

A Linear Regression Application of Comprehensive Knowledge with Attitudes Towards HIV / AIDS Sufferers in Indonesia Based on 2018 Riskesdas Data

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Abstract—Public understanding of early detection of HIV disease that is lacking should be a major concern because this will trigger the emergence of infectious disease transmission will be wider. The purpose of this study is to model comprehensive knowledge with attitudes towards HIV / AIDS sufferers in Indonesia.

This type of research in this study is quantitative using secondary data from Riskesdas 2018. The method in this study uses linear regression is useful for modeling the relationship between knowledge and attitudes towards people with HIV / AIDS. The linear regression assumption is that the error follows the normal distribution, there is no problem with heteroscedasticity, and there is no autocorrelation problem. After the assumptions are met overall testing and partial testing are done.

Assumption test results for normally distributed errors are met based on the Kolmogorov Smirnov test with a significance value of .400. Assumption test there is no problem with heteroscedasticity fulfilled based on the results of scatterplot that is not forming a certain pattern and is confirmed using the Spearman rho's test with a significance value of 0.245. The assumption test that there is no autocorrelation problem is also fulfilled based on the Run test with a significance value of 0.117. The results of testing the whole model using the F Test obtained fit model with a significance value of 0.001. The results of individual testing (partial) using the t-test found that knowledge has a significant influence on the attitudes of people with HIV / AIDS with a significance value of 0.001.

The conclusion from this study obtained a linear regression model that is formed is $\text{attitude} = -219,804 + 4,555 * \text{knowledge}$ means that attitude will increase by 4,555 each increase in knowledge by 1 unit.

Keywords—linear regression, knowledge, attitude, HIV / AIDS

I. INTRODUCTION

Knowledge of HIV / AIDS is important for the community because knowledge is one of the predisposing factors that influence the community in the early detection of HIV / AIDS. Understanding the community with early detection that is less cause of transmission of infection will be wider.¹ HIV / AIDS and its transmission in the world are increasing rapidly, around 60 million people in the world have been infected with HIV. The spread and transmission of HIV / AIDS are predominant in Africa and Asia. The increase in deaths in AIDS patients in poor and developing countries was 4.2 million in the period 2002 to 2012. Data from WHO in 2015 showed an increase of approximately 25% of people with HIV at the age of 15-24 years. In Indonesia, the spread of HIV / AIDS occurs evenly in almost

all provinces. The prevalence of HIV cases in the population aged 15 - 49 years has increased. In early 2009, the prevalence of HIV cases in the population aged 15 - 49 years was only 0.16% then increased to 0.30% in 2011,

Increased again to 0.32% in 2012 and continued to increase to 0.43% in 2013. The cumulative percentage of AIDS cases based on age is the highest in the age group 20-29 years (35.2%), and the highest percentage of adolescents and approaching adulthood. The most risk factors for transmission are through heterosexual contact (58.7%), injecting narcotics users (17.9%), followed by perinatal transmission (2.7%) and homosexuality by 2.3%.²

Transmission of HIV can occur through intimate contact (vaginal, anal, or oral), blood transfusion, contaminated syringes, between mother and baby during pregnancy, childbirth, or breastfeeding, as well as other forms of contact with these bodily fluids.³ Lack of knowledge of HIV / AIDS will cause an increase in the incidence of HIV / AIDS.⁴

Based on the Decree of the Coordinating Minister for People's Welfare No. 9 of 1994, which is one of the targets of information and education communication (IEC) for HIV / AIDS prevention and how to provide IEC to high-risk groups. Information about HIV / AIDS can increase the knowledge of housewives who are at high risk of suffering from HIV / AIDS and the knowledge received is expected to be able to change sexual attitudes and behavior to prevent HIV / AIDS.⁵

The purpose of this study is to model comprehensive knowledge with attitudes towards HIV / AIDS sufferers in Indonesia.

II. METHOD

This type of research used in this study is quantitative using the 2018 Riskesdas secondary data. The population used is all provinces in Indonesia with a sample of 34 provinces. The instrument used based on Riskesdas 2018 for the comprehensive knowledge variable was built with 24 questions about how to be transmitted, how to prevent it and how to find out someone suffering from HIV AIDS. Variable attitudes with confidentiality parameters if there are family members who are HIV AIDS, are willing to care for family members who suffer from HIV AIDS, isolate neighbors who suffer from HIV AIDS, buy fresh vegetables from farmers or sellers known to be infected with HIV AIDS, and agree not to introduce suffering teachers HIV AIDS teaching. Data analysis using linear regression is to model the relationship between comprehensive knowledge and attitudes towards

HIV AIDS sufferers. Before being analyzed using a regression test, the data must meet the assumption test, that is, errors follow the normal distribution, there are no problems with heteroscedasticity, and there are no autocorrelation problems. After the assumptions are fulfilled, then the whole test is done with the F test and a partial test using the t-test.

III. RESULT

Based on the descriptive statistical results from the attitude and knowledge variables. The average attitude of HIV AIDS sufferers in Indonesia based on 2018 Riskesdas data is 223.1176 with a standard deviation of 13.66873. The average knowledge of HIV AIDS sufferers in Indonesia based on 2018 Riskesdas data is 97.2353 with a standard deviation of 1.57747.

