

Household Financial Strain in Malaysia: Investigating the Drivers of Elevated Cost of Living

*Siti Aminah Mainal, Muhammad Afiq Idzham Shahairul, Nur Izzah 'Afifah Karim, Nurizzah Nordin
Faculty of Business and Management, University Teknologi MARA, Selangor, Malaysia
Email: *stiainah844@uitm.edu.my, afiqidzham13062002@gmail.com
Corresponding Author: Siti Aminah Mainal

Abstract: Rising living costs in Malaysia impose significant financial burdens on households and challenge economic policymaking. This study identifies and quantifies the influence of six macroeconomic variables—Population Growth Rate, Tax Rate, Import Rate, Export Rate, Income Inequality, and Lending Interest Rate—from 1993 to 2023 on the country's cost of living. Drawing on data from the Department of Statistics Malaysia (DOSM) and the World Bank, we apply descriptive statistics, correlation analysis, and multiple regression methods to uncover long-term relationships. Our findings indicate that population growth and income inequality are positively associated with increased living costs, while fluctuations in import/export rates and adjustments in tax and lending interest rates exert varying but significant effects. These results offer robust empirical evidence of complex interdependencies, underscoring the need for targeted policy strategies—such as equitably structured taxation, inclusive growth policies, trade balance stabilization, and prudent monetary regulation—to alleviate living cost pressures. By illuminating the macroeconomic drivers of living cost dynamics in Malaysia, this study provides actionable insights for policymakers to enhance household welfare.

Keywords: *Tax Rate, Import Rate, Income Inequality, Lending Interest Rate, Cost of Living, Malaysia.*

1. Introduction and Background

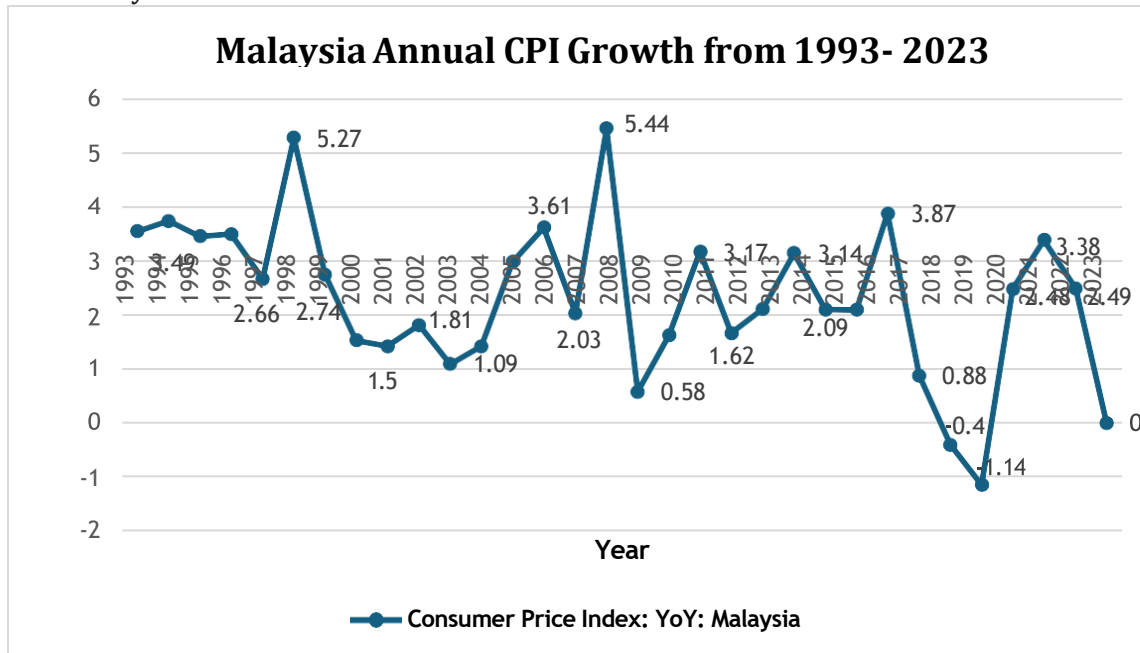
The increasing cost of living presents a considerable impediment in both developed and developing countries, with Malaysia being no exception. Despite reports indicating a decline in the poverty rate and an improvement in the overall well-being of its populace, the issue of rising living costs remains a prominent concern, prompting significant governmental efforts to alleviate the burden on its citizens (Mat, Fadzim, Harun, & Jamil, 2020). This persistent challenge is particularly acute for low-income households, such as the B40 group, who possess limited financial resources and minimal savings, rendering them highly susceptible to economic fluctuations and price escalations (Mainal, Hanipah, Zuhaimi, & Kamarudin, 2024). This escalating burden is attributable to several factors, including income fluctuations, price variations, and changes in household consumption patterns (Sulaiman, Sanusi, & Muhamad, 2019). The implementation of the Goods and Services Tax in 2015 exacerbated the financial strain on Malaysian consumers by augmenting the price of goods and services, while wages have largely remained static (Sulaiman, Shamsudin, Kheng, & Othman, 2020). This has disproportionately affected low-income households, compelling them to adopt various coping strategies to manage their expenses (Mat et al., 2020). Overspending is a widespread problem that leads to social issues due to financial limitations and can result in theft, unauthorized money lending, and long-term personal loans (Othman, Abu, Samsiah, & Sallim, 2020).

The Consumer Price Index is a key indicator for understanding the cost of living in Malaysia. It measures the changes in prices paid by consumers for a basket of goods and services. Malaysia's CPI has shown a consistent increase over the years (Malaysia Consumer Price Index, 2025), reflecting changes in the policy environment and economic structure. Consumption patterns have also shifted, as indicated by the CPI and other economic indicators (Sulaiman et al., 2020). Studies analyze CPI data to understand price movements and inform monetary policy (Ruslan & Mokhtar, 2020; Teall, 1999).

The Consumer Price Index is a vital economic indicator used to assess inflation trends and inform monetary policy decisions (Teall, 1999). It measures the average change in prices over time for a basket of goods and services purchased by consumers (Ghunaimi, Almaqtari, Wesonga, & Elmashtawy, 2025). Central banks and governments use the CPI to understand the effectiveness of past policies, gauge the economy's temperature, and implement monetary policies, such as inflation rate targeting (Teall, 1999). In Malaysia, the Department of Statistics uses findings from household income, expenditure, and basic amenities surveys, along with the CPI, to derive the cost-of-living indicator. The CPI focuses on essential components like food, non-alcoholic beverages, transport, healthcare, education, and housing and utility expenses, which significantly impact household living costs. While Malaysia's CPI growth rate is moderate compared to other ASEAN nations, it still

indicates consistent trends. Furthermore, accurate forecasting of CPI inflation is crucial for policymakers, especially considering the shifts in monetary policy frameworks, increased globalization, and events like financial crises and pandemics (Sengupta, Chakraborty, & Singh, 2024).

Figure 1: Malaysia Annual CPI Growth from 1993 to 2023



Source: Department of Statistics, Malaysia

According to research by the Department of Statistics Malaysia, Figure 1 displays the data showing that the Consumer Price Index (CPI) in Malaysia has experienced notable fluctuations from 1993 to 2023, highlighting significant phases of economic transformation. A crucial year was 1998, during the Asian Financial Crisis, when the CPI growth rate peaked at 5.27%, indicating substantial economic difficulties. Referring to data from the Department of Statistics Malaysia (2023), Malaysian households saw their average monthly expenditures rise from RM 3,683 in 2019 to RM 4,282 in 2022, which corresponds to a 16.26% increase in living costs. Additionally, the year 2008 marked another significant period with a CPI growth rate of 5.44%, driven by global economic instability and rising oil prices. These fluctuations underscore the vulnerability of Malaysian households to macroeconomic changes, particularly affecting urban households who face the greatest economic pressures.

Previous studies have extensively investigated the factors contributing to rising living costs in Malaysia, employing various theoretical frameworks and research methodologies. Researchers like Ismail, Daud, Mohd, Samat, and Ridzuan (2022) have explored multiple dimensions, including macroeconomic variables, household income disparities, and global economic influences. Significant research has focused on understanding the complex interactions between inflation, economic policies, and household expenditure patterns. Theoretical approaches such as the Theory of Cost-of-Living Index, Theory of Consumer Choice, and Engel's Curve Theory have been utilized to analyze cost-of-living dynamics. These studies have consistently highlighted the multifaceted nature of living expenses, emphasizing the need for comprehensive, interdisciplinary research approaches to address the challenges faced by Malaysian households.

The cost of living is a highly significant topic to analyze, as Harian (2023) reports that it is steadily increasing, with the prices of basic goods and services soaring and the Malaysian currency in 2023 depreciating to RM4.71 against one US dollar. Population growth rate, tax rate, import rate, export rate, income inequality, and lending interest rate have been chosen as independent variables due to their significant influence on the cost of living. Based on Wahab, Shahiri, Mansur, and Zaidi (2018) highlight that factors such as imports, population growth, income inequality, and housing costs closely linked to lending interest rates, are strongly associated with the rising cost of living in Malaysia. Moreover, it is stated in Ruslan and Mokhtar (2020) emphasize that economic

fluctuations in exports impacted the cost of living in the Federated Malay States between 1930 and 1940, illustrating the substantial role of export dynamics in determining living standards.

