average income by year for the M40 group is calculated using the following formula (Chen 2023)

$$\text{Growth Rate} = \frac{\text{Income}_{t1} - \text{Income}_{t0}}{\text{Income}_{t0}}. \quad (2)$$

Multiple regression analysis is used to identify the relationship between dependent variables and several independent variables. In this study, three multiple linear regression models will be constructed to identify the relationship between average total expenditure, food, transportation, and housing with demographic factors for the M40 group. Several significant demographic factors affecting the cost of living for the M40 group are used as independent variables to determine the level of expenditure for this group.

Among these factors are monthly gross income, household size, state location, urban and rural areas. The regression coefficients of each independent variable will depict the influence value on expenditure changes. A log-log transformation is also done to remove the outliers based on box-plot test. According to Wahab *et al.* (2018), the regression coefficients between income variables and expenditures that have undergone indirect transformation of log-log can explain the concept of expenditure elasticity.

For multiple regression analysis, the data must meet four key assumptions (UCLA n.d.). Diagnostic tests, including linearity, normality, homoscedasticity, and multicollinearity tests, will be used to check these assumptions. Linearity is assessed with scatter plots of residuals versus predicted values, where a random scatter indicates a linear relationship between the independent and dependent variables.

Homoscedasticity is verified by examining the variance's consistency using the same scatter plot. A random scatter indicates constant variance. Additionally, a P-P plot of cumulative distribution functions (CDF) between residuals and expected values will be used. A diagonal line in this plot suggests that the assumption of constant variance is met (UCLA n.d.).

Normality is tested using the P-P plot of residuals against expected values. If the plot forms a diagonal line, it indicates that residuals are normally distributed, satisfying the normality assumption. Multicollinearity is checked with the Variance Inflation Factor (VIF). A VIF value around 1 indicates no significant correlation between independent variables, fulfilling the multicollinearity assumption (UCLA n.d.).

Log-log relation that shows the elasticity of expenditure relative to high income for necessities highlights improvements in living standards. Typically, a 1% increase in income results in a 0% - 1% increase in necessary expenditures. If the increase in necessary expenditures exceeds 1% with a 1% rise in income, it suggests indulgence in luxury spending, assuming prices remain constant. The three multiple regression models to be constructed will provide detailed insights into these relationships, given as

$$\begin{aligned}
\log(M) &= \beta_0 + \beta_1 \log(P) + \beta_2 S + \beta_3 L + \beta_4 NA + \cdots + \beta_{17} NN + \varepsilon, \\
\log(G) &= \beta_0 + \beta_1 \log(P) + \beta_2 S + \beta_3 L + \beta_4 NA + \cdots + \beta_{17} NN + \varepsilon, \\
\log(R) &= \beta_0 + \beta_1 \log(P) + \beta_2 S + \beta_3 L + \beta_4 NA + \cdots + \beta_{17} NN + \varepsilon,
\end{aligned} \quad (3)$$

where

M = average monthly food expenditure for group M40,
G = average monthly transportation expenditure for group M40,

R = average monthly housing expenditure for group M40,
P = gross monthly income of group M40,
S = household size for group M40,
L = urban or rural area,
$NA \ldots NN$ = 16 states in Malaysia,
ε = error.

4. Result and Discussion

Table 1 contains the average monthly gross income and percentage growth of average monthly gross income for the M40 group from 2007 to 2019. Based on the table, Figure 1 is constructed to compare the growth of income and inflation rates for the years 2007 to 2019. The comparison can provide insights into whether the cost of living pressure faced by the M40 group is due to price increases or not (Wahab *et al.* 2018). The inflation rate measured based on the Consumer Price Index (CPI) for the years 2007 to 2019 has shown a consistently higher increase compared to the rate of income growth. This suggests that the cost of living pressure faced by the M40 group during these years was due to price increases.

