

DONDE ESTAN
LOS
ESTIMADOS

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto        -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., ****residual standard error****)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

INTERCEPTO

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto       -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Coeficiente de efecto fijo

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto       -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Error del estimado

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto        -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Valor de prueba t, sobre el estimado

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto       -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Valor p de la de prueba t, sobre el estimado

PENDIENTE


```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()
```

```
Call:
lm(formula = dep ~ 1 + auto, data = data_model)
```

Residuals:

Min	1Q	Median	3Q	Max
-23.486	-2.918	-0.290	2.765	23.936

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	30.485718	0.219219	139.06	<0.00000000000000002 ***
auto	-0.542706	0.006193	-87.63	<0.00000000000000002 ***

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

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)

Multiple R-squared: 0.4593, Adjusted R-squared: 0.4592

F-statistic: 7680 on 1 and 9041 DF, p-value: < 0.000000000000000022

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Coeficiente de efecto fijo

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto       -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Error del estimado

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()
```

```
Call:
lm(formula = dep ~ 1 + auto, data = data_model)
```

Residuals:

Min	1Q	Median	3Q	Max
-23.486	-2.918	-0.290	2.765	23.936

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	30.485718	0.219219	139.06	<0.00000000000000002 ***
auto	-0.542706	0.006193	-87.63	<0.00000000000000002 ***

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

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)

Multiple R-squared: 0.4593, Adjusted R-squared: 0.4592

F-statistic: 7680 on 1 and 9041 DF, p-value: < 0.000000000000000022

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Valor de prueba t, sobre el estimado

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto       -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Valor p de la de prueba t, sobre el estimado

RESIDUOS

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()
```

```
Call:
lm(formula = dep ~ 1 + auto, data = data_model)
```

Residuals:

Min	1Q	Median	3Q	Max
-23.486	-2.918	-0.290	2.765	23.936

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	30.485718	0.219219	139.06	<0.00000000000000002	***
auto	-0.542706	0.006193	-87.63	<0.00000000000000002	***

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

Residual standard error: 4.544 on 9041 degrees of freedom

(746 observations deleted due to missingness)

Multiple R-squared: 0.4593, Adjusted R-squared: 0.4592

F-statistic: 7680 on 1 and 9041 DF, p-value: < 0.000000000000000022

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - **RSE = 4.54** (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

Desviación estandar de los residuos

```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.0000000000000002 ***
auto       -0.542706   0.006193  -87.63 <0.0000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.00000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es
 - $R^2 = .46$

R^2


```
# salida de regresion en R
> lm(dep ~ 1 + auto, data = data_model) %>%
+ summary()

Call:
lm(formula = dep ~ 1 + auto, data = data_model)

Residuals:
    Min       1Q   Median       3Q      Max
-23.486  -2.918  -0.290   2.765  23.936

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 30.485718   0.219219  139.06 <0.00000000000000002 ***
auto        -0.542706   0.006193  -87.63 <0.00000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.544 on 9041 degrees of freedom
(746 observations deleted due to missingness)
Multiple R-squared:  0.4593,    Adjusted R-squared:  0.4592
F-statistic: 7680 on 1 and 9041 DF,  p-value: < 0.000000000000000022
```

- El coeficiente del intercepto es:
 - $b_0 = 30,49$ (SE = 0.22, $t = 139.06$, $p < .001$)
- El coeficiente de la pendiente es
 - $b_1 = -0.54$ (SE = 0.01, $t = -87.63$, $p < .001$)
- La desviación estándar de los residuos (i.e., **residual standard error**)
 - RSE = 4.54 (df = 9041)
- El coeficiente de determinación (r cuadrado) es

• $R^2 = .46$

R cuadrado, R^2 , coeficiente de determinación