In summary, the cost of living in Malaysia has exhibited a dynamic and intricate pattern of change over the last three decades. Consequently, this study aims to elucidate the shifts in living costs within Malaysia, which are perceived as unpredictable due to a confluence of economic and social determinants since the 1990s. The research will concentrate on the impact of macroeconomic variables on household expenditure and living expenses in Malaysia. The analysis of living costs will be conducted using the Consumer Price Index, which provides a thorough assessment of essential household expenditures. Furthermore, several relevant theoretical frameworks will be employed to comprehend the diverse factors influencing the dynamics of the cost of living, thereby offering a holistic perspective on the economic challenges confronting Malaysian households.

2. Literature Review

The Cost of Living: The cost of living is one of the most critical economic indicators globally and has been significantly impacting the socioeconomic development of nations, particularly in developing countries like Malaysia. However, the continuous rise and complexity of living costs have been a subject of intense research among economists and policymakers who are keen to understand the underlying determinants affecting household economic sustainability. Previous studies have been conducted to examine the variables influencing the cost of living in Malaysia. The fluctuations in living costs can occur due to several factors such as population growth rate, tax rate, import rate, export rate, income inequality, and lending interest rate. Latimaha, Ismail, and Bahari (2020) conducted research using Malaysian data from 1980 to 2014, employing the Toda Yamamoto causality model. The researchers found significant relationships between GDP per capita, population growth, unemployment rate, and degree of openness with the cost of living. Their findings align with Ismail et al. (2022), who identified population size and density as significant factors positively influencing household living costs. The study by Azmi, Fitriana, Rohsede, Ramden, and Puteh (2024) further supports these findings, highlighting how taxes on goods and services, reduced subsidies, stagnant income levels, and reliance on imported goods contribute to rising living costs in Malaysia.

Ismail et al. (2023) expanded on these findings by applying Engel's Curve theory to analyze Malaysian household expenditure patterns, particularly focusing on 14,551 households, including 6,720 B40 households. Their research demonstrated that as household income increases, the percentage of expenditure decreases, indicating changing consumption patterns among different income groups. This finding aligns with earlier studies that emphasize the complex relationship between income inequality and living costs, suggesting that policy interventions should consider the income elasticity of necessities when addressing cost-of-living challenges.

The Theory of Cost-of-Living Index, as established by Konüs in the 1920s and elaborated by Triplett (2001), provides a fundamental framework for measuring changes in living standards through utility functions subject to budget constraints. When analyzing living costs, the theory demonstrates how different price regimes affect the monetary expenditure required to maintain constant utility levels. According to Triplett (2001), a true cost-of-living index exists when the satisfaction or standard of living of a family remains constant despite changing economic conditions. The application of the cost-of-living index can be examined through two primary measurement approaches: the Laspeyres index and the Paasche index. Gillingham and Greenlees (1987) collectively established that the true cost of living consistently falls between these two measures, expressed as $L > I > P$. The Laspeyres index serves as the upper limit of the true cost of living, while the Paasche index establishes the lower limit, providing a range within which the actual cost of living must fall. Based on these foundational studies, the relationship between price changes and the cost-of-living index follows a clear pattern. This theoretical framework shows how market price changes directly impact household welfare, with the actual cost of living derivable from the indifference curve given the level of satisfaction enjoyed.

The Theory of Consumer Choice, as applied to cost-of-living analysis, explains how households make spending decisions within their total income or budget constraints. When a person's purchasing power increases due to higher income or wages, the quantity of normal goods purchased also increases. This relationship

demonstrates how budget lines shift forward and parallel to each other as consumption possibilities expand, reflecting an improved standard of living. The theory's application to the cost of living can be analyzed through both substitution and income effects. As described in this previously studied framework, when prices change, both the intercept and slope of the budget constraint shift, leading to two distinct effects on consumer behavior. The substitution effect involves movement along the demand curve, while the income effect represents a shift between different utility curves due to changes in real income. These movements reflect changes in consumers' purchasing power and their ability to maximize utility under different price conditions. According to Keat and Young (2009), maintaining a consistent standard of living depends on various factors that determine the demand function, including prices of related goods, income distribution, tastes and preferences, number of buyers, and future price expectations. Government policies, particularly taxes and subsidies, directly influence the prices of goods and services, affecting consumer tastes and living costs. Additionally, population growth and density changes impact market dynamics by altering the number of buyers in the market.

The Engel Curve explains the relationship between income or total expenditure, where an increase in income will cause the percentage of expenditure to increase at a decreasing rate (Shah, Ullah, Ullah, & Amin, 2020). The theory demonstrates that higher incomes correlate with a lower proportion of household spending on necessities, providing crucial insights into how income changes affect living standards. As household income rises, their purchasing power increases, leading to changes in consumption patterns. Emery and Guo (2020) further elaborate that when household purchasing power increases due to income growth, the income elasticity of household items decreases, making households less sensitive to price changes. This relationship helps explain how different income groups experience and adapt to changes in living costs. The theory provides a framework for understanding how households adjust their spending patterns as their economic circumstances change. According to Perloff (2018), the Engel curve describes the relationship between consumption quantities and income levels, assuming constant prices and other factors. The research demonstrates that the relationship between income and consumption patterns follows predictable patterns, helping explain why different income groups experience varying impacts from changes in living costs. This theoretical framework provides valuable insights into how income changes affect household welfare and living standards across different economic groups.

Population Growth Rate: The population growth rate stands as a critical demographic factor with multifaceted implications for a nation's socioeconomic fabric. It is defined as the rate at which the number of individuals in a population increases (or decreases) per unit time, typically expressed as a percentage of the base population. Increases in population size augment aggregate demand for goods and services, thereby exerting upward pressure on prices, particularly when supply rigidities exist (Johari & Said, 2021). This surge in demand encompasses essential items, including food, housing, healthcare, and education (Liu & Ong, 2021).

Based on findings, population growth is an important factor and has a positive impact on the cost of living for a household. It has been found that the factors of population growth and population density are positively correlated with the cost of living in an area. Furthermore, Population growth has a positive and significant relationship with the cost of living. The expansion of urban areas, driven by rural-to-urban migration in pursuit of employment opportunities, has been a defining characteristic of Malaysia's development trajectory (Man & Salihin, 2018). With the country's urbanization rate standing at 77.7% in 2021, the concentration of people in urban centers has placed substantial strain on housing, transportation, and utilities, contributing to a higher cost of living in these areas characterized by heightened population density (Samad, Zainon, Mohd Rahim, Lou, & Abd-Karim, 2016). Malaysia's rapid urbanization, increased traffic, and rising housing and rental costs are clear examples of this trend. The cost of living in Malaysia's big cities is increasing. This causes the cost of living in an area to rise. The increasing cost of living in Malaysia is also attributed to urbanization. When people move from rural to urban areas in search of better job opportunities, cities get densely populated (Guyatt, Akl, Crowther, Gutterman, & Schünemann, 2012). Malaysia's urban population was 77.7% in 2021.

Therefore, the population growth rate greatly affects the cost of living of households in Malaysia. For every increasing population, there would be greater demand for shelter, food, transportation, and other basic needs and services to be dealt with, leading to inflation or price increases. This means loss of purchasing power for a household, which has a challenge in maintaining its standard of living. Population growth reinforces economic activity and develops lower costs due to economies of scale. Large and fast-growing populations, without

proper planning and investment, however, often place an extraordinary burden on resources and infrastructure and ultimately drive up the cost of living.

Null Hypothesis (H₀): There is no relationship between population growth rate and cost of living.

Alternate Hypothesis (H₁): There is a relationship between population growth rate and cost of living.

Tax Rate: The second independent variable of this study is the tax rate. The rising cost of living in Malaysia has emerged as a significant concern, particularly as tax rates increase due to economic challenges and government initiatives. These tax rates are crucial in shaping the cost of living, influencing consumer purchasing power, inflation, and the pricing of goods and services. Recent tax policies have become key indicators of living expenses in Malaysia. The implementation of the Goods and Services Tax in 2015, which replaced the Sales and Services Tax, has been identified as a contributing factor to the rising cost of living in Malaysia (Sulaiman et al., 2019). The GST increased the monetary value that customers paid for products and services. Many Malaysians are grappling with stagnant annual salaries juxtaposed against a higher cost of living, resulting in decreased purchasing power (Sulaiman et al., 2020). In order to fund government operations and infrastructure development, Malaysia's tax policies, especially sales and service taxes, have a substantial impact on consumer finances and spending patterns.

Research by Mainal et al. (2024) deals with the tax element, which might have an influence on the cost of living. Using 30 years of data and statistical methods, it examines the link between direct tax, housing prices, and other economic variables. According to the report, when taxes rise, households would have more financial difficulties in meeting basic demands such as food, lodging, transit, education, and so on. Thus, the analysis suggests that increased living costs have a favorable influence on tax rates and overall household budgets. The idea of customer preference also explains the cost of living since each consumer has a set amount of money to spend based on their overall income or financial constraints. A person's purchasing power increases when their income or pay rises, allowing them to buy more of each common product. As a result, as the number of items required grows, the budget lines will advance and run parallel to one another. This shows that the level of life has increased. Government policy, including the imposition of taxes and subsidies, will have a direct influence on future pricing, consumer preferences, and the cost of products and services (Mainal et al., 2024).

