

# EXAMINING THE PATTERN OF HOUSEHOLD MONTHLY INCOME AND EXPENDITURES BY STATE IN MALAYSIA

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## ABSTRACT

Malaysian households have exhibited significant improvements in the standard of living and economic opportunities. However, a larger household income does not always translate into an economically comfortable household. Regional variations in income and expenditure levels need to be explored for better understanding on the diversity of experiences among Malaysian households. Therefore, this study aims to investigate the pattern and relationship between household income, household expenditure, and household size among states in Malaysia. Several methods have been used such as the Pearson correlation coefficient, paired t-test, and multiple regression model using IBM Statistical Package for the Social Sciences (SPSS) version 27 and Microsoft Excel for the year 2016, 2019 and 2020. Descriptive results showed that despite the significant increase in household median income, households seemed unable to allocate the income increment to their expenses, possibly due to higher living costs requiring adjustments in expenditure. Results also showed that the expenditure growth rate outpaces the income growth rate drastically in a few states such as Negeri Sembilan and Putrajaya. The inferential results have shown that there is a significant difference in the mean monthly household median income and the mean monthly household median expenditure across states in Malaysia between 2016 and 2019. Multiple regression revealed that household median income significantly predicted household median expenditure, while household size is not significant. This study suggests government to regularly review the prices of essential goods and services to ensure they remain affordable for all households. This is crucial for improving the living standards and well-being of Malaysians.

**Keywords:** Household income, household expenditure, household size, statistical approach

## 1. INTRODUCTION

Viewed from a long-term perspective, Malaysian households have undoubtedly exhibited significant improvements in their standard of living, livelihoods, and economic opportunities. With the active participation of its people, Malaysia's economic development was supported by the transformation of its economic structure. This allowed it to change and adapt in response to the needs of the time and Malaysia's comparative advantages in the global economy. Hence,

a firm understanding of the reasons underpinning the diversity in household characteristics is essential. However, not all households have the same experience.

A larger household income does not always translate into an economically comfortable household (Đukić et al., 2021). For instance, certain areas may have more expensive goods and services, demanding higher household incomes to maintain the same standard of living (Yunchao et al., 2020). All things considered, over the past several years, Malaysian households' expenditure patterns have changed, with a higher proportion of discretionary expenditure. Note that changes in the pricing for various expenditure categories significantly impact the overall expenditure patterns, as can be observed by breaking down the change in share into quantity and price effects. This is especially evident regarding food expenditure, which has exhibited significant price increases, and communication expenditure, where prices have decreased (Garner et al., 2022).

Due to the recent dynamics and structure of household finances, studying household income, expenditure, and household size at the state level is crucial for evaluating the financial well-being of the population and understanding the dynamics and structure of household finances (Mumtaz & Smith, 2021). It also reveals the imbalance between income and expenses within urban and rural households (Samrat & Reshmi, 2024; Kang May et al., 2023). Numerous studies have shown a clear link between household income and spending behavior: higher-income households tend to allocate a smaller percentage of their income to basic needs like housing and food, allowing more flexibility for non-essential spending and savings. Conversely, lower-income households often spend a substantial portion of their earnings on essentials, limiting their opportunities for financial stability and investment (Midamba et al., 2024; Fafard St-Germain & Tarasuk, 2018; Kiran & Dhawan, 2015; Serikkyzy et al., 2024). This dynamic underscores the challenges faced by lower-income households in achieving financial stability, further highlighting the importance of a nuanced understanding of income and expenditure patterns across different regions and demographic groups in Malaysia.

This study will discuss three key variables: 1) household incomes, 2) household expenditure, and 3) household size. We begin with the definition and official statistics of Malaysia regarding household income, household expenditure, and household size. Household is defined as a person or group of related or unrelated persons who usually live together and share the use of food and other living essentials. In 2016, the average size of a household was 4.1 persons. Meanwhile, in 2019, the average size declined to 3.9 persons. This follows a long trend of declining household size in Malaysia. For example, in 1980, the average household size was 5.2 persons. Household size is also pivotal in moderating the relationship between income and expenses. Research has demonstrated that larger households tend to experience increased expenditures due to the inherent need to provide for more individuals. This phenomenon is particularly evident in the areas of housing, education, and healthcare, where economies of scale may not apply in the same way as in smaller households (Rareş Bircea & Kardos, 2024). Consequently, larger households often face a higher financial burden compared to smaller ones, even if their income levels are similar (Nik Mustafa et al., 2011; Rashid et al. 2011; Hatidjah, 2017; Kah et al., 2021; Yunchao et al., 2020; Choudhary et al., 2023; Bilalli et al., 2024).

