The Effect of Macroeconomics Factors on Happiness in Malaysia

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Abstract

Many past studies concentrate on the relationship between macroeconomic factors and happiness. There is, however, very little empirical research on the same subject available in the case of Malaysia. Therefore, this study examines the effect of selected macroeconomic factors on levels of happiness in Malaysia. The time period considered in this study is from the year 2004 to 2021, and the data obtained come from various sources. To achieve the objective, data are analyzed by using the descriptive statistic tests and the multiple regression test. Output from multiple regression test provides an indication that the government expenditure (G) factor has a strong and positive association with happiness, while real GDP, on the other hand, recorded a negative relationship**.** This finding confirms the Easterlin paradox which made an assertion of a negative association between real GDP and happiness. Other than that, the positive relationship between government expenditures and happiness shows that increasing government spending over the years in schools, healthcare, road and infrastructure repairs, and social welfare has proven to improve happiness among Malaysians. The result for the inflation and unemployment test is positive and insignificant. These findings recommend that the Malaysian government should aim policies to promote people's happiness by considering relevant and significant macroeconomic determinants of happiness.

Keyword

Happiness, Macroeconomic factors, Easterlin Paradox, Malaysia, unemployment rate

INTRODUCTION

The entire world is going through many unexpected challenges over time; it has become an essential part of life for all to strive for happiness. All activities by humans, either related to economics, politics, social issues, the environment, or others are mostly driven forward to attain happiness. Keeping happiness as a common goal and target in people's lives, the United Nations (UN) identifies happiness as a balanced approach to economic growth that improves well-being overall. The UN also declared 20th March as International Day of Happiness to raise awareness of happiness in human life and its impact on well-being (Al-Bayati & Biroc, 2022). The Malaysian government also has started the initiative to measure the level of happiness, conducted for the first time by the Department of Statistics Malaysia (DOSM) in 2021 (DOSM, 2021). The creation of many indexes and measurements related to happiness; also known as Subjective Well-being (SWB), took place in stages, and until now the Malaysian government has started to include qualitative elements such as human, social, and environmental perspectives into the policy framework (Social Indicators, 2020).

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The study of happiness economics is relatively new compared to other research areas in the economics fields. The happiness economics area has been getting much attention from academia, worldwide researchers, and policymakers in economics and business field. Recent research also highlights the importance of equipping graduates with competencies that are increasingly relevant to modern economies, such as Information and Communication Technology (ICT) skills, which play a vital role in both employability and perceived well-being (Ediagbonya & Aghatise, 2023). The study of happiness economics is applicable to all the countries worldwide, developed or developing nations, as happiness or SWB is a "universal" goal of every individual. Since happiness is a prime goal of every human being in the world, to date, academia, researchers, and policymakers from different areas have started to discover the definitions and determinants of happiness (Bruni et al., 2021). Happiness, SWB, and life satisfaction are the concepts that are mutually interrelated and used interchangeably as empirical because they seem to measure very similar concepts (Easterlin, 1995; Buitrago, 2018; Sacks et al., 2010). Layard (2005), in his book, has argued that people enjoyed unparalleled economic growth over the last 50 years, in which people have better houses, cars, jobs, and holidays, which are supposed to make them happier according to standard economic theory. However, many happiness surveys worldwide show otherwise. This shows that we need to understand the determinants of happiness, and it should be the prime goal for government to maximize happiness. Discovering the sources of happiness is a major interest among researchers. According to Frey & Stutzer (2000; 2002; 2012), the determinants of happiness are divided into three categories, namely, institutional and political factors, microeconomics and macroeconomic factors, and personality and demographic factors.

Malaysia's real GDP registered positive growth of 5.6% in the first quarter (Q1, 2023) compared to a contraction of 1.7% in Q4 2022. The growth is supported by increasing domestic demand as Malaysia is in the endemic phase of Covid-19. According to Tan Sri Nor Shamsiah, governor of Bank Negara Malaysia, the economic outlook for Malaysia in 2023 is expected to improve further despite geopolitical uncertainty and weakening global demand (BNM, 2023). In addition, the inflation rate for April 2023 increased to 3.3% compared to March 2022, according to the Department of Statistics Malaysia (CPI, 2023). Meanwhile, Malaysia has been facing a plunge in its happiness level over the last four years, from 35th place in 2018, dropping to 80th place in 2019, 82nd in 2020, and 81st in 2021, according to the World Happiness Report by the United Nations Sustainable Development Solution Network (Helliwell et al., 2018; Helliwell et al., 2020; Helliwell et al., 2021).

