# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Durbin Watson Test & Breuch Pagan Test \_\_\_\_\_\_\_\_\_\_\_\_\_

data<-cars

str(data)

View(data)

summary(data)

model=lm(speed~.,data = data)

model

summary(model)

## Heteroscedasticity Check ( Bruech - Pagan Test) ###

library("zoo")

library("lmtest")

bptest(model)#H0: There is homoscedastic (constance variance)

## Check Autocorrelation ( Durbin - Watson Test) ##

dwtest(model)

OUTPUT

> # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Durbin Watson Test & Breuch Pagan Test \_\_\_\_\_\_\_\_\_\_\_\_\_

>

> data<-cars

>

> str(data)

'data.frame': 50 obs. of 2 variables:

$ speed: num 4 4 7 7 8 9 10 10 10 11 ...

$ dist : num 2 10 4 22 16 10 18 26 34 17 ...

>

> View(data)

>

> summary(data)

speed dist

Min. : 4.0 Min. : 2.00

1st Qu.:12.0 1st Qu.: 26.00

Median :15.0 Median : 36.00

Mean :15.4 Mean : 42.98

3rd Qu.:19.0 3rd Qu.: 56.00

Max. :25.0 Max. :120.00

>

> model=lm(speed~.,data = data)

> model

Call:

lm(formula = speed ~ ., data = data)

Coefficients:

(Intercept) dist

8.2839 0.1656

> summary(model)

Call:

lm(formula = speed ~ ., data = data)

Residuals:

Min 1Q Median 3Q Max

-7.5293 -2.1550 0.3615 2.4377 6.4179

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 8.28391 0.87438 9.474 1.44e-12 \*\*\*

dist 0.16557 0.01749 9.464 1.49e-12 \*\*\*

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 3.156 on 48 degrees of freedom

Multiple R-squared: 0.6511, Adjusted R-squared: 0.6438

F-statistic: 89.57 on 1 and 48 DF, p-value: 1.49e-12

>

>

> ## Heteroscedasticity Check ( Bruech - Pagan Test) ###

>

> library("zoo")

> library("lmtest")

>

>

> bptest(model)#H0: There is homoscedastic (constance variance)

studentized Breusch-Pagan test

data: model

BP = 0.71522, df = 1, p-value = 0.3977

>

> ## Check Autocorrelation ( Durbin - Watson Test) ##

>

> dwtest(model)

Durbin-Watson test

data: model

DW = 1.1949, p-value = 0.0009159

alternative hypothesis: true autocorrelation is greater than 0