Household income refers to the income received by household members, whether in the form of cash or in-kind, that is earned at frequent intervals and accrued weekly, monthly, or yearly and is available for current consumption. Note that household income was assessed based on median and mean values. Malaysia recorded the median household income in 2016 as RM5,228 per month, while in 2019, the mean household income was RM6,958 per month. Meanwhile, the median household income in 2019 was RM5,873 per month, while the mean household income was RM7,901 per month (Department of Statistic Malaysia, 2020b).

Consumption expenditure refers to the portion of income spent on private consumption of goods and services. The expenditure patterns of households are influenced by various factors depending on households' needs and size. The average household expenditures in 2019 and 2016 were RM4,609 and RM4,033, respectively. Additionally, household expenditure has grown in line with mean household income, growing slightly faster than expenditure (Department of Statistic Malaysia, 2020a; Rashid et al., 2020; Keister et al., 2016).

While previous studies concentrated on the national level, our research is conducted at the state level. Moreover, demographic characteristics exert a substantial influence on this dynamic. As we navigate the ever-evolving landscape of economics, a deeper comprehension of these relationships is vital for policymakers, researchers, and individuals alike, as it informs strategies to promote financial stability and well-being among households of varying sizes and income levels (Topić – Pavković, 2024). Nonetheless, widely diverse realities that various Malaysian households experience can be obscured by national averages. One might examine the regional variations in income levels to understand the diversity of experiences among Malaysian households.

In the literature, limited sources explore the pattern and relationship among household income, household expenditure and household size at the state level in Malaysia. Inspired by the previous works by Nik Mustafa et al. (2011), Kiran and Dhawan (2015), Yunchao et al. (2020) and Kang et al. (2023), we explore the pattern and relationship of these household characteristics factors using three analytical methods namely correlation, paired sample t-test, and multiple regression model.

The rest of this study is organized as follows. Section 2 describes the data, methodology, and variables used in this paper. Section 3 presents the results and discussions of the empirical findings. The last section concludes the study.

## 2. DATA AND METHODOLOGY

The data that have been used in this study are, average household size (HHSIZE), median of monthly household gross income (INC), and median of monthly household consumption expenditure (EXP). These data have been extracted from the Household Income Survey 2016 and 2019, Household Expenditure Survey 2016 and 2019, also annual reports from the Department of Statistics Malaysia. The state-level data for the years 2016, 2019, and 2020 were observed. All 16 states in Malaysia were included, including 3 states in West Malaysia; Sabah, Sarawak and Labuan and 13 states in East Malaysia; Perlis, Pulau Pinang, Kedah, Perak, Selangor, Putrajaya, Kuala Lumpur, Negeri Sembilan, Melaka, Johor, Pahang, Terengganu and Kelantan.

This study explored the pattern and relationship of these household characteristics factors using descriptive and inferential analysis. The analytical methods used are descriptive analysis, correlation, paired sample t-test, and multiple regression model and were performed using IBM Statistical Package for the Social Sciences (IBM SPSS) software version 27 and Microsoft Excel.

### 2. 1. PEARSON CORRELATION COEFFICIENT

Pearson correlation coefficient analysis was conducted to explore the relationships within the dataset further (Stojanović & Puška, 2021). The correlation coefficient is a statistical measure that indicates the strength and direction of the linear relationship between two variables (Hoşgör et al., 2023). In this case, the variables are median household income, median household expenditure, and household size, which are quantitative and continuous. Although this study has three variables, they will be paired alternately.

The correlation coefficient can be calculated using the Pearson's formula, which is:

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}} \quad (1)$$

Where  $r$  is the correlation coefficient.  $x_i$  and  $y_i$  are the values of  $x$  and  $y$ .  $\bar{x}$  is the mean of  $x$  and  $\bar{y}$ , respectively. This formula standardizes the covariance of  $x$  and  $y$  by dividing it by the product of their standard deviations, resulting in a value between -1 and 1. A positive value of  $r$  indicates a positive correlation, a negative value indicates a negative correlation and a value of 0 indicates no linear correlation.