In the past few decades, economists have provided reasonable empirical results on the correlation between happiness and macroeconomic factors such as high economic growth, financial crises and welfare distribution. Up to the present, the majority of the empirical research on the macroeconomic factors affecting happiness has been mainly focused on Western and European countries (Flavin, 2019; Dao, 2017; Esady, 2021), while only a small number of studies are on the Malaysian case have been done (Abounoori & Asgarizadeh, 2013; Boo et al., 2016; Li Fern, 2014). In relation to the issues discussed, the current study is to investigate further on the issue relating to contributing factors to happiness. In specific, this study attempts to examine the effect of macroeconomics factors on happiness in Malaysia. This study is considered important because the outcome is able to help the government in policy design in the mission to further improve the happiness level in the country.

The paper is organized as follows. Section 2 covers the literature review on macroeconomic factors affecting happiness. Section 3 comprises data and methodology, while section 4 discusses the empirical output followed by the conclusion in section 5.

LITERATURE REVIEW

The discovery of happiness in economics has mainly originated in the psychology field. The chapter written by Brickman (1971), in a book named 'Hedonic relativism and planning the good society' is considered the initial point of the new studies on happiness related to the economics field. In their study, they concluded that increasing the income and wealth level does not improve happiness after a certain level, according to adaptation theory. Easterlin (1974), in his study "Does Economic Growth Improve the Human Lot? Some Empirical Evidence" discussed the relationship between income and happiness in a country. The output shows that happiness and Gross Domestic Product (GDP) are positively correlated in the short term. Meanwhile, happiness levels and GDP are negatively related in the long run. This empirical finding, known as the "Easterlin Paradox" or the "Happiness-income paradox", is an important concept in happiness economics. This theory suggested that an increase in GDP did not increase the happiness level of the people (Easterlin, 1995, 2001, 2009). Until today, Easterlin still found the negative and long-term association between happiness and income but positively correlated in the short term (Easterlin, 2013).

The study by Clark et al. (2008), on the Easterlin Paradox uses a smaller sample of data, and the results show a contradicting relationship between happiness and economic growth. A study by Bjørnskov (2003), shows that the rising personal income of an individual has led to higher happiness in the country. Diener et al. (1993), find out that there is a positive relationship between income and subjective well-being in poorer or developing countries. Rising absolute income that leads to higher subjective well-being or happiness is stronger in developing countries compared to developed countries or Western countries (Clark, 2018; Pukelienė & Kisieliauskas, 2013).

Government acquisition and expenditures on goods and services intended to create future benefits, such as infrastructure investment or research spending, are classified as government investment. Government expenditures will influence people's happiness through various channels and in different directions (Dao, 2017; Kasmaoui & Bourhaba, 2017; Helliwell et al., 2023). A study conducted by Perovic & Golem (2010), shows that government expenditure positively affects happiness in transition countries. This significant result supports the standard neoclassical view that government is a benevolent actor and government intervention is beneficial in the economy. This result is almost similar to the latest study by Taherizadeh Anaripour et al. (2023), which finds a positive relationship with government and health expenditures for a large panel data sample.

Inflation, in other words, is diminishing purchasing power, and the parity of people will create those feelings such as reduced morale, national prestige, and exploitation. A study by Abu (2017), shows the trade-off between unemployment rate and inflation rate in terms of happiness, such as how much unemployment will be equivalent to a percentage change in inflation rate and vice versa, and the results show that unemployment affects happiness more compared to inflation rate. At the same time, Agan et al. (2009), suggest that the relationship between happiness and inflation rate is not a strong relationship. If inflation occurs by printing money or increasing the money supply in circulation, then it will lead to higher happiness for people in the short term. So, it will cause higher happiness that leads to higher growth of the economy, and people will increase the demand for products. If inflation is something unexpected by people, then it will cause them to be unhappy because higher inflation will result in lower purchasing power parity or a reduction in the real income of people. The latest study by Taherizadeh Anaripour et al. (2023), conducts panel data regression on 100 countries, determining the impact of inflation uncertainty and happiness, and the output shows that a 1% increase in the inflation uncertainty reduces the happiness level by 0.002%.

