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The Effect of Per Capita Income, Unemployment, And Internet Users on the Happiness Index of Asean Countries

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Abstract

This study aims to analyze the effect of per capita income, unemployment, and internet users on the happiness index in ASEAN countries during the period 2013–2022. This is a quantitative study using panel data regression. The research data was obtained from the official websites of the World Bank Data and World Happiness Index. The analysis results indicate that per capita income has a positive and significant effect on the happiness index, while the unemployment rate has a negative and significant effect. However, internet users do not have a significant effect on the happiness index. These results suggest that economic factors remain the primary determinant of happiness in the ASEAN region, while digital penetration has not yet fully reflected in improvements in societal well-being. This study is expected to provide input for governments in designing policies to improve welfare and the happiness index in the Southeast Asian region.

Keywords: Happiness Index; Per Capita Income; Unemployment; Internet Users; ASEAN

1. Introduction

The World Happiness Index, published in the World Happiness Report, is a measurement tool used to evaluate happiness levels in countries around the world. The report measures happiness based on various factors, including income, social support, healthy life expectancy, freedom to make life choices, generosity, and perceptions of corruption. The report was first published by the United Nations in 2012 and has since become an important reference in understanding subjective well-being in various countries [1]. Research indicates that happiness is not solely the result of economic conditions but is also influenced by social and psychological aspects, including social interaction and community support [2].

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These factors indicate that social welfare does not only depend on material aspects, but also on the quality of social relationships and the level of trust in institutions in a country. These findings are consistent with research conducted by [3], which analyzed data from the 2019 World Happiness Report to explore the relationship between macroeconomic factors and a country's happiness ranking. Their research results show that countries with strong social support and greater individual freedom tend to have higher happiness scores. In other words, policies that encourage social engagement and strengthen community networks can play an important role in improving overall community well-being.

In this context, this study focuses on the five founding members of ASEAN (ASEAN-5), namely Indonesia, Malaysia, the Philippines, Singapore, and Thailand. These five countries were selected not only because of their status as founding members with historical and strategic roles in shaping the regional framework, but also because they are considered to represent the most active economic and social dynamics in ASEAN. ASEAN-5 contributes the largest share to the region's Gross Domestic Product (GDP) and has higher levels of digital participation and more available and standardized statistical data [4]. Additionally, the happiness indices of these five countries reflect significant variations, ranging from the highest score in Singapore to a lower score

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in the Philippines during the 2013–2022 period. Therefore, the ASEAN-5 can serve as an initial benchmark for analyzing how economic and social factors contribute to happiness, while also providing a representative overview of happiness trends in Southeast Asia.

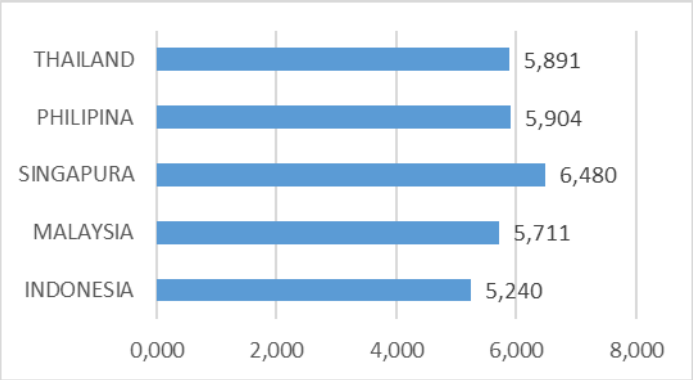

Figure 1.1 Ranking of the Happiness Index ASEAN Happiness Index 2022
Source: World Bank

As can be seen from Figure 1.1 above, happiness varies from country to country. Factors influencing happiness in ASEAN countries include economic aspects, such as GDP growth and income distribution, as well as social factors such as community support and interpersonal relationships. Research indicates that countries with stable economic growth and more equitable income distribution tend to have higher levels of happiness. Additionally, strong social support and community involvement in social activities also contribute to increased individual happiness [5].

2. Literature Review

2.1 Happiness Index

The Happiness Index, according to the World Happiness Report is a measure used to assess the level of well-being and happiness of a country based on the subjective perceptions of its people regarding their lives. The WHR adopts the concept of subjective well-being, which refers to the extent to which individuals assess the overall quality of their lives. According to Veenhoven [6], happiness is defined as the extent to which a person evaluates their overall life as good and satisfying. Happiness is not merely a fleeting feeling but a comprehensive evaluation of an individual's quality of life based on long-term experiences. Veenhoven emphasizes that happiness is influenced by external factors, such as social, economic, and environmental conditions, as well as internal factors, such as life expectancy and an individual's ability to cope with challenges. Thus, happiness is not something that is fixed but can change depending on how individuals adapt to their environment and how a country's policies support the well-being of its citizens.