## 2. 2. PAIRED T-TEST

The paired t-test evaluates the significance of mean differences within the paired observations. This offers a nuanced understanding of whether the observed variations in median household income, expenditure, and household size for the years 2016 and 2019 are statistically significant. The formula for the paired t-test is expressed as (Bluman, 2022):

$$t = \frac{d}{\left(\frac{s}{\sqrt{n}}\right)}, \quad (2)$$

where  $d$  quantifies the difference between the meaning of the paired observations. In this context, the paired observations consist of median household income, median household expenditure, and household size. The mean difference,  $\bar{d}$ , represent the average of the paired differences, offering insight into the central tendency of the observed changes.  $s_d$  is the standard deviation of differences that provides a measure of the variability or spread of the paired observations. Furthermore,  $n$  denotes the total number of pairs in the dataset, contributing to determining degrees of freedom. The transition from the correlation coefficient to the paired t-test allows for a comprehensive exploration of the strength and significance of relationships in this study's variables. This study delved further into examining household financial dynamics using paired t-tests. A set of research hypotheses were formulated, as provided below, concerning the mean of household median income, mean of household mean income, and mean of household median expenses, as well as the mean of household mean expenses, focusing on the years 2016 and 2019.

Research hypotheses:

### 1. Household median income

$H_0$ : There is no significant difference in the mean household median income between 2016 and 2019.

$H_1$ : There is a significant difference in the mean household median income between 2016 and 2019.

### 2. Household mean income.

$H_0$ : There is no significant difference in the mean household mean income between 2016 and 2019.

$H_1$ : There is a significant difference in the mean household mean income between 2016 and 2019.

### 3. Household median expenses

$H_0$ : There is no significant difference in the mean household median expenses between 2016 and 2019.

$H_1$ : There is a significant difference in the mean household median expenses between 2016 and 2019.

## 4. Household mean expenses

$H_0$ : There is no significant difference in the mean household mean expenses between 2016 and 2019.

$H_1$ : There is a significant difference in the mean household mean expenses between 2016 and 2019.

### 2. 3. MULTIPLE REGRESSION MODEL

Multiple regression is a statistical method employed to examine the association between a sole dependent variable and multiple independent variables (Basysyar & Dwilestari, 2022). The primary goal of multiple regression analysis is to utilize the known values of independent variables to forecast the value of the single dependent variable. By following the practices of former researchers (Kang May et al., 2023), this study adopts the multiple regression model as follows:

$$Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n + \epsilon \quad (3)$$

where:

$Y$ : dependent variable

$X_1, X_2, X_n$ :  $n$  independent variables (predictors)

$a, b_1, b_2, b_n$ : regression coefficients

$\epsilon$ : model's error term.

The dependent variable in this study is defined as the median of monthly household consumption expenditure. Two independent variables are examined: median of monthly household gross income and average household size. It is hypothesized that changes in these independent variables will affect the dependent variable, with each unit increase in the independent variables corresponding to a respective impact on the dependent variable of units for median of monthly household gross income and units for average household size.

## 3. RESULTS

This section explains the findings of both descriptive and inferential analyses. It commences with an overview of the research findings through descriptive analysis. Subsequently, the discussion transitions to correlation analysis. Following the correlation analysis, it delves into the various findings from paired t-tests, ANOVA, multiple comparisons, and multiple regression analyses.

### 3. 1. DESCRIPTIVE RESULTS

As indicated in Table 1, the mean monthly household median income for 2016 across states in Malaysia is RM5235.94, compared to RM5915.13 for 2019. Similarly, the mean monthly household median expenditure for 2016 was RM3341.13, which increased to RM3753.06 for 2019. The data indicates an overall increase in median income and expenses over two years.