There are extensive studies that has been done on the relationship between unemployment and happiness level in a country (Clark, 2018; Barros et al., 2019). Cimpoeru (2022), in the latest study, finds that the unemployment rate negatively affects happiness in both the short run and the long run by using eleven European countries. So, the government tends to come up with employment protection policy for permanent jobs and unemployment benefits for those unemployed in order to improve happiness (Sameem & Buryi, 2019; Susanlı, 2018). Bruni et al. (2021), in their study claim that people tend to be negatively affected in terms of happiness when they become unemployed. Negative affects on happiness are only one part, whereas they facing reduced self-worth, feel that they are not part of the society. Unemployment has a strong and negative impact on happiness in a large number of studies. In addition, the study also shows that hard-working people who are self-employed, on average, gain lower income and happiness compared to those working in organizations with higher pay.

METHODOLOGY

This section discusses model specification and the tests conducted in executing the analyses for the purpose of achieving the objective set earlier.

Model Specification

This study examines the effects of selected macroeconomic variables on happiness in Malaysia. In specific, the dependent variable is happiness, while the explanatory variables include real GDP (GDP), government expenditures (G), inflation rate (INF), and unemployment rate (UN). Given the lack of in-depth empirical analysis on happiness in Malaysia, therefore, the model is developed based on the previous research, namely; Guo and Hu (2011), Di Tella et al. (2001); and Babula & Mrzygłód (2013).

The basic model, which is developed based on the work of Li Fern (2014) and Abounoori & Asgarizadeh (2013), is presented as

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + u_t \quad (3.1)$$

Where Y represents the dependent variable (happiness), the others (X_1 and X_2) are independent variables. Meanwhile, equation 3.2 shows the functional model.

$$logY_t = \beta_0 + \beta_1 \log(X)_{1t} + \beta_2 \log(X)_{2t} + \beta_3 \log(X)_{3t} + \beta_4 \log(X)_{4t} + u_t \quad (3.2)$$

Where:
Y_t = Happiness (H)
X_{1t} = Gross Domestic Product (GDP)
X_{2t} = Government expenditure (G)
X_{3t} = Inflation rate (INF)
X_{4t} = Unemployment rate (UN)
u_t = error term

All independent variables, except for INF and UN, are natural log-transformed to decrease the complexity of "interactive" terms. The 18-years of data are collected for each variable to investigate the relationship between happiness and the independent variables. The coefficient β is expected to show the direction and magnitude of the relationship between the dependent and the independent variables. The dependent data are collected from the World Happiness Report

(Helliwell et al., 2022), while the independent variables are collected mainly from the Department of Statistics Malaysia (DOSM, 2022) on an annual basis. The selection of variables and units is based on past studies by Perovic and Golem (2010) and Abounoori and Asgarizadeh (2013). In order to achieve the objective, the data are processed by using the OLS multiple regression analyses.

Data Analysis

To get an overview of data characteristics, data is analyzed by using descriptive statistics. Descriptive statistics is a data analysis technique utilized to explain the basic features of the secondary data used in a study. It presents simple summaries about the data and the measures, such as mean, median, standard deviation, skewness, and kurtosis.

Next, data analysis continues to Multiple Regression Analysis by Ordinary Least Square (OLS) method. This test examines the relationship between the dependent (happiness) and the independent variables. All assumptions of the Classical Normal Linear Regression Model (CNLRM) must be fulfilled to apply OLS regression.

FINDINGS

The discussion in this section is divided into the following parts: descriptive statistic analysis, regression analysis and the diagnostic test analyses.

Descriptive Statistics Analysis

Table 1 shows the descriptive statistics for selected dependent and independent variables. Happiness has positive skewness, indicating that the distribution is skewed to the right side. The unemployment rate and inflation rate also have similar skewness, while real GDP and government expenditures represent negative skewness, in which the distributions are skewed to the left. In addition, kurtosis gives a measure of the tail of a distribution. The distribution of the variables in the data are platykurtic and not volatile for happiness, with government expenditures having kurtosis less than 3. Meanwhile, the unemployment rate and inflation rate are leptokurtic for their kurtosis of more than 3. As for the macroeconomic variables, government expenditures have the highest standard deviation (1.9194) compared to other variables.