The highest inflation rate was recorded in 2017 at 3.87 percent compared to the income growth rate. According to the report by Berita Harian (2018), the price increase in essential goods during 2017 was due to the increase in petrol prices and the shortage of supplies. Additionally, the lowest income growth rate was recorded in 2014 at 0.2 percent, while the inflation rate was 3.14 percent. This was due to stable wage increases that were able to handle the cost of living issues. According to Bank Negara Malaysia (2015), although the inflation rate increased more significantly in 2014, government assistance targeted at low and moderate-income groups provided support for household spending. This has explained the trend of income growth and inflation rates shown in Figure 1.

In only two years, 2010 and 2019, the income growth rate for Group M40 exceeded the inflation rate. This is due to factors such as economic growth, inflation control and the renewed income distribution policies. In 2010, the inflation rate in Malaysia was relatively controlled partly due to effective monetary policies by Bank Negara Malaysia. The central bank's measures to manage inflation, including interest rate adjustments which helped maintain a stable economic environment, allowing income growth to outpace inflation (World Bank 2023). Meanwhile in 2019, Malaysia have experienced steady economic growth, which contribute to rising incomes. The government implemented several initiatives to stimulate economic development and increase household incomes, particularly for the M40 group, which represents the middle 40% of income earners. This included investments in infrastructure, education, and technology, which helped boost productivity and, consequently, income (Rameli & Salleh. 2023).

In general, the rate of price change has increased more significantly compared to the rate of income growth, causing the income received by the M40 group to not be able to keep up with household spending. However, the inflation rate measured based on the CPI has an assumption that every household has the same spending pattern. This is because the CPI does not take into account demographic and geographic aspects that are typically significant in determining household spending patterns (Bank Negara Malaysia 2016). Therefore, a spending pattern that takes into account all aspects should be studied to understand the impact on the cost of living for this group.

Table 1: Growth average gross income of M40

Year	2007-2009		2009-2012		2012-2014		2014-2016		2016-2019	
		Δ%		Δ%		Δ%		Δ%		Δ%
	6930.29	2.14	7075.72	2.10	7090.16	0.20	7156.65	0.94	7267.41	1.55

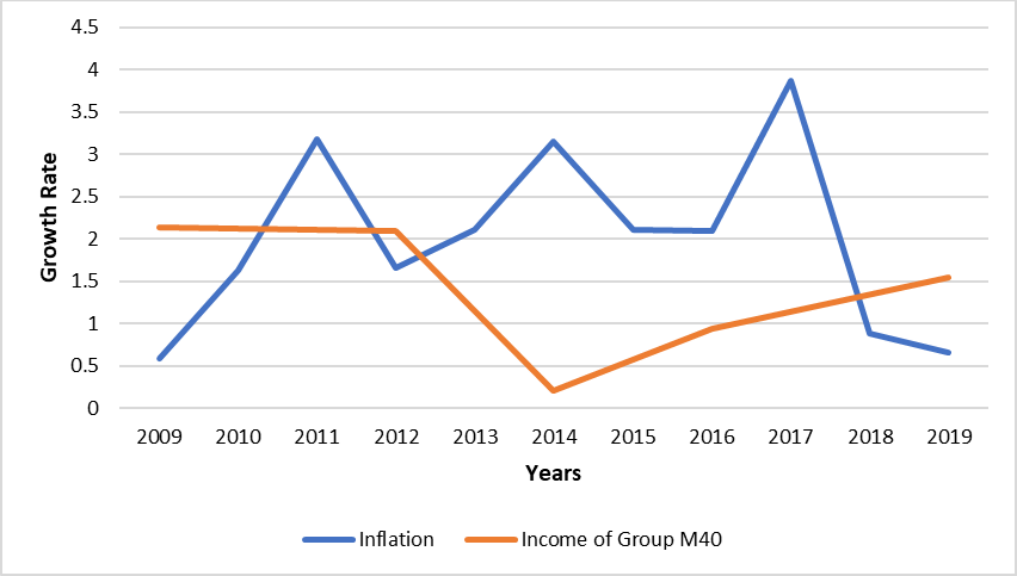

Figure 1: Growth of monthly gross income of M40 and inflation rate

The formula for the first model, with the dependent variable being the monthly food expenditure of the M40 group in Malaysia, is as follows

$$\log(M) = 1.738 + 0.074\ \log(P) + 0.036\ S - 0.082\ L + 0.056N\ , \qquad (4)$$

where

M = average monthly food expenditure of M40 households,
P = monthly gross income of M40 households,
S = household size of group M40,
L = rural location,
N = states with high average monthly expenditures (Johor, Melaka, Pulau Pinang, Selangor, W.P. Kuala Lumpur, W.P. Putrajaya).