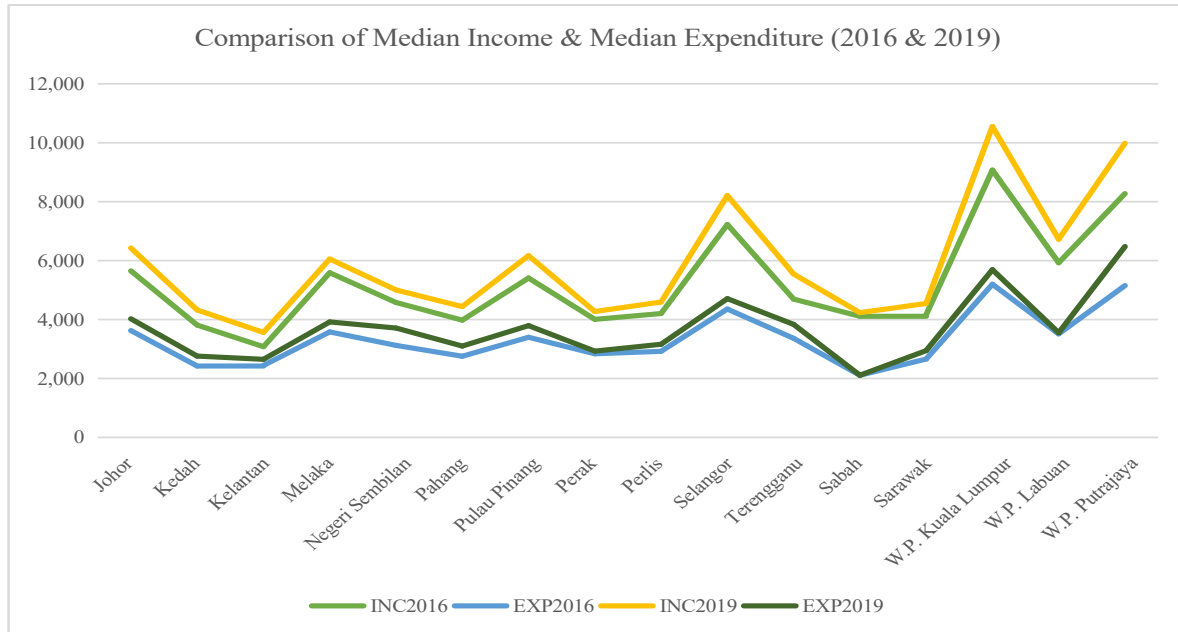
Table 1. Summary of variables

| Variable    | Mean     | Median   | Std. variation | Minimum | Maximum |
|-------------|----------|----------|----------------|---------|---------|
| INC 2016    | 5235.938 | 4636.500 | 1687.322       | 3079.0  | 9073.0  |
| INC 2019    | 5915.125 | 5275.0   | 2075.848       | 3563.0  | 10549.0 |
| EXP 2016    | 3341.125 | 3242.50  | 908.8549       | 2109.0  | 5199.0  |
| EXP 2019    | 3753.063 | 3631.0   | 1079.837       | 2650.0  | 6478.0  |
| HHSIZE 2019 | 3.938    | 3.90     | 0.3722         | 3.30    | 4.70    |
| HHSIZE 2020 | 3.9062   | 3.8500   | 0.41064        | 3.30    | 4.90    |

Source: Data computed using SPSS

In contrast, the mean average household size for 2019 and 2020 was recorded at 3.9375 and 3.9062, respectively. This slight decrease suggests that some family members may have relocated to different places, occupying separate residences.

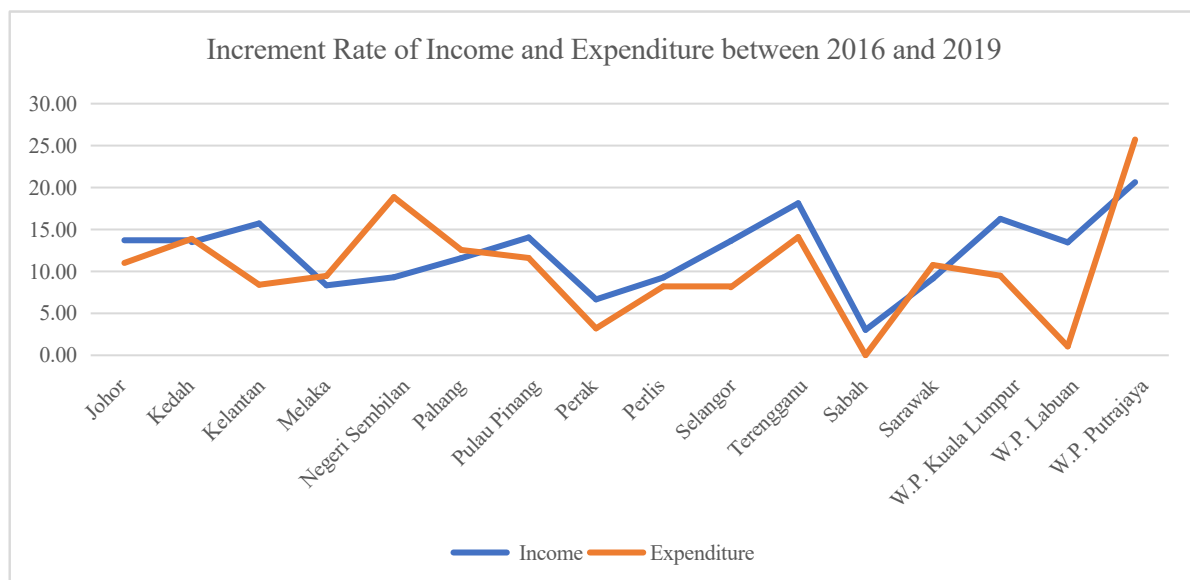
Figure 1. Comparison of household median income & expenditure for 2016 and 2019 by state in Malaysia.