The Pearson correlation results that explain the correlation between attitude and knowledge of HIV AIDS sufferers in Indonesia, the magnitude of the correlation between attitude and knowledge is 0.526 (positive correlation) and significant at alpha 5% (p-value = 0.01 < 0.05)

A. Test assumptions

Before testing the linear regression test, the data must meet the assumption test. The assumption test is as follows:

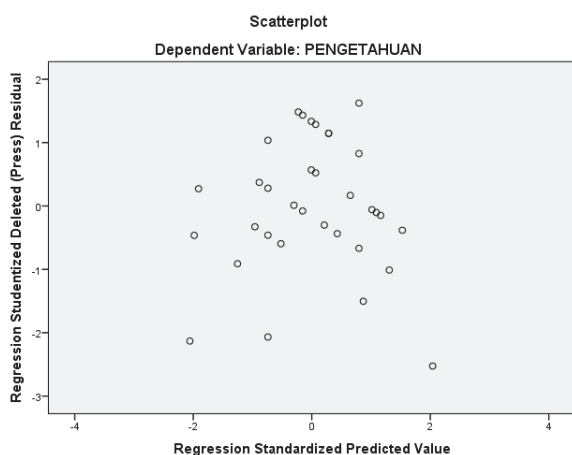
1) Error following the normal distribution

To test errors following a normal distribution or not using the Kolmogorov Smirnov Test.

Based on the results of the Kolmogorov Smirnov test, the significance value is 0,400 and the value is greater than alpha 0.05, so it can be concluded that the error follows the normal distribution. Therefore the assumption test was fulfilled.

2) There is no problem with heteroscedasticity

To test whether there is a heteroscedasticity problem by using scatter plots or by using the Spearman rho's test.



Based on the scatter plot picture shows it does not form a certain pattern, and using the rear's spearman test shows a significance value of 0.245 and the value is greater than alpha 0.05. Therefore it can be concluded that there is no heteroscedasticity problem, so the assumption test is fulfilled.

3) There is no autocorrelation problem

To find out whether or not autocorrelation problems using the Run test. The results of the Run test show that the significance value is 0.117 and the value is greater than alpha 0.05. Therefore it can be concluded that there is no autocorrelation problem, then the assumption test is fulfilled.

After testing the regression assumptions are met, then the next is the regression coefficient testing. This test is carried out through two stages of testing, namely testing the entire regression model and individual testing.

B. Testing the whole model

For testing the whole model using the F Test. Based on the F test results obtained a significance value of 0.001 and this value is smaller than the alpha value of 0.05 so we reject H₀, which means model fit. This shows that the model formed can explain empirical data as a whole.

C. Individual testing (partial)

For individual (partial) testing using the t-test. Based on the t-test results obtained a significance value of 0.001 and this is smaller than the alpha value of 0.05, so we reject H₀ which means that knowledge has a significant effect on attitudes on alpha 5% or 0.05.

The overall percentage of the effect of knowledge on attitude can be seen from the R-squared value of 27.6%. This means that HIV AIDS knowledge explains the variability of the attitude variable by 27.6%, while the remaining 72.4% is explained by other variables not examined.

The regression model formed is attitude = -219,804 + 4,555 * knowledge means that attitude will increase by 4,555 each increase in knowledge by 1 unit.

IV. DISCUSSION

Data on comprehensive knowledge about HIV AIDS was obtained from direct interviews consisting of 24 questions with four parameters, namely how to transmit, how to prevent and how to find out someone suffering from HIV AIDS. The results of research on knowledge show the highest average number of correct answers is a component regarding the way of transmission with a value of 65.

The results of this study indicate that respondents' knowledge about preventing HIV AIDS transmission is high compared to knowledge about how to prevent and how to know someone suffering from HIV AIDS. Indonesians think that talking about sex is taboo while one way of transmitting HIV AIDS is through sexual contact with 80% - 90% in the world.⁷ On the other hand, in this day and age technology has evolved and access to information is very easy which finally can increase knowledge

Attitudes toward HIV AIDS sufferers consist of five parameters, which is to keep it a secret if there are ART members who are HIV AIDS, are willing to treat ART who suffer from HIV AIDS, isolate neighbors who suffer from HIV AIDS, buy fresh vegetables from farmers or sellers known to be infected with HIV / AIDS, agree not to introduce teachers who suffer from HIV AIDS to teach. The results of attitude research found that the highest value of attitude was on the parameters of being willing to treat ART who suffer from HIV AIDS with a total of 88.5.

The results of the study indicate that attitudes toward HIV AIDS sufferers are high. Attitudes are influenced by

personal knowledge and experience that leave a strong impression.

The results of the Run test show that the significance value is 0.117 and the value is greater than alpha 0.05. Therefore it can be concluded that there is no autocorrelation problem, then the assumption test is fulfilled.

Knowledge about HIV / AIDS in various studies shows that this is the most dominant factor in determining attitudes towards people with HIV AIDS.10

The results of T. Korhonen's study, which took data on several some many of students in Finland, stated that knowledge is positively related to the general attitude towards HIV AIDS sufferers. Knowledge is one of the factors that influence a person's attitude and behavior. According to Lawrence Green and Marshall Kreuter, one's knowledge is one of the predisposing factors that can influence changes in a person's behavior.

V. CONCLUSION

Assumption test results for normally distributed errors are met based on the Kolmogorov Smirnov test with a significance value of .400. Assumption test there is no problem with heteroscedasticity fulfilled based on the results of scatterplot that is not forming a certain pattern and is confirmed using the Spearman rho's test with a significance value of 0.245. The assumption test that there is no autocorrelation problem is also fulfilled based on the Run test with a significance value of 0.117. The results of testing the whole model using the F Test obtained fit model with a significance value of 0.001. The results of individual testing (partial) using the t-test found that knowledge has a significant influence on the attitudes of people with HIV / AIDS with a significance value of 0.001.

A linear regression model that is formed is attitude = - 219,804 + 4,555 * knowledge means that attitude will increase by 4,555 each increase in knowledge by 1 unit.

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