

# Predicting with regression

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[Multiple linear regression](#) is a generalization of linear regression by considering more than one independent variable, and a specific case of general linear models formed by restricting the number of dependent variables to one.

## Fit model, view summary and generate prediction

Call:

```
lm(formula = social$Visits ~ social$NewVisits + social$BounceRate,  
    data = social)
```

Residuals:

Min	1Q	Median	3Q	Max
-54.120	-3.888	-0.937	5.297	35.134

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	4.44192	0.50456	8.804	<2e-16 ***
social\$NewVisits	0.44568	0.03310	13.463	<2e-16 ***
social\$BounceRate	0.70380	0.03517	20.013	<2e-16 ***

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

Residual standard error: 11.84 on 913 degrees of freedom

Multiple R-squared: 0.76, Adjusted R-squared: 0.7595

F-statistic: 1446 on 2 and 913 DF, p-value: < 2.2e-16

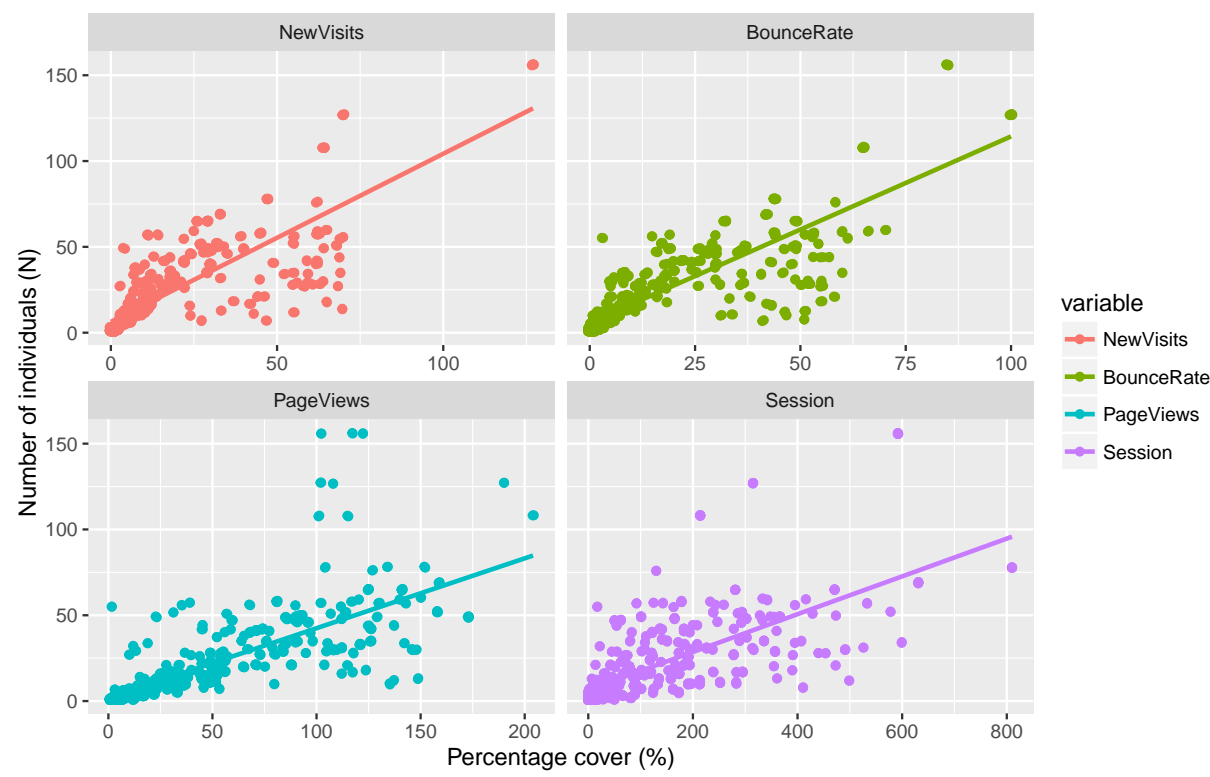
(Intercept)	social\$NewVisits	social\$BounceRate
4.4419241	0.4456767	0.7037971