Source: Data computed using Microsoft Excel

Figure 1 illustrates the belief that household expenditure is influenced by household income. In this study, the mean household expenditures for the years 2016, and 2019 were analyzed. The mean values for household mean expenditures are RM3997.35 and RM4466.12, respectively. It appears that household expenditures have increased over the years. Moreover, it was observed that the pattern of household expenditure mirrors that of household income, with states exhibiting higher household incomes also demonstrating higher expenditures.

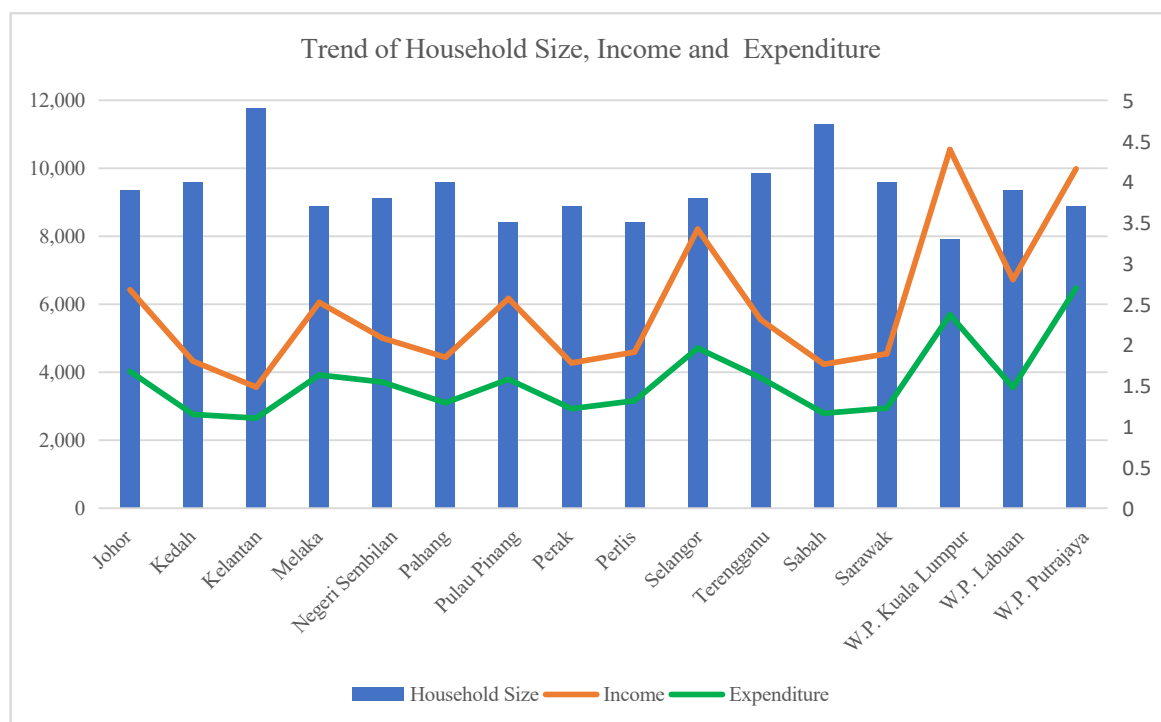
Figure 2. Increment Rate of Income and Expenditure between 2016 and 2019.



