

# Regression Output in Tables for a PDF

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This is a document showing how to automatically generate tables for showing regression output. The first part shows how to Create tables from data frames with the `kable` function in the knitr package (Xie 2014). The second part shows how to use the stargazer package (Hlavac 2014).

**Note** this version of the document is for creating tables in R Markdown that is **compiled to PDF**.

Both examples use data from [UCLA IRDE](http://www.ats.ucla.edu/stat/data/binary.csv). To access the data use:

```
URL <- 'http://www.ats.ucla.edu/stat/data/binary.csv'
Admission <- read.csv(URL)
```

## kable for creating tables from data frames

Imagine that we want to create a table of predicted probabilities from a logistic regression model. First we simply run our model and create our predicted probabilities:

```
# Estimate model
Logit1 <- glm(admit ~ gre + gpa + as.factor(rank),
             data = Admission, family = 'binomial')

# Create scenario labels
Scenarios <- c('Scenario 1', 'Scenario 2', 'Scenario 3', 'Scenario 4')

# Create fitted data
fitted <- with(Admission,
              data.frame(gre = mean(gre),
                        gpa = mean(gpa),
                        rank = factor(1:4)))

# Predict probabilities
fitted$predicted <- predict(Logit1, newdata = fitted,
                          type = 'response')

# Combine
fitted <- data.frame(Scenarios, fitted)
```

Then we simply pass the `fitted` object to the `kable` function to create our table of predicted probabilities.

```
knitr::kable(fitted, align = 'c', digits = 2,
             caption = 'Predicted Probabilities for Fitted Values')
```

Table 1: Predicted Probabilities for Fitted Values

Scenarios	gre	gpa	rank	predicted
Scenario 1	587.7	3.39	1	0.52
Scenario 2	587.7	3.39	2	0.35

Table 1: Predicted Probabilities for Fitted Values

Scenarios	gre	gpa	rank	predicted
Scenario 3	587.7	3.39	3	0.22
Scenario 4	587.7	3.39	4	0.18

## stargazer for creating tables from model output objects

If you want to automatically generate tables from regression model output objects, `texreg` is a good package to turn to. First estimate your models:

```
L1 <- glm(admit ~ gre,
          data = Admission, family = 'binomial')

L2 <- glm(admit ~ gre + gpa,
          data = Admission, family = 'binomial')

L3 <- glm(admit ~ gre + gpa + as.factor(rank),
          data = Admission, family = 'binomial')
```

Then use the `stargazer` function to create a results table. For PDFs set `type = 'latex'`. There are many stylistic modifications you can make with this function.

```
# Create custom clean coefficient labels
labels <- c('(Intercept)', 'GRE Score', 'GPA Score', '2nd Ranked School',
           '3rd Ranked School', '4th Ranked School')
stargazer::stargazer(L1, L2, L3, covariate.labels = labels,
                     title = 'Logistic Regression Estimates of Grad School Acceptance',
                     type = 'latex', header = FALSE)
```

## References

- Hlavac, Marek. 2014. *stargazer: LaTeX/HTML Code and ASCII Text for Well-Formatted Regression and Summary Statistics Tables*. <http://CRAN.R-project.org/package=stargazer>.
- Xie, Yihui. 2014. *knitr: A General-Purpose Package for Dynamic Report Generation in R*. <http://CRAN.R-project.org/package=knitr>.

Table 2: Logistic Regression Estimates of Grad School Acceptance

	<i>Dependent variable:</i>		
	admit		
	(1)	(2)	(3)
(Intercept)	0.004*** (0.001)	0.003** (0.001)	0.002** (0.001)
GRE Score		0.755** (0.320)	0.804** (0.332)
GPA Score			−0.675** (0.316)
2nd Ranked School			−1.340*** (0.345)
3rd Ranked School			−1.551*** (0.418)
4th Ranked School	−2.901*** (0.606)	−4.949*** (1.075)	−3.990*** (1.140)
Observations	400	400	400
Log Likelihood	−243.028	−240.172	−229.259
Akaike Inf. Crit.	490.056	486.344	470.517

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01