|  |  |  |  |
| --- | --- | --- | --- |
| **Variables Entered/Removeda** | | | |
| Model | Variables Entered | Variables Removed | Method |
| 1 | AdultMortality, GDPb | . | Enter |
| a. Dependent Variable: Lifeexpectancy | | | |
| b. All requested variables entered. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model Summary** | | | | |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .739a | .547 | .546 | 6.4968 |
| a. Predictors: (Constant), AdultMortality, GDP | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ANOVAa** | | | | | | |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 126360.085 | 2 | 63180.043 | 1496.869 | <.001b |
| Residual | 104760.566 | 2482 | 42.208 |  |  |
| Total | 231120.651 | 2484 |  |  |  |
| a. Dependent Variable: Lifeexpectancy | | | | | | |
| b. Predictors: (Constant), AdultMortality, GDP | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coefficientsa** | | | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
| B | Std. Error | Beta | Lower Bound | Upper Bound |
| 1 | (Constant) | 75.431 | .245 |  | 307.361 | <.001 | 74.949 | 75.912 |
| GDP | .000 | .000 | .282 | 19.959 | <.001 | .000 | .000 |
| AdultMortality | -.046 | .001 | -.605 | -42.752 | <.001 | -.048 | -.044 |
| a. Dependent Variable: Lifeexpectancy | | | | | | | | |

* One way to validate the model is to compare the predicted life expectancy values from the regression model with actual life expectancy data. You can calculate the percentage error between the predicted and actual values using the following formula:

Percentage error = (1/n) \* sum ((actual - predicted)/actual) \\* 100%

Where n is the number of data points in the dataset.

For sensitivity analysis, consider changing the values of each independent variable individually while keeping the other variables constant and observe how it affects the predicted life expectancy value.

* In this study, I developed a multiple linear regression model to examine the relationship between life expectancy and socio-economic factors, such as GDP, adult mortality rate, and without *immunization rates*. My model was able to explain the variation in life expectancy, and the coefficients obtained from the model indicate that GDP and adult mortality rate have a positive effect on life expectancy, while immunization rates is not part of the Analysis.

Using the model, we were able to simulate the effect of changes in the independent variables on life expectancy.