According to the model in Eq. (4), in 2019, the monthly food expenditure of the M40 group was influenced by monthly gross income by 0.074%. The log-log relationship between expenditure and income indirectly illustrates the elasticity of expenditure to income for this group. An elasticity of expenditure below 1.0% is considered stable or at a normal level, indicating no improvement in living standards regarding food items (Wahab *et al.* 2018). This may be due to high price increases or inflation in that year that prevented this group from extravagantly spending on food items.

Furthermore, the log-linear relationship between food expenditure and independent variables such as household size, rural location, and specific states each depicts the

percentage change in food expenditure with a one-unit change in the independent variable. Therefore, in 2019, household size affected a 0.036% increase in food expenditure for every one person increase. An increase in household size typically requires more allocation for necessary items, especially food. Rural location and states also influence their food expenditures. Rural locations were observed to affect M40 group's food expenditure by 0.082% less than those living in urban areas. This is supported by past studies like Wahab *et al.* (2018), indicated that rural residents can easily cultivate raw materials like vegetables and livestock themselves and government aid programs have helped control their food expenses (Bernama 2022).

Regarding states, the M40 group residing in Johor, Melaka, Pulau Pinang, Selangor, W.P. Kuala Lumpur and W.P. Putrajaya have been classsified into one group as a dummy variable 1 to increase the R^2 values of the regression models. The classification is done according to the level of their average monthly household expenditure (DOSM 2020). Based on Eq. (5), these states were found to spend 0.056% higher compared to those living in other states. This finding aligns with the DOSM (2020) which noted these six states had high average monthly household expenditures. Next is the analysis for transportation expenditure. The result for the second model is as follow

$$\log(G) = 0.16 + 0.462\ \log(P) + 0.01\ S - 0.144\ L + 0.02\ N\ , \tag{5}$$

where G is the average monthly transportation expenditure of M40 households.

For transportation expenditure, the influence of income on these goods also shows a low percentage at 0.462%. The stable elasticity of expenditure indicates no significant improvement in living standards for the M40 group regarding transportation goods or services. This could be due to a high percentage (83%) of the M40 group residing in urban areas preferring public transportation like MRT, LRT, and buses to avoid traffic congestion (Wahab *et al.* 2018). This indirectly controls their transportation expenses and shows no extravagant spending or improvement in living standards. Additionally, household size affects transportation expenditure by 0.01%. This suggests that household size influences food expenditure more than transportation expenditure in 2019. Controlling expenses on transportation goods or services compared to food is reasonable with an increase of one unit in household size. Furthermore, rural location influences transportation expenditures compared to urban areas with a difference of 0.144%. This indicates that overall M40 households residing in urban areas allocate more towards transportation goods or services compared to rural areas. For state factors, six states with high average expenditures also recorded a positive relationship with transportation expenditures at 0.02% compared to other states.

Lastly is the analysis for housing expenditure. The formula for the third model is as follow

$$\log(R) = -0.065 + 0.388\ \log(P) - 0.199\ L - 0.033\ N\ , \tag{6}$$

where R is the average monthly housing expenditure of M40 households.

The elasticity of housing expenditure to income for the M40 group also remains stable at 0.388%. It is evident that there was no significant improvement in living standards for all three necessary expenditures of the M40 group in 2019. This also suggests that during that year, changes in living standards were not a significant factor contributing to the increased

cost of living for the M40 group. In other words, M40 households spent prudently on necessary items rather than extravagantly on housing goods. Moreover, based on this model, rural locations also have a lower percentage influence on housing expenditures compared to urban locations. The consistent pattern across all three types of necessary expenditures reinforces that the cost of living for the M40 group in urban areas is higher than those residing outside urban areas.