Table 1: Descriptive statistics

	H	GDP	G	INF	UN
Mean	1.748281	13.71520	13.32680	2.152276	3.416667
Median	1.752802	13.75193	14.31809	2.097478	3.300000
Maximum	1.844051	14.03496	15.70713	5.440782	4.600000
Minimum	1.675001	13.22923	10.06235	-1.138702	2.900000
Std. Dev.	0.051689	0.252363	1.919432	1.473504	0.455360
Skewness	0.084187	-0.389714	-0.600975	0.016460	1.685129
Kurtosis	2.114239	1.959328	1.870185	3.487935	5.040296

The estimation of the Jarque-Bera test from Figure 1 shows that the p-value of Jarque-Bera (0.7640) is more than alpha, α (0.05). Hence, this model met the normality assumption based on the Classical Normal Linear Regression Model at a significant level of 5%. Table 2 can be expressed with the help of a normal distribution graph:

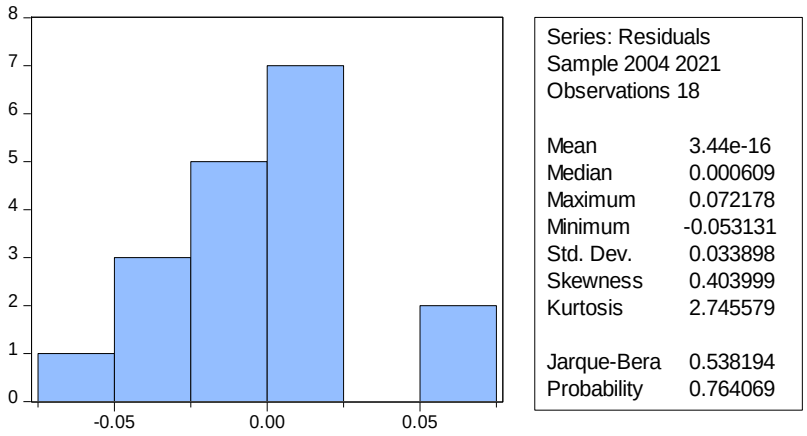

Figure 1: Normal distribution graph

The Regression Analysis

The multiple linear regression model for this study is as follows:

$$ln(H)_t = \beta_0 + \beta_1 \ln(GDP)_{1t} + \beta_2 \ln(G)_{2t} + \beta_3 (INF)_{3t} + \beta_4 (UN)_{4t} + u_t \quad (3.2)$$

$$H_t = 6.1647 - 0.3625GDP_{1t} + 0.0401G_{2t} + 0.0049INF_{3t} + 0.0029UN_{4t} + u_t$$

Table 2: Ordinary Least Squares (OLS) estimation

Variable	Coefficient	Probability	T-Statistic
C	6.164670	0.0001	5.731169
GDP	-0.362544	0.0014	-4.048398
G	0.040149	0.0058	3.293504
INF	0.004994	0.5139	0.671126
UN	0.002978	0.8972	0.131771
R-squared	0.569903		
Adjusted R-squared	0.437565		
Durbin Watson	1.757239		
S.E of regression	0.038764		

The results in Table 2 show that GDP and government expenditures are significant at the 5% level, except for inflation and unemployment. The GDP is negatively related with happiness. If the real GDP increases by one percentage point, on average, the happiness level will decrease by 0.36%, holding other variables constant. Meanwhile, government expenditures are found to be positively correlated to happiness in Malaysia. If the government expenditures increase by one percentage point, on average, the happiness level in Malaysia will increase by 0.04%, holding other independent variables constant. R-squared of the model, which is 0.5699, which indicates 56.99% of the changes in happiness can be explained by changes of the four independent variables.

Diagnostic Tests

To get the Best Linear Unbiased Estimator (BLUE), certain assumptions of the Classical Normal Linear Regression Model (CNLRM) must be fulfilled to proceed with the analysis. Hence, diagnostic checking will be carried out to ensure no econometric problems exist in the model, such as multicollinearity, heteroscedasticity, autocorrelation, and the CUSUM SQ test.

Multicollinearity Test

A multicollinearity test is carried out to assure no linear and non-linear relationship between independent variables. Multicollinearity only exists when some or all the independent variables are highly correlated. The VIF values for all the variables in this result are below the value of 10. Hence, no serious multicollinearity existed in this model, and no independent variable was excluded from the model. The values are 5.7782, 6.1938, 1.3604 and 1.1979, as shown in Table 3.