Although taxes are crucial to the government because they fund public services and infrastructure, they may also be a key driver of the cost of living. Direct taxes, like income taxes, restrict consumers' disposable income by limiting what they can spend. Indirect taxes, such as sales and value-added taxes, directly increase the cost of products and services since consumers pay more. Taxes have varying effects on living costs, depending on tax rates, tax regimes, and economic situations. Policymakers must carefully assess the possible effects of their tax policy on families and companies, balancing income generation with economic stability. If the tax imposition is too big, it can be expected that people will not be able to get a house, bring up children, they will reduce their consumption and economies will get worse (Kovárník, Hamplová, Jedlička, & Hájek, 2015). Indirect taxes are an element of the price of goods bought by consumers or producers (Kaya, Yıldız, & Kaya, 2022). When indirect taxes go up, consumers can expect to see an increase in the price of goods (Hassan, Mahmood, Tahir, Alkhateeb, & Wajid, 2021). Inflation makes the money the individual has less valuable and it also makes the taxes paid seem less significant. Certain taxes, such as capital gains taxes, are pegged to increases in an asset's value and may increase as a result of elevated inflation (L'Huillier & DeLuca, 2023).

Null Hypothesis (H₀): There is no relationship between tax rate and cost of living.

Alternate Hypothesis (H₁): There is a relationship between tax rate and cost of living.

Import Rate: Next, the independent variable is the import rate. Imports are fundamental aspects of international trade and play an important role in sustaining the global economy. Import also refers to the goods and services acquired by businesses or consumers from other countries. This results in an outflow of funds from the country that is purchasing foreign goods and services. Most countries try to export more goods and services than they import because it is able to boost domestic revenue. A high volume of imports indicates a signal of economic growth. But on the other hand, imports could also influence the high cost of living, especially among households. A decline in the value of the Ringgit Malaysia negatively impacts the individuals who really depend on imported goods and services. If this problem is prolonged, it can contribute to an increase in the cost of living (Bank Negara Malaysia, 2022). Business that relies on importing products face increasing costs when the Ringgit Malaysia depreciates because they need to spend more money to purchase the same quantity

of goods in a foreign country. As a result, they often pass these higher costs on to consumers in the form of an increase in retail prices, such as food.

Tariffs can significantly impact consumers by increasing the cost of imported goods, potentially reducing foreign competition and allowing local businesses to raise prices (Fong & Mohs, 2020). Taxes on imports and exports, known as tariffs, have an impact on the cost of products and services in international commerce. Tariffs can make imported goods more costly, which raises the cost of living and changes consumer spending habits (Fong & Mohs, 2020). Tariffs may be used to safeguard local sectors, promote domestic production, and generate cash, but they may also result in higher costs for consumers and retaliatory actions from other countries, influencing global trade relations (Kohn, 2006). If tariffs are imposed on items like machinery or raw materials, manufacturers' input costs may rise, which would raise prices for consumers.

Based on the findings, imports can directly influence domestic inflation through the prices of imported goods included in the consumer price index. Additionally, imports impact inflation indirectly by creating competition between local goods and services and imported alternatives. To manage the excess on demand, a country can implement import policies. Typically, an increase in imports can lead to depreciation of the exchange rate, which can heighten inflationary pressures. This can be controlled by raising the cost of imports. Moreover, when a country imports raw materials, a depreciating local currency increases the expense of these imports. Consequently, the cost of producing finished goods rises due to the higher prices of raw materials. Therefore, higher import levels generally contribute to the increase in inflation that led to a high cost of living (Muariief, Herawati, Suroso, Iswahyuningsih, & Wardani, 2024). According to Mbutor (2014), an increase in inflation makes every individual sadder because of a decrease in the purchasing power of wages, undermines living standards, and exacerbates the uncertainty of life in many ways.

Previous studies also stated that there are several factors that influence the import price to increase in food prices, as an important concern. A report on "Household Income and Expenditure Survey – Sri Lanka 2016", an average Sri Lankan household spends 35% of its income on food. The food basket of Sri Lanka is highly import-dependent and the entire requirements of wheat and red lentils, along with 87% of sugar and 50% of milk and milk products imported. In terms of major nutrients, 42% of total energy, 34% of protein and 45% of fat are obtained from the consumption of imported food items as per the food balance sheets. Hence, these changes in import policies could potentially have significant welfare effects in terms of cost of living as well as food security and nutrition (Nayanathara, Ilangarathna, Rathnayaka, & Weerahewa, 2023).

In conclusion, imports are important to the global economy and significantly influence a country's domestic financial conditions. While they contribute to economic growth and promote competition between local and foreign products, they can also present challenges, particularly when the country's currencies depreciate. In Malaysia, a weaker Ringgit can result in higher costs for imported goods, which can increase household expenses. Studies show that nations that are heavily reliant on imported goods, such as Sri Lanka, face major issues with the rising cost of living due to the increasing import prices. This highlights the importance of effective import policies to manage demand, control inflationary pressures and reduce the negative impact of currency depreciation.

Null Hypothesis (H₀): There is no relationship between import rate and cost of living.

Alternate Hypothesis (H₁): There is a relationship between import rate and cost of living.

Export Rate: Export rate serves as a crucial metric to evaluate a country's economic performance and its impact on domestic living conditions (Yee, WaiMun, Zhengyi, Lee, & Xin, 2016). It measures how effectively a nation trades its goods and services in international markets, subsequently affecting domestic prices and living costs. Components encompassed within this metric include total exports, primary commodity exports, and manufactured exports, which collectively illustrate a country's trade capabilities and economic strength. By the Export-Led Growth theory, the effective management of exports can significantly influence domestic economic conditions, contributing to overall living standards. This may involve achieving economic growth through increased production capacity, enhanced technological advancement, or improved trade relations, ultimately affecting household living costs through various economic channels, such as employment opportunities and domestic price levels.

The exchange rate's impact on export prices is another key mechanism. When a country's currency weakens, its exports become relatively cheaper for foreign buyers, potentially leading to increased demand and higher export volumes (Rajakaruna, 2017). With regards to the Malaysian export rate, trade is a process of economic activity that plays an important role in many situations, which can improve the living standards and prosperity for the said country (Yanita, Napitupulu, & Rahmah, 2020). International trade is frequently leveraged to stimulate economic expansion, as nations engage in the exchange of goods and services across their borders (Chugan & Singh, 2014; Yanita et al., 2020).

Moreover, the enhancement of export performance is crucial due to its direct impact on domestic economic conditions and living costs. Countries that achieve high export rates create favorable conditions for economic growth, while low export performance can lead to increased living costs (Khalafalla & Webb, 2001). Athukorala and Menon (1997) note that efforts to enhance export performance through industrialization and economic diversification can result in improved living standards, thereby reducing domestic economic pressures and providing citizens with better economic opportunities through increased national income and employment generation. The transformation of export structures, particularly in developing economies like Malaysia, demonstrates how strategic trade policies can directly influence economic development and household economic well-being. Previous research studies have aimed to comprehend the relationship between export rates and living costs. As per Iram, Bashir, Gazali, and Idrees (2023), countries with strong export performance tend to demonstrate better economic stability and controlled living costs. Atkin (2024) affirmed that increased exports can lead to economies of scale, potentially lowering domestic prices and affecting living costs. Yee et al. (2016) identified that Malaysia's transition from primary commodities to a more diverse manufacturing and service sector has significantly influenced its economic landscape. The research highlights how exports contribute to economic diversification, creating multiple channels of economic growth and potentially reducing the challenges associated with rising living costs through increased economic opportunities and national productivity.

Despite the potential positive impacts, research also reveals potential negative relationships between export rates and the cost of living. Inflation can negatively impact export competitiveness due to higher production costs, as noted by Yee et al. (2016). The dependence on imported inputs in manufactured exports can create additional economic pressures, potentially offsetting some of the positive economic gains. Khalafalla and Webb (2001) observed that while manufacturers' exports are significant, they may not have a strong growth-stimulating effect due to their reliance on imported inputs. This negative relationship suggests that the impact of exports on living costs is not significant, with potential challenges including increased production costs, potential inflationary pressures, and the vulnerability of export-dependent economies to global economic fluctuations. Similarly, Khalafalla and Webb (2001) discovered a significant positive relationship between exports and economic growth in their examination of Malaysian economic data from 1965 to 1996. Athukorala and Menon (1997) revealed that Malaysia's export-led industrialization success has contributed to rising living standards, with manufactured exports playing a crucial role in economic development and household welfare.

Null Hypothesis (H0): There is no relationship between export rate and cost of living.

Alternate Hypothesis (H1₁): There is a relationship between export rate and cost of living.

Income Inequality: The income inequality and high cost of living have an important relationship, given that the rising cost of living increasingly burdens households across different economic strata. Many studies have been conducted, revealing that income inequality is one of the specific factors for individuals struggling to manage their living costs. According to Kelly, Ruch, Ruch, and Matlhatsi (2018), income inequality is highlighted as an important issue that contributes to social and economic inequality. These gaps are frequently related to basic needs such as a house, groceries, job opportunities and financial mobility. A study from Azmi et al. (2023) states that low-income households often struggle to meet their basic needs due to limited income, especially when living costs rise. It also stated that many Malaysian workers earn above the poverty but this does not mean it gives a good improvement in their overall living conditions. Therefore, this indicates that even though the small increase in income still cannot tackle the high cost of living, it can be very burdensome. This study implies that strategic management is essential to effectively resolve these concerns.