2.2 Per Capita Income

Per capita income is one of the economic indicators used to measure a country's level of prosperity. Sukirno [7] explains that per capita income is the result of dividing the Gross Domestic Product (GDP) by the population of a country. The Easterlin Paradox theory, proposed by Richard Easterlin [8], explains that an increase in income only increases happiness up to a certain point. Once basic needs are met, additional income no longer has a significant impact on individual happiness. This is because other factors also play a role in happiness, such as health, security, social relationships, and work-life balance [9]. The World Happiness Report (WHR) also lists per capita income as one of the six main factors that influence a country's happiness [10]. Countries with higher per capita income tend to have better access to healthcare, education, and social infrastructure, which ultimately improves the well-being of their citizens. However, unequal income distribution can lead to social inequality, which has the potential to lower a country's happiness levels [11]. In the ASEAN region, there are significant differences in per capita income and happiness indices. Countries with high per capita income, such as Singapore and Malaysia, tend to have higher happiness indices than countries with lower per capita income, such as Indonesia and the Philippines. This is because countries with higher incomes generally have better access to infrastructure, healthcare services, and more stable economic policies [12].

2.3 Unemployment

According to Sukirno, unemployment occurs when workers try to find jobs but are unable to do so. This condition can have an impact on various aspects of life, including a decline in community welfare, reduced income, decreased consumption, and psychological effects due to loss of income. Clark & Oswald [13] found that the impact of unemployment on individual happiness is far greater than the impact of loss of income. This is due to the loss of social roles, self-esteem, and a sense of productivity

within society. Additionally, research by Di Tella et al. [14] revealed that societies with high unemployment rates tend to have lower levels of happiness, even if the country's economy is experiencing stable growth.

2.4 Internet Users

Büchi. M [15] explains that the use of digital media can have a direct positive impact on an individual's subjective well-being. Access to information, ease of communication, and social engagement through digital media are factors that strengthen the relationship between internet use and increased happiness. In this context, the internet can be seen as a means for individuals to gain control over their lives and expand their social connections, aligning with the subjective aspects of assessing happiness. In this regard, research by Andrasari et al. [16] indicates that internet use significantly contributes to economic growth, which in turn can enhance societal well-being.

3. Research Method

The research uses a quantitative method with an associative approach, which is a mathematical and systematic research method in its analysis process. In addition, this study is categorized as explanatory research because it aims to explain the causal relationship between independent and dependent variables tested through hypothesis testing.

The data analysis method used in this research is quantitative approach with a panel data method. It is called panel data because the data is a combination of time series and cross-section data. The time series data covers the period from 2013 to 2022, while the cross-section data includes the five founding countries of ASEAN. Data management uses statistical software, namely E-views, to obtain conclusions from the analysis that has been carried out. panel data regression as shown by the following equation:

$$HI_{it} = \beta 0 + \beta 1 PD_{it} + \beta 2 UNP_{it} - \beta 3 IPR_{it} + \varepsilon_{it}$$

Description :

HI = Happiness Index

β_0 = *Intercept*

PD = Per Capita Income

UNP = Unemployment

IPR = Internet Users

β (1,2,3) = Slope of Each Independent Variable

t = Year 2013 – 2022

i = Negara ASEAN (Indonesia, Malaysia, Singapura, Philippine dan Thailand)

$\in$ = *error term*

In using the panel data regression method, the steps used are as follows:

1. Model Selection Test
   a) Chow Test

      The Chow test is a test conducted to select the appropriate approach between the fixed effect model (FEM) and the common effect model (CEM). The basis for decision making is that if the probability for cross section F > significant value 0.05, then the most appropriate model to use is the Common Effect Model (CEM). If the probability for cross section F < significant value 0.05, then the most appropriate model to use is the Fixed Effect Model (FEM).
   b) Hausman Test

      The Hausman test is used to determine whether to use a fixed effect model (FEM) or a random effect model (REM). From the results of this test, it can be determined whether the Fixed Effect Model is better than the Random Effect Model (REM). If the probability value for cross-section random is greater than the significance level of 0.05, then the appropriate model to use is the Random Effect Model (REM). If the probability value for cross-section random is less than the significance level of 0.05, then the most appropriate model to use is the Fixed Effect Model (FEM).
   c) Lagrange Multiplier Test