Source: Data computed using Microsoft Excel

Based on Figure 2, in most states, the growth rate of income outpaces the growth rate of expenditure in 2019 compared to 2016. In states such as Kelantan, Kuala Lumpur, and Labuan, the gap between the income growth rate and expense growth rate, known as the income-expenditure disparity, is remarkably large. This disparity is likely due to effective financial management, increased employment opportunities, and government support programs that have significantly boosted household incomes compared to the rise in living costs. Moreover, this finding aligns with Engel's theory, supported by [Nik Mustafa et al. \(2011\)](#). However, in other states such as Kedah, Negeri Sembilan, Sarawak, and Putrajaya, the growth rate of expenditure exceeds the growth rate of income. This could be due to higher living costs in these areas, unexpected economic challenges, or a significant increase in essential expenses such as healthcare, education, and housing, which outpaces income growth. Further study is needed to determine the underlying reasons for this trend.

Figure 3. Trend of Household Size, Income and Expenditure



Source: Data computed using Microsoft Excel

Figure 3 demonstrates the trends in three different variables, median income and median expenditure as well as household size. Overall, both median income and median expenditure have changed steadily in a parallel pattern. This contrasts with the pattern observed for the household size variable. Hence, one would anticipate that a larger household size corresponds to increased expenditures; however, Figure 3 reveals a contrasting trend. For example, in Kelantan and Sabah, where household sizes are the highest among states, both income and expenditure rank among the lowest. Meanwhile, household in Kuala Lumpur has the highest income and expenditure despite of having lowest household sizes among states, as stated by [Najdi et al. \(2019\)](#).

### 3. 2. INFERENCE RESULT

Table 2 presents the results of Pearson correlation analyses examining the dynamics of household income, expenditure, and household size for the years 2019 and 2020. Firstly, focusing on the relationship between median household income and median household expenditure in 2019, the analysis reveals a remarkably strong positive correlation coefficient of 0.960 ( $p < 0.001$ ). This finding indicates that as household income increases, so does household expenditure, sug-

gesting a proportional rise in spending habits with income levels.

Turning to the correlation between household size and income, a negative correlation coefficient of -0.399 is observed, albeit with a *p*-value of 0.126, indicating statistical insignificance. This suggests that this relationship does not hold true with statistical confidence for the year 2019. However, examining household size in 2020 against median household income in 2019 reveals a stronger negative correlation coefficient of -0.565 (*p* = 0.023). This indicates a statistically significant relationship, suggesting that larger households in 2020 tended to have lower median incomes compared to smaller households in the previous year.

Moving to household expenditure in 2019, similar patterns emerge. There is a negative correlation between household size in 2019 and expenditure, though statistically insignificant (*r* = -0.381, *p* = 0.146). Yet, when considering household size in 2020 against expenditure in 2019, a significant negative correlation of -0.530 (*p* = 0.033) is observed. It is evident that there is a delayed response of household size to changes in household income and expenditure. Further investigation is necessary to understand the factors contributing to this delayed response.

Table 2. Results for Pearson correlation coefficient

| Variables | INC 2019 | EXP 2019         | HHSIZE 2019       | HHSIZE 2020       |
|-----------|----------|------------------|-------------------|-------------------|
| INC 2019  | 1        | 0.960<br>(0.000) | -0.399<br>(0.126) | -0.565<br>(0.023) |
| EXP 2019  |          | 1                | -0.381<br>(0.146) | -0.53<br>(0.033)  |

Source: Data computed using SPSS

Based on the paired-sample *t*-test results in Table 3, there is enough evidence to reject null hypothesis for research Hypotheses 1 and Hypotheses 2 (refer section 3.2) where, there is a significant difference in the mean monthly household median income across states in Malaysia was observed for the two years at a 5% significance level, with a *p*-value of 0.0000. This finding suggests a substantial increase in household income within the three-year period. The mean difference of -679.1875, a standard deviation of 425.7029, and a *t*-statistic of -6.382 provide robust statistical evidence supporting this observed increase.