Furthermore, achieving a minimum acceptable standard of living has proven challenging for many low-wage workers around the world in recent times (Seow, 2022). Other than that, as stated by Moretti (2010), considering variations in the cost of living reduces real income inequality, but it does not establish a direct

relationship between income inequality and fluctuations in living expenses. Even if the income gap decreases, for example, because of an increase in the minimum wage, the cost of living does not necessarily decrease. According to Wahab et al. (2018), it shows how income inequality exacerbates the hardship experienced by those on low incomes, as rising costs for essential products, groceries and services affect them disproportionately. Based on the findings, although Malaysia has enjoyed overall economic growth, wage stagnation among low-income workers has caused greater financial stress, making it difficult for these households to keep up with increased spending. This study can be strengthened further with studies from Zainuddin, Nazri, Dali, and Ahmad (2024). The study provides an example where the spending pattern of the B40 group, which spends RM0.80 for every additional RM1, indicates their expenses are very similar to their income. On the other hand, the high-income group has a larger gap between income and expenses. As a result, it proves how higher spending has a big impact on the low-income group that worsening income inequality.

A study has also been conducted which investigates how the difference in income growth between different categories of households in Malaysia namely Low Income (B40), Medium Income (M40) and high income (T20), can impact significantly the cost of living (Sulaiman, Rashid, Ridzuan, Samsudin, Saputra, Abidin, & Hussain, 2024). The study found that, while income growth has been documented, it often fails to keep pace with inflation, particularly among the B40 group. This income mismatch worsens their financial problems, especially in managing expenses related to housing, transportation and necessities. The study also emphasizes the importance of government efforts to address these concerns, such as fair wage increases and subsidies for essential commodities, to improve the living conditions of low-income households. Meanwhile, a study by Carroll and Chen (2016) has found one positive relationship regarding income inequality. As income inequality decreases, low-income households will often have better exposure to education as well as job opportunities, which will enhance their economic mobility. Therefore, it will enable them to obtain a high standard of living since their financial situation improves. With that, they can afford a lot of basic needs, which results in a more stable cost of living.

Income inequality has been on the rise in Western nations since the 1970s, which may be the cause of crime, poor governance, and economic inefficiencies, where it is very noticeable (Houle, Ruck, Bentley, & Gavrillets, 2022). Meanwhile, in Malaysia from 1957/58 to 1990, Malaysia completed one cycle of Kuznets' Inverted-U Hypothesis, but since the 1990s, income inequality has begun to move upward again (Ismail, 2000).

Null Hypothesis (H₀): There is no relationship between income inequality and cost of living.

Alternate Hypothesis (H₁): There is a relationship between income inequality and the cost of living.

Lending Interest Rate: When assessing the cost of living, the lending interest rate is a crucial factor to take into account. It has an impact on the cost of borrowing for both individuals and companies, which has an effect on spending patterns and general economic well-being. The lending interest rate, which is set by central banks or market forces, is the cost of borrowing money expressed as a percentage of the loan amount. Mortgage rates, auto loans, personal loans, and credit card interest rates are all directly impacted by it. Changes in the lending interest rate can have a substantial impact on consumer spending and investment decisions. Furthermore, interest rates serve two purposes in an economy: they represent the cost of borrowing for borrowers and the return on investment (Odionye, Ojiaku, & Uba, 2023). In general, when interest rates are high, borrowing becomes more expensive, which deters consumers and businesses from taking out loans to make purchases or investments (Sari, Setyowati, Putri, & Faridatussalam, 2022). This may cause a decline in demand, which would restrain economic growth and perhaps lower the cost of living. When interest rates are low, borrowing money is less expensive, which encourages spending and investment. The importance of interest rates is especially significant in developing economies, where they play a crucial role in managing the balance between demand and supply in both goods and money markets (Anthony & Saracoglu, 1983).

In Malaysia, the lending interest rate is affected by the Overnight Policy Rate. The Overnight Policy Rate serves as the benchmark interest rate that influences the base rate of lending institutions (Khomariyah, Setyowati, & Utomo, 2022). Based on the Bank Negara Malaysia, the lending interest rate charged typically follows the Overnight Policy Rate set by Bank Negara Malaysia since the Standardized Base Rate will follow OPR exactly. The Standardized Base Rate (SBR), effective 1 August 2022, is the reference used by all banks for pricing new floating rate retail loans, refinancing existing ones, and renewing revolving retail loans. Any changes to the Overnight Policy Rate (OPR) will result in an equivalent adjustment to the SBR (Wexler, Shaffer, & Cotgreave, 2017). The lending interest rate will affect house prices because the profit of Islamic finance or banking in

Malaysia is based on the profit rate, while for conventional banking based on the interest rate (Gazali, Halim, Abdullah, Ahmad, Mamat, Abdullah, & Mokhtar, 2018). However, the strong increase in inflationary pressures has encouraged a few central banks to raise interest rates at a more rapid rate, which may result in tighter global financial conditions (Ibrahim, Omar, & Arshad, 2023).

Moreover, lending interest rates can impact the housing market by influencing mortgage rates and affordability (Latif, Majeed, Rozzani, & Saleh, 2020). Lower rates can boost housing demand and prices (Latif et al., 2020). Relatively low inflation can allow a country's central bank to keep its policy interest rate low, reducing borrowing costs for businesses and individuals, ultimately supporting economic growth (Resosudarmo, Rezki, & Effendi, 2023). When the housing finance interest is low, citizens will be enabled to make some investments, such as buying or renovating a house (Rahman & Ridzuan, 2020). The lending interest rate affects the cost of living in a number of ways, which in turn affects consumer spending, investment decisions, and economic growth. Understanding how lending interest rates work is essential for policymakers and individuals.

Null Hypothesis (H0): There is no relationship between lending interest rate and cost of living.

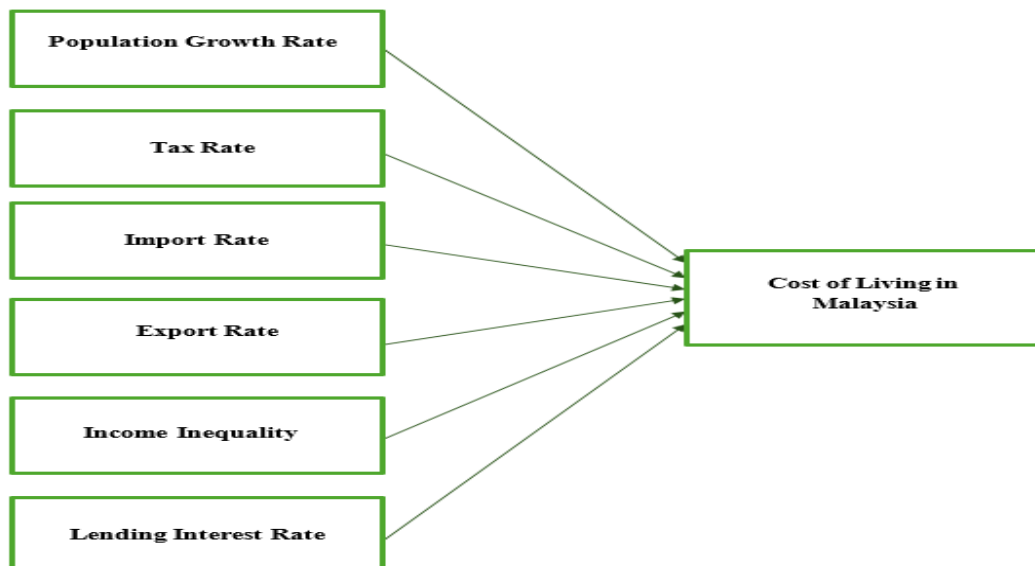
Alternate Hypothesis (H1₁): There is a relationship between lending interest rate and cost of living.

3. Research Methodology

This research utilizes a comprehensive time-series study spanning 34 years (1990-2023) to determine the factors contributing to the cost of living among households in Malaysia. The cost of living in Malaysia has demonstrated significant fluctuations, with notable increases observed across various economic indicators. The economic landscape has been characterized by complex interactions between macroeconomic variables such as population growth rate, tax rates, import/export rates, income inequality, and lending interest rates. Data for the cost-of-living index, serving as the dependent variable, is collected from the Department of Statistics Malaysia, while independent variables are sourced from the World Bank Group, Macrotrends, and other legitimate websites. This extensive methodology enables a comprehensive examination of the intricate factors driving household economic experiences in Malaysia, offering critical insights into the dynamics of living costs over three decades of economic development. This study will use a time series of yearly data as its sample. A correlation analysis will be performed to find the multicollinearity issue in the regression and determine the correlation between the dependent and independent variables.

Figure 2 illustrates the correlation between the dependent and independent variables. The independent factors influenced the dependent variable. This study employs cost of living as the dependent variable and population growth rate, tax rate, import rate, export rate, income inequality, and lending interest rate as the independent variables.

Figure 2: Research Framework



Before the analysis of the multiple regression model, two preliminary tests will be performed, which are descriptive statistics analysis and correlation coefficient analysis. This was followed by statistical tests in the regression analysis, such as the T-test and F-test were conducted and the R-squared and Adjusted R-squared were then determined.

4. Results

This section discusses descriptive statistics analysis, correlations, variance inflation factor, and multiple regression results.