      The Lagrange multiplier test is used to select the best approach between the Common Effect Model (CEM) and the Random Effect Model (REM). The basis for decision-making is that if the cross-sectional Breusch-Pagan value is greater than the significance level of 0.05, then the most appropriate model to use is the Common Effect Model (CEM). If the cross-sectional Breusch-Pagan value is less than the significance level of 0.05, then the most appropriate model to use is the Random Effect Model (REM).
2. Classical Regression Assumption Test

a) Multicollinearity Test

This test is important when the regression model involves more than one independent variable, because the presence of multicollinearity can cause the estimation results to be biased and unreliable. However, if the model has only one independent variable, multicollinearity will not occur. This technique can be performed using the Pair Wise Correlation method, which is based on the correlation coefficient values. The basis for decision-making in this test is as follows: if the coefficient value is < 0.8, there is no multicollinearity between the independent variables. If the coefficient value is > 0.8, there is a problem of multicollinearity between the independent variables.

b) Heteroscedasticity Test

The heteroscedasticity test is used to identify differences in residual variance between observations in a regression model. According to Dhyatmika & Atmanti [17], the heteroscedasticity test can be performed using the White heteroscedasticity test. The basis for decision-making in the heteroscedasticity test is as follows: If the probability value is < 0.05 (5%), it means that there is a problem of heteroscedasticity. If the probability value is > 0.05 (5%), it means that there is no problem of heteroscedasticity.

3. Hypothesis Test

a) Simultaneous Test (F-test)

The F-test is used to test the significance of the influence of independent variables, namely per capita income, unemployment, and internet users, on the happiness index in ASEAN countries simultaneously. This test is conducted by comparing the Prob value (F-statistic) with the significance level α = 5% (0.05). If the probability value is less than 0.05, then overall, the independent variables have a significant effect on the dependent variable.

b) The Coefficient Of Determination Test (R^2)

The R^2 test is used to see how much value/level of influence the independent variables, namely per capita income, unemployment, and internet users, have on the dependent variable, namely the happiness index. The test results are determined based on the value of the coefficient of determination (R^2). The coefficient of determination ranges from zero to one ($0 \leq R^2 \leq 1$). A small R^2 value indicates that the dependent variable has very limited explanatory power. A value close to one means that the independent variables provide almost all the information needed to predict the variation in the dependent variable.

c) Partial Test (T-test)

The t-test is basically used to show whether the independent variables have an individual (partial) effect on the dependent variable. The t-test is used with a significance level of 0.05 and compares the calculated t-value with the table t-value. Decision-making is based on the following criteria: if the probability value is < 0.05 and the calculated t-value is > the table t-value, it can be concluded that the independent variable individually (partially) influences the dependent variable. If the probability value is > 0.05 and the calculated t-value is < the table t-value, it can be concluded that the independent variable individually (partially) does not influence the dependent variable.

4. Results and Discussion

4.1 Model Selection Test

a) Chow Test

Table 4.1 Result of Chow Test

Effect Test	Statistic	d.f	Prob.
Cross Section F	0.415633	(4.42)	0.7964
Cross Section Chi Square	1.941035	4	0.7466

Source: Researcher Processed Data Eviews 12

The results of the Chow test analysis show that the Cross-section F probability value is 0.79. This value is greater than 0.05 (0.79 > 0.05), so the best model is the Common Effect Model.

b) Lagrange Multiplier Test

Table 4.2 Result of Lagrange Multiplier Test

	Cross-section	Test Hypothesis Time	Both.
Breush-Pagan	1.459096 (02271)	0.019660 (0.885)	1.478756 (0.2240)

Source: Researcher Processed Data Eviews 12

The results of the Lagrange Multiplier (LM) analysis test show that the Cross-section Breush-Pagan value is 0.22. This value is greater than 0.05 (0.22 > 0.05), so the most appropriate model to use is the Common Effect Model.

Based on the previous model selection results, the Chow test suggests that the Common Effect Model is the best model compared to the Fixed Effect Model. Meanwhile, the Lagrange Multiplier (LM) test indicates that the Common Effect Model is the best model compared to the Random Effect Model. Therefore, the Hausman test is not necessary in this study, as the Hausman test compares the Fixed Effect Model and the Random Effect Model.