Table 3. Results for paired sample *t*-test

| Pair                     | Mean difference | Std. deviation | T      | Sig. (2-tailed) |
|--------------------------|-----------------|----------------|--------|-----------------|
| med_inc16 vs med_inc19   | -679.1875       | 425.7029       | -6.382 | .000            |
| med_exp16 vs med_exp19   | -411.9375       | 294.3627       | -5.598 | .000            |
| mean_exp16 vs mean_exp19 | -466.7500       | 236.3239       | -7.900 | .000            |
| mean_inc16 vs mean_inc19 | -817.8125       | 385.1310       | -8.494 | .000            |

Source: Data computed using SPSS

Moreover, there is enough evidence to reject null hypothesis for research Hypotheses 3 and Hypotheses 4 (refer section 3.2) where there is a significant difference in the mean monthly household expenses for these two study years, indicating an overall increase. The mean difference of -411.9375, a standard deviation of 294.3627, and a *t*-statistic of -5.598 contribute to

the understanding that monthly household expenses have experienced a notable rise over the specified period. In addition, the  $p$ -value of 0.000 reinforces the statistical significance of this observed increase in expenses.

Table 4. Multiple regression

|          | Unstandardized coefficients beta | Std. Error | Standardized Coefficients beta | t     | Sig.  |
|----------|----------------------------------|------------|--------------------------------|-------|-------|
| Constant | 649.438                          | 1158.139   |                                | 0.561 | 0.58  |
| INC      | 0.503                            | 0.049      | 0.967                          | 10.27 | 0.000 |
| HHSIZE   | 32.838                           | 247.498    | 0.012                          | .133  | 0.896 |

Notes: Dependent Variable: med\_exp19

Source: Data computed using SPSS

To investigate the research question, a multiple regression was conducted, as provided in Table 4, employing median income and household size as predictors and median expenses as the dependent variable. Specifically, the results demonstrated that median income was a significant positive predictor of median expenses ( $\beta = 0.503$ ,  $t = 10.274$ ,  $p = 0.000$ ). This means that for each one-unit increase in median income, there is an increase in median expenses of 0.503 units. Conversely, the results indicated that the household size of the year 2020 ( $\beta = 32.838$ ,  $t = 0.133$ ,  $p = 0.896$ ) was not a significant predictor of median expenses.

Overall, the results indicated the significance of the predictive model,  $F(2,113) = 76.352$ ,  $R^2 = 0.922$ ,  $p < 0.000$ . All predictors collectively explained a substantial amount of variance between the variables (92.2%). The regression model can be written as :

$$\text{Expenditure} = 649.438 + 0.503(\text{Income}) + 32.838(\text{Size}) \quad (4)$$

## 4. DISCUSSION

Our study presents insightful findings focused on household characteristics, which provide the context required to understand Malaysia's economic patterns. Specifically, we examine three key factors: household size (HHSIZE), median monthly household gross income (INC), and median monthly household consumption expenditure (EXP). Data for these variables were sourced from the Department of Statistics, Malaysia. Pearson correlation coefficient, paired t-test, and multiple regression model have been used in this study. The findings can be discussed as follows.

The findings of correlation analysis revealed a significant strong positive correlation between median income and expenditure as expenditure rises when income increases. However, an increase in household income does not necessarily portray that a household is more financially comfortable. Over the past few years, Malaysian households have exhibited a shift in their spending patterns, allocating a higher percentage of their income towards discretionary spending (Garner et al., 2022). This trend suggests that despite higher incomes, households may not be experiencing improved financial stability. Moreover, a study by Yunchao et al., (2020), highlights that in certain locations, higher household incomes might be necessary simply to maintain the same standard of living due to the rising costs of goods and services. Consequently, the increase in income may be offset by the escalating expenses, leaving households with limited gains in terms of financial comfort.

Meanwhile, household size has an inverse correlation with income and expenditure. The slight decrease in average household size from 3.9375 in 2019 to 3.9062 in 2020 could be attributed

to a combination of changing family dynamics, economic factors, migration patterns, cultural shifts, and housing market conditions. While smaller family sizes may seem to require less income, the growing desire for financial wants often leads to an inverse correlation between income and family size. Despite having fewer dependent members, households tend to spend more on discretionary financial wants as their income rises, offsetting the expected savings from a smaller family unit. The pursuit of non-essential financial wants, such as luxury goods, vacations, and entertainment, can strain budgets even in relatively small families, creating a paradoxical situation where higher incomes do not necessarily translate to greater savings or financial stability (Nik Mustafa et al., 2011; Kiran et al., 2015).