Table 1: Descriptive Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Consumer Price Index	2.5288	1.4596	-1.1400	5.4400
Population Growth Rate	2.0852	0.6276	1.0900	2.9200
Tax Rate	15.4141	2.7960	10.9000	19.9800
Import Rate	7.2808	11.3250	-18.7538	26.2855
Export Rate	6.4361	8.4853	-10.8784	21.9067
Income Inequality	0.4371	0.0273	0.3970	0.4900
Lending Interest Rate	6.6058	2.2913	3.4000	12.1000

Descriptive Statistics: Six variables have been used in this study's descriptive statistics analysis for 34 years of observation starting from the year 1990 to 2023. The variables include consumer price index growth rate, population growth rate, tax rate, import rate, export rate, income inequality and lending interest rate.

According to the descriptive statistics analysis result shown in Table 1, the import rate has the highest standard deviation, which is 11.325. A high standard deviation indicates that these rates have a greater dispersion of values compared to other variables. There is a significant difference from other variables, which could be due to a variety of factors such as economic fluctuations, which are changes in currency values that will affect import prices and volumes. A weaker domestic currency makes imports pricier and can reduce them, while a stronger currency makes imports cheaper and can increase them. Other factors could be the exchange rate volatility, changes in trade policies and also commodity prices volatility. Income inequality follows with the lowest value of standard deviation, which is 0.0273. A low standard deviation for income inequality rates suggests that the level of income inequality within a specific region or across a set of comparable regions is relatively stable and consistent over time. This could be because of the stable economic conditions. Stable economies with low unemployment and inflation tend to have more income distribution.

Meanwhile, the mean CPI is 2.53% with a standard deviation of 1.46%, suggesting moderate variability in inflation rates. The CPI ranges from -1.14% to 5.44%, indicating periods of both deflation and significant inflation, which directly impacts the cost of goods and services. The introduction of the Goods and Services Tax in Malaysia has been identified as a contributor to the rising cost of living (Sulaiman et al., 2019), which would be reflected in the CPI. The 1Malaysia People's Aid program's value is higher than the inflation CAGR value (measured by the Consumer Price Index value which is only around 2.65 percent over the same period) (Khan, Abdullah, Mat, Bakar, Ali, & Abdullah, 2018).

Population Growth Rate: The average population growth rate is 2.09% with a standard deviation of 0.63%. This steady growth, ranging from 1.09% to 2.92%, can influence demand for housing, infrastructure, and public services, thereby affecting living costs. Malaysia experienced relatively high birth rates during the 1980s and early 1990s, as the country was still in a phase of population expansion. The fertility rate was above replacement level, meaning more children were being born compared to the number of deaths, leading to rapid population growth. In 1990, the growth rate was approximately 2.92%, which decreased to 1.09% by 2023 (Macrotrends, 2025). Declining population growth can also lead to potential labor shortages in certain sectors, potentially driving up labor costs and consequently increasing the prices of goods and services produced by labor-intensive industries. Moreover, a smaller workforce may impact economic growth and development, which could in turn affect income levels and overall economic prosperity, ultimately influencing the cost of living for individuals and households. It is crucial to acknowledge that the relationship between population

growth and cost of living is intricate and influenced by a multitude of factors, including economic development, government policies, and global economic conditions.

Tax Rate: The average tax rate is 15.41% with a standard deviation of 2.80%. Fluctuations in the tax rate, which range from 10.90% to 19.98%, can significantly alter disposable income and business profitability, influencing both consumer spending and overall economic activity. Tax policies like sales and service taxes have a substantial impact on consumer finances in Malaysia. An efficient public administration is essential to collect taxes efficiently, which necessitates a requirement of a good quality of governance (Hassan, Mahmood, Tahir, Alkhateeb, & Wajid, 2021). As of 2022, the tax-to-GDP ratio has increased slightly to 11.70%, highlighting the ongoing struggle in maintaining a robust tax revenue framework amid changing economic conditions. According to the research that has been carried out, it was found that Malaysia's tax structure is quite narrow, with a strong emphasis on direct taxes compared to indirect taxes such as sales tax or value-added added (Rabi & Mansor, 2024). For instance, the introduction of the Goods and Services Tax (GST) from April 2015 to September 2018 generated significant income, which demonstrates the tax's effectiveness in raising government revenue. Although Malaysia's tax collection varies relative to GDP, addressing structural faults in the taxation system is critical for long-term economic stability. Additionally, more study explores the factors that impact tax revenue, highlighting key determinants that affect collection efficiency (Das, 2024). This study shows that increasing the compliance rate, broadening the tax base, and improving the efficiency of tax administration are important to increase Malaysia's tax-to-GDP ratio. Thus, as Malaysia recovered economically from the pandemic, redesigning its tax structure is essential to increase fiscal capacity, ensure long-term growth and fund essential public services.

Import Rate: The mean import rate is 7.28% with a high standard deviation of 11.33%, indicating substantial variability. The import rate ranges from -18.75% to 26.29%. High variability in import rates can lead to price volatility for imported goods, affecting the cost of living, especially for items heavily reliant on imports. This study demonstrates that the import rates significantly influence both the cost of living and the consumer price index (CPI). When the country relies heavily on imported goods, the higher import rates whether it is from taxes or any unfavorable currency exchange rates can cause the prices of goods to increase. Increasing the price of goods will increase the household expenses especially for essential items such as food, clothing and electronics. Table 3 shows that, the minimum value for the import rate was recorded in 1998. In 1998, Malaysia recorded its drastic decline in import growth rate at -18.75%, which was primarily a result of the Asian Financial Crisis (1997-1998). The crisis started in mid-1997 due to currency devaluations in Thailand and quickly spread throughout the region. The Malaysian Ringgit (MYR) faced severe depreciation, falling significantly against the US Dollar. This devaluation increased the cost of imports, as purchasing foreign goods became more expensive for Malaysian businesses and consumers, leading to a sharp decline in import volumes as demand for imported products diminished. With a reduction in consumption, investment, and government spending, the country's growth was expected to rely primarily on net exports. Initially the crisis caused a drop in imports of luxury items as domestic demand weakened due to the Ringgit's depreciation (Ariff & Abubakar, 1999). While the maximum rate for import is 26.29% which happened in the year 1990, because in the late 1980s and early 1990s, Malaysia experienced significant economic growth driven by industrialization, export-focused manufacturing, and infrastructure expansion. This growth led to the higher demand for imported machinery, raw materials and technology to support both industrial and construction sectors.

When there is a huge difference between the minimum and maximum values, this study expects that there will be a huge difference in standard deviation values also. The value for standard deviation is 11.32505 relatively high value, especially when compared to the mean import rate of 7.280841. Import is highly responsive to shifts in economic growth. During an economic boom, imports tend to surge as demand for goods and services increases. On the other hand, during an economic downturn, imports usually decrease significantly due to the lower demand for goods and services. The high standard deviation reflects the significant impact of the Asian Financial Crisis on import rates. The crisis caused a sharp currency depreciation and economic recession in many countries including Malaysia.

Export Rate: The average export rate is 6.44% with a standard deviation of 8.49%. The export rates range from -10.88% to 21.91%. Fluctuations in export rates can impact a country's trade balance and economic health, indirectly influencing employment levels and income, and consequently, the cost of living. Malaysia's export

rate showed significant variations throughout the period, with notable peaks and troughs driven by key export sectors including the Electronics and Electrical (E&E), palm oil, and rubber industries. Based on the historical event of the 2008 Global Financial Crisis, where the export rate declined to 2.3% while the CPI growth rate peaked at 5.44%, particularly impacted by the E&E sector which accounted for the largest share of Malaysia's exports during this period. The interconnected relationship between export performance and living costs continued to be evident in subsequent years, as shown by the sharp decline in export rates to -12.7% in 2009, coinciding with a dramatic drop in CPI growth to 0.58%. Malaysia's position as a major exporter of palm oil and rubber made these commodities significant contributors to export earnings, with their performance directly influencing domestic price levels and cost of living throughout these periods (Hassan et al., 2021).

The minimum export rate of -12.7% recorded in 2009 had substantial implications for Malaysia's cost of living metrics, particularly due to the underperformance of major export sectors. According to Khushairi et al. (2019), this sharp decline in exports, especially in the E&E sector and commodity exports like palm oil and rubber, coincided with significant changes in domestic price levels, as evidenced by the CPI growth rate dropping to 0.58% in the same year. This pattern of export-driven impact on living costs continued to be visible in recent years, as shown by the data from 2020, where exports fell by -7.9% while the CPI growth rate reached -1.14%, before recovering strongly in 2021-2022 with export rates of 21.2% in 2021 and 15.9% in 2022 respectively. These fluctuations in export performance, particularly in key sectors like E&E, palm oil, and rubber, corresponded directly with changes in CPI growth rates of 2.48% and 3.38%, demonstrating how these major export industries consistently influenced domestic living costs throughout the observed period.