4.2 Classical Regression Assumption Test

a) Multicollinearity Test

Table 4.3 Result of Multicollinearity Test

	LOG(PD)	UNP	IPR
LOG(PD)	1.000000	0.260908	0.734351
UNP	0.260908	1.000000	0.102160
IPR	0.734351	0.102160	1.000000

Source: Researcher Processed Data Eviews 12

The results of the multicollinearity test show that the correlation coefficient between income and unemployment is 0.26 < 0.085, income and internet users is 0.73 < 0.85, and unemployment and internet users is 0.1 < 0.85. Therefore, it can be concluded that there is no multicollinearity or that the multicollinearity test has been passed.

b) Heteroscedasticity Test

Table 4.4 Result of Multicollinearity Test

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	0.462254	0.214151	2.158541	0.0361
LOG (PD)	-0.040113	0.030441	-1.317702	0.1941
UNP	-0.014090	0.017736	-0.794443	0.4310
IPR	0.002505	0.001344	1.864069	0.0687

Source: Researcher Processed Data Eviews 12

From the results of the heteroscedasticity test, it can be seen that the probability value between variables is > 0.05. Therefore, it can be concluded that it passes the heteroscedasticity test.

4.3 Hypothesis Test

a) Simultaneous Test (F-test)

Table 4.5 Result of F-test

F-statistic	Prob (F-statistic)
51.17511	0.000000

Source: Researcher Processed Data Eviews 12

Based on the estimation results obtained in Table 4.5, the F-calculated probability value is 51.17511 > f table, which is 2.806845, and the sig. value is 0.000000, which is smaller than the significance value of 0.05. Therefore, it can be concluded that the variables of per capita income, unemployment, and internet users simultaneously influence the Happines Indeks variable in ASEAN countries during the period 2013–2022.

b) The Coefficient Of Determination Test (R^2)

Table 4.6 Result of R^2 Test

R-squared	Adjusted R-squared
0.769453	0.754417

Source: Researcher Processed Data Eviews 12

Table 4.6 shows the results of the coefficient of determination (R^2) test, which is 0.769453 or 76.94%. This value indicates that the independent variables—per capita income, unemployment, and internet users can describe the dependent variable, the happiness index in the country, by 76.94%, while the remaining 23.06% is explained by other variables outside the scope of this study.

c) Partial Test (T-test)

Table 4.4 Result of Partial Test

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	2.685669	0.381237	7.044624	0.0000
LOG (PD)	0.424972	0.054192	7.841929	0.0000
UNP	-0.224453	0.031574	-7.108848	0.0000
IPR	0.000046	0.002392	0.019256	0.9847

Source: Researcher Processed Data Eviews 12

Based on the panel data estimation in the partial test above, this can be explained as follows:

1. The panel data regression estimation results with the common effect model obtained a constant value (intercept) of 2.685669. This value is the value of the Happiness Index when it is not influenced by the independent variables.
2. Based on the estimation results, the per capita income variable has a coefficient value of 0.424972, t count of 7.481929 and a probability value of 0.00 which is smaller than 0.05, meaning that it shows that partially per capita income has a significant effect on the Happiness Index of ASEAN countries in 2013-2022. The positive coefficient indicates that if there is an increase in income by 1 USD, it can affect the Happiness Index by 0.42 points / index.
3. The estimation result of the Unemployment variable has a coefficient value of -0.224454, t count of -7.108848 and the probability value is 0.00 which is smaller than 0.05, meaning that it shows that partially Unemployment has a significant effect on the ASEAN Happiness Index in 2013-2022. The negative coefficient indicates that if there is an increase in Unemployment by 1 percent, it can reduce the Happiness Index by 0.22 points / index.
4. The estimation results of the Internet User variable have a coefficient value of 0.000046, t count of 0.019256 and a probability value of 0.9874 which is greater than 0.05, meaning that it shows that partially Internet users have no significant effect on the ASEAN Happiness Index in 2013-2022. The positive coefficient indicates that if there is an increase in Internet Users by 1 percent, it will not affect the Happiness Index.

5. Conclusions

Based on the results of the analysis, per capita income has a positive and significant effect on the happiness index, the unemployment rate has a negative and significant effect on the happiness index in ASEAN, internet users have no significant effect on the happiness index in ASEAN. And per capita income, unemployment rate and internet users simultaneously affect the happiness index in ASEAN. From the results of the Determination Coefficient Test, it can be concluded that the effect of the independent variables in describing the dependent variable is 76.94% and the remaining 23.06% is explained by other variables outside of this study.

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