[1] 0.7600195

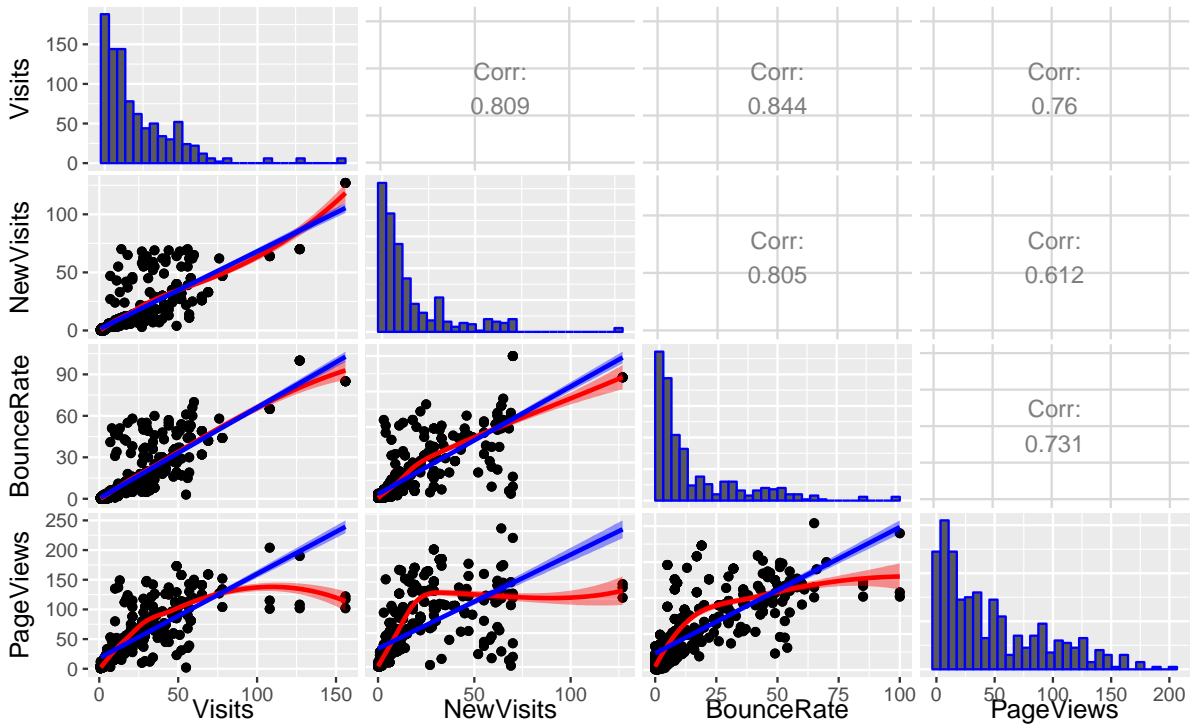
	2.5 %	97.5 %
(Intercept)	3.4516991	5.4321492
social\$NewVisits	0.3807100	0.5106433
social\$BounceRate	0.6347796	0.7728146

1	2	3	4	5	6
19.572639	13.004481	7.444669	22.458391	21.942151	12.042564

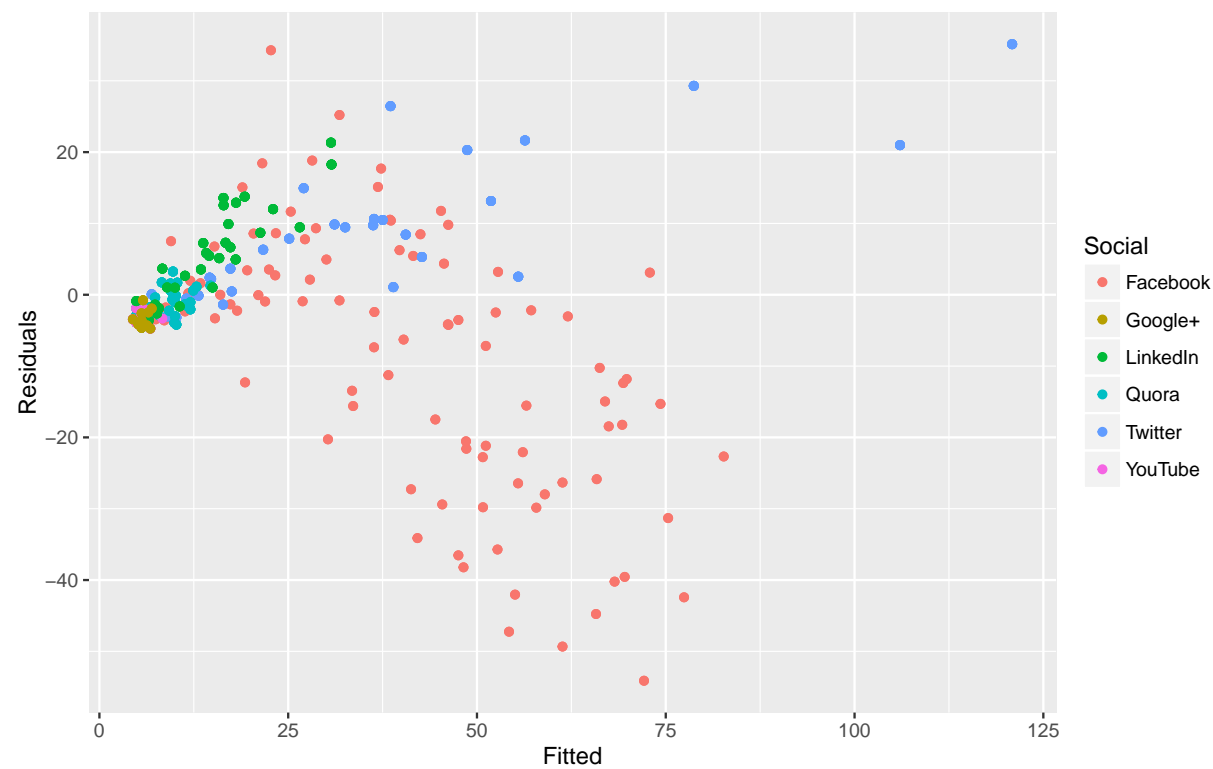
Plot correaltion on each variable



## Diagnostic plots for Linear Models (LM)



Plot fitted vs residuals color by social



## Plot multivariable regression