Income Inequality: The mean income inequality is 0.44 with a low standard deviation of 0.03. The income inequality ranges from 0.40 to 0.49. Persistent income inequality can lead to social disparities and affect overall economic stability, potentially influencing the cost of living for different segments of the population. Income inequality in Malaysia, as measured by the Gini coefficient, has shifted significantly over time due to economic changes and the impact of social policies. The highest reported Gini coefficient was about 0.4900 in 1998. It represents Malaysia's high-income inequality, which is closely related to the wider financial instability caused by the Asian Financial Crisis. It led to an increase in the unemployment rate from more than 2.5% in 1997 to more than 6% in 1998, along with many business closings and job losses. The recession hit low-income households disproportionately, exacerbating existing inequalities. The Malaysian government implements policies to encourage low-income people and transfer resources to bridge this gap. With the implementations, the Gini coefficient has been lowered to the lowest value of about 0.3970 by 2023. A study published in highlighted that Malaysia has effectively reduced income inequality, especially among ethnic groups. According to research, real per capita GDP growth and government redistributive efforts, such as progressive taxation and cash transfers to low-income households, have played an important role in reducing income inequality over time (Goh, Wong, Ayupp, & Lai, 2023).

However, this decline in inequality is a short-term trend. A small increase in the Gini coefficient to about 0.407 by 2023 indicates that income inequality is increasing. The economic disruption due to the COVID-19 pandemic, which mainly affects low-income groups and start-ups that are less prepared to deal with financial problems, is partly responsible for this rise (Department of Statistics Malaysia, 2023). As industries such as tourism and retail suffer severe downturns, many people find they have no steady income or job security. The consequences of increasing income inequality are particularly significant when considering the cost of living in Malaysia. Moreover, low-income households find it more challenging to meet their basic needs as the cost of living rises. This creates a loop in which increased spending exacerbates current disparities, preventing low-income households from improving their financial status (Azmi, 2023). Even though the government has made several initiatives, the challenges remain to tackle the issue.

Lending Interest Rate: The average lending interest rate is 6.61% with a standard deviation of 2.29%. The lending interest rate ranges from 3.40% to 12.10%. Variability in lending interest rates directly impacts borrowing costs for consumers and businesses, affecting spending, investment, and the affordability of housing and other major purchases. Low interest rates can reduce borrowing costs and support economic growth, while higher rates may curb inflation but also dampen economic activity. The Overnight Policy Rate (OPR) affects the interest rates. Meanwhile, among the ASEAN countries, Malaysia's lending rate is ranked the second-highest in 2022. This could be due to a high-risk premium demanded by lenders in Malaysia. The lending rate in Malaysia

remains sustainable due to robust macroeconomic fundamentals. According to Bank Negara, the lending rate in Malaysia is still manageable.

Table 2: Correlation

	Consumer Price Index	Population Growth Rate	Tax Rate	Import Rate	Export Rate	Income Inequality	Lending Interest Rate
Consumer Price Index	1.0000	0.3979	0.4749	0.2355	0.4315	0.3642	0.5194
Population Growth Rate		1.0000	0.8595	0.3324	0.4452	0.8976	0.8697
Tax Rate			1.0000	0.2611	0.3437	0.7488	0.8117
Import Rate				1.0000	0.9184	0.2242	0.1475
Export Rate					1.0000	0.3706	0.3547
Income Inequality						1.0000	0.8018
Lending Interest Rate							1.0000

Correlation: Based on Table 2, this study discovered that most of the independent variables, which are Population Growth Rate, Tax Rate, Income Inequality, and Lending Interest Rate are demonstrate correlations below the threshold of 0.9. However, a notable exception was identified between Import Rate and Export Rate, which showed a correlation of 0.918443, exceeding the critical threshold. This high correlation suggests potential multicollinearity between these two variables. At this point, while most variables appear independent, the relationship between Import Rate and Export Rate raises concerns. Therefore, this study proceeded with the Variance Inflation Factor (VIF) test to further investigate potential multicollinearity issues among all independent variables.

Table 3: Variance Inflation Factor

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
Tax Rate	0.0213	107.4042	3.3240
Import Rate	0.0004	1.5727	1.1030
Income Inequality	207.0670	815.5635	3.0838
Lending Interest Rate	0.0383	38.4011	4.0154
C	27.5506	565.6127	NA

Variance Inflation Factor: Based on the VIF result, tax rate, import rate, income inequality, and lending interest rate, centered VIF scores below 5. However, the population growth rate and export rate exceed 5. Hence, this study decided to drop the population growth rate and export rate because the VIF score was above 5 in the model due to the high correlation among them. After excluding both Population Growth Rate and Export Rate, all four remaining independent variables showed Centered VIF values well below the 5.0 threshold. These results indicate that the remaining variables are sufficiently independent of each other and suitable for inclusion in subsequent analyses. This final set of variables can now be confidently used in further preliminary tests and a regression model.

Table 4: Multiple Regression

Variables	Coefficient	T-Statistic	Prob.
Tax Rate	0.0814	0.5574	0.5815
Import Rate	0.0213	1.0282	0.3124
Income Inequality	-12.7206	-0.8840	0.3840
Lending Interest Rate	0.3563	1.8190	0.0793
R-squared	0.3169		
Adjusted R-squared	0.2227		
F-statistic	3.3638		
Prob. (F-statistic)	0.0222		
Number of Observations	34		
Durbin-Watson statistic	1.9069		

Based on the multiple regression analysis results, the F-statistic value is 3.3638 with a probability value of 0.0222, which is less than the critical threshold of 0.05, which is 5% significance level. This statistical evidence indicates that the study's overall regression model is significant and demonstrates good model fitness. This result validates that this study model, which examines the relationship between Cost of Living and the four independent variables of Tax Rate, Import Rate, Income Inequality, and Lending Interest Rate, is statistically fit and significant for further interpretation and analysis. The model's fitness is crucial in determining whether there exists a significant relationship between the dependent variable, Cost of Living and four independent variables of Tax Rate, Import Rate, Income Inequality, and Lending Interest Rate. In this research hypothesis testing framework, the null hypothesis (H0) suggests no relationship between the independent and dependent variables, while the alternative hypothesis (H1) suggests there is a relationship. Given that this study's probability value (0.0222) is less than the 0.05 threshold, this study has sufficient statistical evidence to reject the null hypothesis (H0) in favor of the alternative hypothesis (H1). This confirms that there is indeed a significant relationship between the four remaining independent variables and the cost of living in Malaysia.

The findings demonstrate that this study's regression model has a moderate explanatory power, with an adjusted R-square of 0.2227, indicating that this model explains 22.27% of the fluctuations in cost of living in Malaysia. According to the model, approximately 22.27% of the variation in the cost of living is attributed to Tax Rate, Import Rate, Income Inequality and Lending Interest Rate. While the remaining 77.73% of the variation is due to other factors that have been excluded from this study due to multicollinearity issues, like Population Growth Rate and Export Rate, as well as other potential factors that have not been included in this study's initial analysis. This moderate explanatory power is reasonable given that researchers are working with four independent variables after the necessary exclusion of other variables through the Variance Inflation Factor Test. The remaining unexplained variation in the model suggests that while Tax Rate, Import Rate, Income Inequality and Lending Interest Rate is a significant factor in determining cost of living, as confirmed by this study F-statistic and probability values, other important variables influence living costs in Malaysia, indicating potential areas for future research to explore additional factors that could affect the cost of living in Malaysia.

The findings presented in Table 4 indicate that the Tax Rate is an insignificant factor influencing the Cost of Living in Malaysia. This is demonstrated by a probability value (p-value) of 0.5815, which is notably higher than the tolerance threshold value of 0.10. This p-value indicates a lack of statistical significance, falling below the 90% confidence level. Consequently, this study fails to reject the null hypothesis (H0) that there is no significant relationship between Tax Rate and cost of living and cannot accept the alternative hypothesis (H1) that there is a significant relationship between Tax Rate and Cost of Living in Malaysia.

According to Table 4, the Import Rate is an insignificant factor influencing the Cost of Living in Malaysia. This is demonstrated by a probability value (p-value) of 0.3124, which is higher than the tolerance threshold value of 0.10. This p-value indicates a lack of statistical significance, falling below the 90% confidence level. Consequently, this study fails to reject the null hypothesis (H0) that there is no significant relationship between Import Rate and cost of living and cannot accept the alternative hypothesis (H1) that there is a significant relationship between Import Rate and cost of living in Malaysia.

The findings presented in Table 4 indicate that Income Inequality is not a statistically significant factor influencing the cost of living in Malaysia. This is demonstrated by the t- t-statistic of -0.8840, with a p-value of 0.3840, which is greater than the tolerance threshold value of 0.10. This p-value indicates a low level of statistical significance, falling below the 90% confidence level as it exceeds the tolerance threshold value of 0.10. Consequently, this study fails to reject the null hypothesis (H0) that there is no significant relationship between Income Inequality and cost of living and cannot accept the alternative hypothesis (H1) that there is a significant relationship between Income Inequality and Cost of Living.

The information in Table 4 provides evidence that the Lending Interest Rate is a statistically significant factor influencing the cost of living in Malaysia. This is demonstrated by the t-statistic of 1.8190, with a p-value of 0.0793, which is less than the tolerance threshold value of 0.10. This p-value indicates a high level of statistical significance, exceeding a 90% confidence level, as it falls below the tolerance threshold value of 0.10. Consequently, this study confidently rejects the null hypothesis (H0) that there is no significant relationship between Lending Interest Rate and cost of living and accepts the alternative hypothesis (H1) that there is a significant relationship between Lending Interest Rate and cost of living.