Based on paired-sample t-tests, a significant difference in the mean monthly household median income was discovered across states in Malaysia for the two years at a 5% significance level, with a p-value of 0.0000. This implies a significant increase in household income over the three-year period as reported in the Department of Statistic Malaysia (2020b). Furthermore, similar significant differences were observed for monthly household expenses. Approximately 13% increase in the mean household incomes from 2016 to 2019 is an indication that the Malaysian economy was likely undergoing a period of economic growth and expansion during those three years.

There is a strong correlation between household income and spending patterns, as evidenced by the numerous studies conducted. Households with higher incomes typically devote a smaller portion of their income to necessities like shelter and food, leaving more room for savings and non-essential expenditure. On the other hand, households with lower incomes tend to allocate a significant amount of their earnings towards necessities, so restricting their prospects for investment and financial stability (Wu, 2020; Fafard St-Germain & Tarasuk, 2018; Kiran & Dhawan, 2015).

To address the research question, a multiple regression analysis was conducted with median income and household size as predictors and median expenses as the dependent variable. The results indicated that median income was a significant positive predictor of median expenses, but household size (HHSIZE) was not a significant predictor.

Household spending typically depends on income, even though the rate of increase in expenditure is higher than the rate of increase in income, as shown in the results discussed in the descriptive analysis section. This higher rate of increase in household expenses in several states in Malaysia may be attributed to the rising cost of living each year, despite the household size decreasing or remaining unchanged.

## 5. CONCLUSION

Our findings can be summarized as follows. Descriptive results showed that despite the significant increase in household median income, households seemed unable to allocate the income increment to their expenses, possibly due to higher living costs requiring adjustments in expenditure. The descriptive results also showed that the expenditure growth rate outpaces the income growth rate drastically in a few states such as Negeri Sembilan and Putrajaya. The inferential results have shown that there is a significant difference in the mean monthly household median income and the mean monthly household median expenditure across states in Malaysia between 2016 and 2019. Multiple regression revealed that household median income significantly predicted household median expenditure, while household size is not significant.

The results suggest vital policy implications that should be considered in formulating future policies, especially those related to household income and expenditure across states in Malaysia. This is essential for improving the living standards and well-being of Malaysians. The pub-

lic and private sectors are given incentives by the government to increase income. The private sector should play a part in imposing reasonable prices and adopting social responsibility. To avoid taking on excessive debt, households must learn to distinguish between their necessities and wants and manage their spending. Instead, they should concentrate on building their household savings.

Families should budget their money based on their most pressing needs. The finest tool for monitoring and guiding their expenditure is a budget. It can guarantee that the budget fits their individual preferences by defining the amounts for each category. The most important thing to stress is that households need to be mindful of how they spend their money. It is important to motivate them to put money aside for their future requirements. In short, it takes time and effort to learn how to handle money well. Undoubtedly, it depends on the people in the community and their understanding of how important it is to save (Chantarat et al., 2020).

This study suggests government interventions to regularly review and adjust the prices of essential goods and services to ensure they remain affordable for all households. This can include subsidies for food, healthcare, education, and transportation, especially in states where the expenditure growth rate exceeds or equal to the income growth rate. This is crucial for improving the living standards and well-being of Malaysians, aligning with the United Nations' Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), and SDG 10 (Reduced Inequality). By addressing these areas, affected households in state such as Kedah, Negeri Sembilan, Sarawak, and Putrajaya which have experienced higher expenditure growth rate compared to income growth rate, can better withstand various shocks.

This study has certain constraints. Firstly, it relies solely on data from 2016, 2019 and 2020. Secondly, it concentrates exclusively on Malaysian data at the state level. Therefore, future investigations could deepen our comprehension of household income and expenditure by utilizing more extensive data at the district level within each state. For future studies, it is recommended to consider expanding the scope of data collection beyond the years 2016 and 2019 to provide a more comprehensive understanding of trends over time. Additionally, researchers could broaden the geographical focus by including data at the district level within each state in Malaysia. This would allow for a more refined analysis of household income and expenditure patterns, providing valuable insights for policymakers and stakeholders. Moreover, exploring additional factors such as demographic changes and economic policies could further enrich the understanding of household financial behaviors and outcomes.

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