Table 3: Test for multicollinearity (centered VIF)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
GDP	0.008020	18076.30	5.778223
G	0.000149	322.3386	6.193785
INF	5.54E-05	4.433401	1.360354
UN	0.000511	72.60936	1.197978

Auto-correlation

Auto-correlation, also known as serial correlation, that arises only when there is a correlation or relationship among the error terms in this regression model. The auto-correlation problem is not allowed to be in the regression model since auto-correlation is not in the assumptions of the Classical Normal Linear Regression Model. Hence, the Breusch-Godfrey LM test will be utilized to detect the auto-correlation in the regression model.

Table 4: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.2982	Prob.F (2,11)	0.7479
Obs*R-squared	0.9259	Prob.Chi-Square (2)	0.6294

As shown in Table 6 above, the test rejects the hypothesis of no serial correlation between the variables, as the F-statistic, 0.2982, is higher than p=0.05. Therefore, the auto-correlation problem does not existed in the regression model.

Heteroscedasticity

Heteroskedasticity happens when the standard deviations of a predicted variable, monitored over different values of an independent variable or also as related to prior time periods, are non-constant (White, 1980). Heteroscedasticity is known as the variance of error terms not being constant, which causes the estimator to become inefficient. The Breusch-Pagan Godfrey test is a Lagrange multiplier test in which the null hypothesis of no heteroscedasticity is tested against heteroscedasticity.

Table 5: Breusch-Pagan-Godfrey

F-statistic	0.376126	Prob.F (4,13)	0.8216
Obs*R-squared	1.867079	Prob.Chi-Square (4)	0.7602

As shown in table 5 above, the test rejects the hypothesis that heteroscedasticity exists between variables, as the F-statistic, 0.8216, is higher than p=0.05. Hence, there is no heteroscedasticity problem in the regression model.

CUSUM SQ Test

CUSUM of squares (CUSUMSQ) test is used to detect the structure stability in the regression model. In addition, CUSUMSQ also detects the sudden changes and volatile situations in the regression model. Figure 2 shows the cumulative sum of squares of recursive residuals.

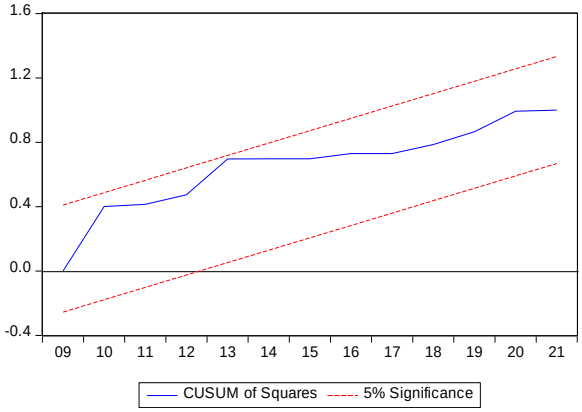

Figure 2: Plot of cumulative sum of squares of recursive residuals

Figure 2 shows that CUSUMSQ test are found to be within the critical bounds of 5%, which indicates that the model is stable.

CONCLUSION

This study attempts to examine the effect of selected macroeconomic factors on happiness in Malaysia. The results obtained from the regression analysis provide a suggestion that, relationship exists between GDP and G with Happiness. The significant negative relationship between GDP and Happiness is consistent with the findings of Easterlin & O'Connor (2022), who claim, the GDP does not increase the happiness in the long term due to social comparison of the respondents' income levels. The findings of the study also appear to be consistent with the Easterlin Paradox.

The other significant determinant detected in this analysis is the government expenditure (G) factor. The results show that government expenditure and happiness are having a positive association. Thus, higher government expenditure is translated into experiencing a higher level of happiness. This outcome supports the standard neoclassical theory in which government intervention is beneficial for the country. The government expenditure is considered as the overall and final public expenditures on goods and services. Government expenditure has many elements, including health, education, and national defence expenditures, and these expenditures have been found to be increasing the happiness level over time. This finding is consistent with the findings of Kasmaoui & Bourhaba (2017), who had detected a positive relationship between government expenditures and happiness.

The fact that level of happiness is associated with changes in GDP (-) and G (+); hence, the government can consider these two factors as tools for policy implementation to improve the level of happiness of the people. Compared the options between changes in GDP and government expenditure (G) in order to increase happiness, increasing G is preferable to decreasing GDP (income). This is because studies on the impact of changes in income on degree of happiness have a higher inclination to obtain mixed findings (Clark et al., 2008). With that regard, for the existing case, further analysis is recommended to be carried out to provide more enlightenment

on the focused issue. Advanced analysis also will allow us to detect the existence of symmetric or asymmetric relationships between the focused GDP-happiness variables.

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