Table 5: Regression Results Summary

Independent Variable	Hypotheses (+/-)	Result (Significant/ Insignificant)	Confidence Level (%)	Support to Hypotheses (Yes/ No)
Tax Rate	Positive	Insignificant	-	No
Import Rate	Positive	Insignificant	-	No
Income Inequality	Negative	Insignificant	-	No
Lending Interest Rate	Positive	Significant	90	Yes

Discussion

The first independent variable, tax rate, shows a p-value of 0.5815, indicating the tax rate does not significantly influence the cost of living in Malaysia. This is evidenced by a probability value of 0.5815, which exceeds the tolerance threshold of 0.10. This p-value suggests a lack of statistical significance, as it falls below the 90% confidence level. Therefore, the study does not reject the null hypothesis, indicating no significant relationship between the tax rate and the cost of living, and it cannot accept the alternative hypothesis that such a relationship exists. This result aligns with earlier research by Mainal et al. (2024), who found a similar positive connection between these variables. Likewise, this theory is supported by the studies of Gillingham and Greenlees (1987; 1990). Thus, the findings of Mainal et al. (2024), Gillingham and Greenlees (1987;1990) were consistent with this study's conclusion regarding the directional relationship between Tax Rate and Cost of Living, though the study findings differ in terms of statistical significance. Several interconnected reasons can explain the positive link between Tax Rate and Cost of Living, even though this study's results show a statistically insignificant link. Rising tax rates often result in increased financial burdens on households, affecting their ability to meet basic needs such as food, housing, and transportation.

According to Gillingham and Greenlees (1990), the U.S. Bureau of Labor Statistics' Tax and Price Index (TPI) methodology provides a more comprehensive assessment of how taxes influence living costs compared to the traditional Consumer Price Index (CPI). This expanded perspective demonstrates that direct taxes, including income taxes and Social Security contributions, have meaningful impacts on consumer living costs, offering significant insights into the overall effects of taxes on household expenses and living standards. The positive relationship between Tax Rate and Cost of Living identified in this study is particularly significant given the Malaysian economic context. As demonstrated by Mainal et al. (2024) through their 30-year data analysis, the impact of direct taxation on household budgets creates a ripple effect throughout the economy. When taxes increase, households face greater financial constraints in meeting their basic needs, leading to an overall increase in the cost of living. This relationship suggests that policymakers need to carefully consider the broader implications of tax policies on household economic well-being, as changes in tax rates have

demonstrable effects on living costs across different socioeconomic groups.

The second independent variable, import rate does not significantly affect the cost of living in Malaysia. This is evidenced by a probability value of 0.3124, which exceeds the tolerance threshold of 0.10. This p-value suggests a lack of statistical significance, as it is below the 90% confidence level. Therefore, this study does not reject the null hypothesis that there is no significant relationship between the import rate and the cost of living, nor can it accept the alternative hypothesis that such a relationship exists in Malaysia. The Import Rate variable has a positive coefficient of 0.0213, which means that for every one unit increase in Import Rate, the cost-of-living increases by 0.0213 units, though this relationship is statistically insignificant. This result aligns with earlier research by Muarief et al. (2024), who found a similar positive connection between these variables. Likewise, this theory is supported by the studies of Mbutor (2014) and Nayanathara et al. (2023). Thus, the findings of Muarief et al. (2024), Mbutor (2014), and Nayanathara et al. (2023) were consistent with this study's conclusion regarding the directional relationship between Import Rate and cost of living, though this study's findings differ in terms of statistical significance. Several interconnected reasons can explain the positive link between the Import Rate and the cost of living, even though the study results show statistical insignificance. Increasing imports often leads to exchange rate depreciation, which can heighten inflationary pressures and subsequently affect living costs.

According to Muarief et al. (2024), when a country increases its imports, it can lead to depreciation of the exchange rate, which creates inflationary pressures. The study explains that this effect is particularly pronounced when importing raw materials, as a depreciating local currency increases the expense of these imports. Consequently, the cost of producing finished goods rises due to the higher prices of raw materials, contributing to increased inflation and ultimately higher living costs. The study emphasizes the direct connection between import levels and inflationary pressures that affect household living costs. Imports can directly influence domestic inflation through the prices of imported goods included in the Consumer Price Index. Additionally, imports impact inflation indirectly by creating competition between local goods and services and imported alternatives. When a country imports raw materials, a depreciating local currency increases the expense of these imports. Consequently, the cost of producing finished goods rises due to the higher prices of raw materials. Therefore, higher import levels generally contribute to the increase in inflation that leads to a high cost of living. Subsequently, tariffs can make imported goods more costly, which raises the cost of living and changes consumer spending habits (Fong & Mohs, 2020).

The third independent variable, income inequality, is not a statistically significant factor influencing the cost of living in Malaysia. This is demonstrated by the t-statistic of -0.8840, with a p-value of 0.3840, which exceeds the tolerance threshold value of 0.10. This p-value indicates a low level of statistical significance, as it falls below the 90% confidence level. Consequently, this study fails to reject the null hypothesis that there is no significant relationship between income inequality and the cost of living, and it cannot accept the alternative hypothesis that there is a significant relationship between income inequality and the cost of living. The Income Inequality variable has a negative coefficient of -12.7206, which means that for every one unit increase in Income Inequality, the cost-of-living decreases by 12.7206 units. However, this relationship is not statistically significant as indicated by the p-value. This result aligns with earlier research by Kelly (2018), who found that income inequality contributes to social and economic inequality, particularly affecting basic needs such as housing, groceries, job opportunities, and financial mobility. The findings of Azmi et al. (2023) support the complex relationship between income inequality and cost of living, noting that even when workers earn above poverty levels, this does not necessarily translate to improved living conditions. Their research demonstrates that small increases in income often fail to adequately address rising living costs, suggesting that the relationship between income inequality and cost of living is influenced by multiple factors beyond simple linear correlation. According to Moretti (2010), it highlights that accounting for cost-of-living differences reduces real inequality in income, but it does not prove that there is a relationship between inequality in income and changes in the cost of living. Even if the income gap decreases, like by raising the minimum wage, the cost of living does not automatically decrease. Inflation and other economic variables are more likely to affect affordability. This suggests that while this study's statistical analysis shows an insignificant relationship, the practical impact of income inequality on the cost of living may be more nuanced and complex than what can be captured in a simple linear relationship. Further support comes from Seow (2022), who identifies the widespread challenge of achieving minimum acceptable living standards among low-wage workers globally. This research highlights

how the relationship between income inequality and cost of living is a universal concern, even though this study's statistical analysis for Malaysia shows an insignificant relationship. The study emphasizes that the impact of income inequality on living costs might be influenced by various other economic and social factors that could mask or complicate the direct statistical relationship observed in this study analysis.

Finally, the lending interest rate significantly influences the cost of living in Malaysia. The t-statistic of 1.8190, coupled with a p-value of 0.0793, indicates a high level of statistical significance, surpassing a 90% confidence level. Therefore, the study rejects the null hypothesis, affirming a notable relationship between the lending interest rate and the cost of living. As lending interest rates rise, borrowing becomes more expensive for consumers and businesses, leading to increased costs for goods and services, which in turn elevates the overall cost of living. This finding underscores the critical role of monetary policy in managing inflation and maintaining economic stability. The Lending Interest Rate variable has a positive coefficient of 0.3563, which means that for every one unit increase in Lending Interest Rate, the cost-of-living increases by 0.3563 units. This result aligns with recent research by Crawford (2024), who found that fluctuating interest rates significantly influence living costs through their impact on mortgage payments, demonstrating a positive relationship between interest rates and the cost of living. The findings of Bolhuis, Koosakul, and Shenai (2024) strongly support these study results, as their research demonstrates how higher interest rates directly affect household cost of living through increased mortgage payments, car payments, and other credit payments required for everyday financing. Their study provides substantial evidence for the positive relationship between lending interest rates and cost of living, confirming this study statistical findings. This aligns with Sari et al. (2022) assertion that elevated interest rates generally increase borrowing costs, discouraging consumers and businesses from acquiring loans for expenditures or investments.

According to Wahab et al. (2018), the persistent problem of rising living costs in Malaysia has been exacerbated by sharp increases in housing prices over the past decade. Their research specifically highlighted how interest rates contribute to this issue, providing crucial context for understanding the significant positive relationship that researchers found between lending interest rates and the cost of living in this study analysis. The positive relationship between lending interest rates and the cost of living has profound implications for monetary policy and financial regulation in Malaysia. This study shows that lending interest rates are a significant factor that influences the cost of living, which highlights the need for a comprehensive economic strategy that integrates monetary policy and financial regulation to improve living standards and promote sustainable economic development.

5. Implications and Recommendations

This section delves into the implications of the study's findings and proposes actionable recommendations for policymakers, businesses, and future researchers. By understanding the relationships between key economic indicators and the cost of living in Malaysia, stakeholders can develop informed strategies to promote economic stability, improve living standards, and foster sustainable development. The recommendations aim to provide practical guidance for addressing the challenges and opportunities identified in the research, ultimately contributing to a more prosperous and equitable society. As Malaysia navigates evolving economic landscapes, these insights offer valuable perspectives for shaping effective policies and practices.