Other than that, the state factor in this model presents a different value compared to others, where states like Johor, Melaka, Pulau Pinang, Selangor, W.P. Kuala Lumpur and W.P. Putrajaya influence housing expenditure 0.033% lower than other states. This could be due to the high housing costs in these six states with high monthly expenditures, leading them to allocate less towards housing items. Table 2 lists the regression coefficients for all three models constructed. Overall, it can be observed that the spending pattern of the M40 group in 2019 for essential goods is at a moderate level, with no significant change in living standards for food, transportation, and housing items.

Furthermore, Table 2 also shows the adjusted R^2 values for the regression model that has been constructed. For the food expenditure model, 3.5% of the average monthly food expenditure is influenced by the independent variables used in this study. Meanwhile, for the average monthly transportation expenditure, it is 4.5%, and for the average monthly housing expenditure, it is 2.3%. The low values suggest that there are several other independent variables, aside from those used in this study, that affect all three expenditures for the M40 group in 2019.

Table 2: Regression coefficients

	Log(Food)	Log(Transportation)	Log(Housing)
Constant	1.738	0.160	-0.065
Log(Income)	0.074	0.462	0.388
Household Size	0.036	0.010	-
Rural	-0.082	-0.144	-0.199
States	0.056	0.02	-0.033
R^2	0.035	0.045	0.023

5. Conclusion

Overall, this study has identified the causes of the cost of living increase for the M40 group based on data obtained, including expenditure data from 2019, inflation data, and income data from 2007 to 2019. The increase in costs is focused on two main factors according to Bank Negara Malaysia, namely inflation and spending patterns. The initial descriptive analysis clearly shows that inflation is a significant cause of the pressure on the cost of living faced. Throughout the period from 2007 to 2019, the overall inflation growth rate almost always exceeded the income growth rate of the M40 group. This makes it difficult for this group to cope with rising prices with insufficient financial resources.

Furthermore, based on multiple regression analysis, the spending pattern of this group is moderate towards essential goods. The percentage of normal expenditure rigidity also indicated that there is no increase in the standard of living that could be a cause of the rising cost of living (Wahab *et al.* 2018). Demographic factors such as household size, urban location, and state also influence their spending, but these effects do not make their spending pattern the main cause of the experienced cost of living increase. Therefore, the primary effort

should be for the government to control these price increases by setting prices especially for basic necessities such as food, transportation, and housing.

There are several limitations to this study. One of them is the lack of references to past studies that specifically focus on the M40 group. Therefore, the comparison of findings is somewhat limited for discussion. Additionally, the focus on the causes of the cost of living increase, centered on two factors, inflation and spending patterns, restricts the scope of this originally broad topic. This limitation arises due to data constraints and the time frame for study preparation, which hindered the ability to further detail aspects such as the relationships among each independent variable used. This limitation is also evident in the low values of R^2 for all three models constructed, indicating that there are independent variables not considered in this study.

As for suggestions for improving this study, one recommendation is to include factors that influence the increase in the cost of living for the M40 group in Malaysia. Factors such as internal and external elements like global population size, political unrest, and commodity shortages due to weather changes could be taken into account. Furthermore, interaction variables can also be utilized. Interaction variables are a method used in multiple regression analysis to link the relationships among the independent variables used. For example, urban variables can interact with income variables because both urban and rural locations have different income distributions. This indirect approach can refine the study and enhance the value of R^2 of the model constructed, demonstrating its greater accuracy in addressing the issues under investigation.

This research holds significant implications for several authorities. The Ministry of Finance can leverage these findings to formulate targeted tax relief measures and budget allocations that specifically address the financial strains faced by the M40 group. The Ministry of Housing and Local Government can utilize the insights to enhance affordable housing policies, ensuring they meet the needs of middle-income households. Additionally, Bank Negara Malaysia can consider the study's conclusions in its monetary policy decisions to better manage inflation and its impact on living costs. Lastly, local government bodies can benefit by implementing community-level initiatives that directly address the cost of living challenges identified in this research.

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