How can I extract the R-squared value from the lm() function in R?

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The lm() function in R is used to fit linear regression models. It can also provide important metrics to evaluate the model's performance, such as the R-squared value. R-squared is a measure of how well the model fits the data, with a higher value indicating a better fit. To extract the R-squared value from the lm() function, one can use the summary() function and then access the "r.squared" element of the returned object. This will provide the R-squared value for the model, allowing for further analysis and comparison with other models.

Extract R-Squared from lm() Function in R

You can use the following syntax to extract the and values from the function in R:

```
#extract R-squared
summary(model)$adj.r.squared

#extract adjusted R-squared
summary(model)$adj.r.squared
```

The following example shows how to use this syntax in practice.

Example: Extract R-Squared from lm() in R

Suppose we fit the following multiple linear regression model in R:

```
#create data frame
df <- data.frame(rating=c(67, 75, 79, 85, 90, 96, 97),
```

points=c(8, 12, 16, 15, 22, 28, 24),
assists=c(4, 6, 6, 5, 3, 8, 7),
rebounds=c(1, 4, 3, 3, 2, 6, 7))

#fit multiple linear regression model
model <- lm(rating ~ points + assists + rebounds, data=df)

We can use the summary() function to view the entire summary of the regression model:

#view model summary
summary(model)

Call:
lm(formula = rating ~ points + assists + rebounds, data = df)

Residuals:
1 2 3 4 5 6 7
-1.5902 -1.7181 0.2413 4.8597 -1.0201 -0.6082 -0.1644

Coefficients:
Estimate Std. Error t value Pr(>|t|)
(Intercept) 66.4355 6.6932 9.926 0.00218 **

points 1.2152 0.2788 4.359 0.02232 *
assists -2.5968 1.6263 -1.597 0.20860
rebounds 2.8202 1.6118 1.750 0.17847

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.193 on 3 degrees of freedom
Multiple R-squared: 0.9589, Adjusted R-squared: 0.9179
F-statistic: 23.35 on 3 and 3 DF, p-value: 0.01396

Note the values for the R-squared and adjusted R-squared of the model near the bottom of the output:

R-squared: 0.9589Adjusted R-squared: 0.9179

To only extract the R-squared value for the model, we can use the following syntax:

#extract R-squared value of regression model
summary(model)$r.squared

0.9589274

And to only extract the adjusted R-squared value for the model, we can use the following syntax:

#extract adjusted R-squared value of regression model
summary(model)$adj.r.squared

0.9178548

Notice that these values for R-squared and adjusted R-squared match the values that we saw earlier in the entire regression output summary.