This study provides crucial insights for the Ministry of Domestic Trade and Cost of Living, particularly highlighting the significant positive relationship between lending interest rates and the cost of living in Malaysia. The findings emphasize that increases in lending interest rates directly contribute to higher living costs for Malaysian households, primarily through increased borrowing costs for essential purchases such as housing, vehicles, and consumer goods. This relationship underscores the critical need for the Ministry to work closely with Bank Negara Malaysia (BNM) in developing comprehensive strategies to manage lending interest rates effectively. The Ministry should prioritize policies that can help mitigate the impact of high lending rates on household expenses, particularly for low- and middle-income families who are most vulnerable to interest rate fluctuations. To address these challenges, the Ministry should consider implementing a multi-faceted approach to cost management. This could include developing targeted financial assistance programs that offer subsidized interest rates for essential purchases, particularly for lower-income households. Additionally, the Ministry should strengthen its collaboration with financial institutions to create specialized loan products with

more favorable terms for essential purchases. The study's findings also suggest that the Ministry should enhance its monitoring and regulatory framework to ensure lending practices remain fair and transparent, preventing predatory lending that could exacerbate living costs. Furthermore, the Ministry could work on developing comprehensive financial education programs to help households better understand and manage their borrowing costs, thereby making more informed financial decisions that could help mitigate the impact of high lending rates on their cost of living.

For the Federation of Malaysian Consumers Association (FOMCA), this study's findings regarding the significant relationship between lending interest rates and cost of living present important implications for their advocacy work. FOMCA should intensify its efforts to lobby for more consumer-friendly lending policies and regulations, particularly given the direct impact of lending rates on household expenses. The association can use this research to support their calls for a comprehensive Consumer Credit Act that would better regulate lending practices and protect consumers from excessive interest rates. Furthermore, FOMCA should focus on developing strategic partnerships with financial institutions to create more affordable financial products specifically designed for low- and middle-income households. The association should also expand its role in consumer education and protection by developing targeted programs that help consumers understand the relationship between lending rates and living costs. FOMCA can use this study's findings to advocate for more transparent lending practices and push for policies that require financial institutions to clearly communicate the impact of interest rates on total repayment amounts. Additionally, FOMCA should work towards establishing a monitoring system that tracks changes in lending rates and their subsequent effects on household expenses, providing regular updates and recommendations to both consumers and policymakers. This proactive approach would help ensure that consumer interests are better protected in the face of fluctuating lending rates.

For Malaysian consumers, this study's findings highlight the critical importance of understanding how lending interest rates directly affect their cost of living. The significant positive relationship between lending rates and living costs emphasizes the need for consumers to be more strategic in their financial planning and borrowing decisions. Consumers should actively monitor interest rate trends and consider the timing of major purchases or loans to take advantage of more favorable lending conditions. Furthermore, the study suggests that consumers should prioritize financial literacy and education to better understand how different types of loans and interest rates can impact their monthly expenses and overall financial well-being. The research findings also indicate that consumers should take a more proactive approach to managing their existing loans and seeking out more favorable lending terms when available. This could include exploring options for loan consolidation, refinancing existing loans during periods of lower interest rates, and comparing different financial institutions to secure the most competitive rates. Additionally, consumers should consider participating in government-sponsored financial assistance programs or seeking guidance from financial advisors to optimize their borrowing strategies. The study's results emphasize the importance of building emergency savings and maintaining good credit scores to qualify for better interest rates, thereby reducing the overall impact of lending rates on their cost of living.

For future researchers, this study's identification of lending interest rates as a significant factor affecting the cost of living in Malaysia opens up several important research directions. The moderate regression models result suggests that there are other significant factors influencing living costs that warrant further investigation. Researchers should consider expanding the scope of variables examined, particularly focusing on the interaction between lending rates and other economic indicators that might have been excluded from this study. Furthermore, future research could explore the differential impacts of lending rates on various demographic groups, income levels, and geographical regions within Malaysia to provide more nuanced insights for policy development. Additionally, researchers should consider conducting longitudinal studies to better understand how the relationship between lending rates and living costs evolves over time, particularly in response to various economic policies and global economic conditions. The development of more sophisticated econometric models that can capture both direct and indirect effects of lending rates on household expenses would be valuable for policy formulation. Future studies could also benefit from incorporating qualitative research methods to better understand how households adapt their financial behaviors in response to changes in lending rates. This mixed-methods approach could provide more comprehensive insights into the mechanisms through which lending rates impact living costs and help identify

more effective policy interventions to manage these effects.

Several limitations were identified in this study that potentially impacted its comprehensiveness and results. The first significant limitation relates to the unavailability of complete historical data for potentially influential variables, particularly the Government Subsidy Rate. While reviewing past literature, this study identified Government Subsidy Rate as a crucial variable that could significantly impact the cost of living in Malaysia. However, reliable data for this variable was only available from 1996 forward, falling short of this study required 34-year timeframe. This data limitation forced the exclusion of this potentially important variable, which might have contributed to the study's relatively modest adjusted R-squared value of 22.27%. The inclusion of government subsidy data could have provided more comprehensive insights into cost-of-living dynamics and potentially improved the model's explanatory power. A second limitation concerns the generalizability of the study's findings beyond the Malaysian context. The research findings, particularly the significant relationship between lending interest rates and cost of living, are specifically contextualized within Malaysia's unique economic, social, and regulatory framework. Different countries operate under varying monetary policies, financial regulations, and economic structures, which could lead to substantially different relationships between lending interest rates and living costs. For instance, while this study found lending interest rates to be a significant factor in Malaysia's cost of living, this relationship might not hold true or might manifest differently in other Asian or global economies due to variations in financial systems, regulatory frameworks, and economic policies. This limitation of geographical scope restricts the applicability of this study findings to other countries and emphasizes the need for country-specific analyses of cost-of-living determinants.

The third limitation relates to the study's reliance on time series data without integration of other data types such as panel and cross-sectional data. This singular focus on time series data has resulted in potential gaps in understanding the full complexity of cost-of-living dynamics across different demographic and geographical segments within Malaysia. The absence of integrated data sources has made it challenging to conduct comprehensive cross-sectional analyses that could reveal how the impact of lending interest rates varies across different income groups, regions, or urban-rural divisions. Moreover, the complexity involved in examining combined data types would have required sophisticated statistical methodologies and extensive resources beyond the scope of this undergraduate study. This limitation may have resulted in a more simplified view of the cost-of-living phenomenon than what might be revealed through a more integrated data approach.

Another significant limitation encountered in this study relates to the accessibility of certain critical economic indicators, particularly the Overnight Policy Rate (OPR) data. Many high-quality economic datasets are housed within subscription-based international organizations and proprietary databases, making access challenging for undergraduate researchers with limited institutional resources. This accessibility constraint forced the study to exclude potentially valuable variables that could have enhanced researchers understanding of cost-of-living dynamics in Malaysia. The restriction in accessing comprehensive financial and economic data may have limited this study ability to explore additional aspects of the relationship between monetary policy instruments and living costs, potentially affecting the completeness of this study analysis. The final limitation concerns the relatively limited selection of independent variables included in the final model. With an adjusted R-squared value of only 22.27%, the model explains less than a quarter of the variation in the cost of living, indicating that 77.73% of the variation is attributed to factors not captured in this study. This suggests that several important variables influencing the cost of living were not included in this study analysis. The limitation in variable selection may be attributed to various factors, including data availability constraints, the scope of literature review, and the focus on specific economic indicators. The exclusion of potentially significant variables may have contributed to the model's relatively low explanatory power. This limitation highlights the complexity of cost-of-living determinants and suggests the need for a more comprehensive variable selection in future research. Based on recent literature and empirical evidence, future studies should prioritize the inclusion of a more comprehensive set of variables identified as significant determinants of living costs. Drawing from Azmi et al. (2023) and Ismail et al. (2022), researchers should incorporate variables such as transportation costs, food prices, and utility expenses alongside the already identified factors of government subsidies, housing costs, education expenses, and healthcare costs. This expanded variable selection would help address the current model's limited explanatory power of 22.27% adjusted R-squared and provide a more complete picture of cost-of-living determinants.

Conclusion

This study was conducted to determine the factors contributing to the cost of living among households in Malaysia, utilizing time series data spanning 34 years from 1990 to 2023, sourced from the World Bank, Macro Trends, and the Department of Statistics Malaysia (DOSM). The investigation employed Ordinary Least Squares (OLS) regression analysis to examine the relationship between the cost of living as the dependent variable and six independent variables, which is consumer price index growth rate, population growth rate, tax rate, import rate, export rate, income inequality, and lending interest rate. Through rigorous preliminary testing, including correlation analysis and multiple rounds of Variance Inflation Factor (VIF) test, two variables which is Population Growth Rate and Export Rate were excluded due to multicollinearity issues. This result leaving four independent variables in the multiple regression analysis which is Tax Rate, Import Rate, Income Inequality, and Lending Interest Rate. The empirical findings from the multiple regression analysis, which demonstrated overall model significance with an F-statistical probability of 0.0222 and an adjusted R-squared of 0.2227, revealed that among the four remaining independent variables, only the Lending Interest Rate showed a significant positive relationship with the cost of living in Malaysia. This significant relationship indicates that changes in lending interest rates substantially impact household living costs, likely through their influence on borrowing costs for housing, vehicles, and other consumer goods. The model's adjusted R-Squared of 22.27% suggests that while lending interest rates play a crucial role in determining living costs, there are other potential factors not captured in this study that warrant further investigation. Henceforth, through these findings, this study successfully achieved its research objective by identifying lending interest rates as a significant factor affecting the cost of living among Malaysian households, while also highlighting the complexity of cost-of-living determinants in the Malaysian economic context.

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