stargazer:
beautiful LaTeX tables from R statistical output

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1 Introduction

stargazer is an R package that creates LaTeX code for well-formatted regression tables, with multiple models side-by-side, as well as for summary statistics tables. It can also output the content of data frames directly into LaTeX.

2 Why Should I Use *stargazer*?

Compared to available alternatives, *stargazer* excels in three regards: its ease of use, the large number of models it supports, and its beautiful aesthetics. These advantages have made it the R-to-LaTeX package of choice for many satisfied users at research institutions around the world.

2.1 Ease of Use

stargazer was designed with the user's comfort in mind. The learning curve is very mild, and all arguments are very intuitive, so that even a beginning user of R or LaTeX can quickly become familiar with the package's many capabilities. The package is intelligent, and tries to minimize the amount of effort the user has to put into adjusting argument values.

If *stargazer* is given a set of regression model objects, for instance, the package will create a side-by-side regression table. By contrast, if the user feeds it a data frame, *stargazer* will know that the user is most likely looking for a summary statistics table or – if the *summary* argument is set to FALSE – wants to output the content of the data frame.

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A quick reproducible example shows just how easy *stargazer* is to use. You can install *stargazer* from CRAN in the usual way:

```
install.packages("stargazer")
library(stargazer)
```

To create a summary statistics table from the *'attitude'* data frame (which should be available with your default installation of R), simply run the following:

```
stargazer("attitude")
```

Table 1:

Statistic	N	Mean	St. Dev.	Min	Max
rating	30	64.633	12.173	40	85
complaints	30	66.600	13.315	37	90
privileges	30	53.133	12.235	30	83
learning	30	56.367	11.737	34	75
raises	30	64.633	10.397	43	88
critical	30	74.767	9.895	49	92
advance	30	42.933	10.289	25	72

To output the contents of the first four rows of some data frame, specify the part of the data frame you would like to see, and set the *summary* option to FALSE:

```
stargazer("attitude", summary=FALSE)
```

Table 2:

rating	complaints	privileges	learning	raises	critical	advance
43	51	30	39	61	92	45
63	64	51	54	63	73	47
71	70	68	69	76	86	48
61	63	45	47	54	84	35

Now, let us try to create a simple regression table with three side-by-side models – two Ordinary Least Squares (OLS) and one probit regression model – using the *lm()* and *glm()* functions. We can set the *align* argument to TRUE, so that coefficients in each column are aligned along the decimal point. *Table 3* shows the result.

Table 3: Regression Results

	Dependent variable:		
	rating		high.rating
	OLS		*probit*
	(1)	(2)	(3)
complaints	0.692***	0.682***	
	(0.149)	(0.129)	
privileges	−0.104	−0.103	
	(0.135)	(0.129)	
learning	0.249	0.238*	0.164***
	(0.160)	(0.139)	(0.053)
raises	−0.033		
	(0.202)		
critical	0.015		−0.001
	(0.147)		(0.044)
advance			−0.062
			(0.042)
Constant	11.011	11.258	−7.476**
	(11.704)	(7.318)	(3.570)
Observations	30	30	30
R^2	0.715	0.715	
Adjusted R^2	0.656	0.682	
Log likelihood			−9.087
Akaike Inf. Crit.			26.175
Residual Std. Error	7.139($df = 24$)	6.863($df = 26$)	
F statistic	12.063***($df = 5; 24$)	21.743***($df = 3; 26$)	

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

In *Table 4*, we go a little bit further, and make some formatting and labeling adjustments. In particular, we use *omit.stat* to leave out several statistics – namely, the log-likelihood ("*LL*"), residual standard error ("*ser*") and the F-statistic ("*f*"). Additionally, we label each of the dependent and independent variables with an easy-to-understand name. To do so, we use the *dep.var.labels* and *covariate.labels* arguments. The result is a complex, publication-quality LaTeX table. The relevant command call looks like this:

```
stargazer(linear.1, linear.2, probit.model, title="Regression Results",
align=TRUE, dep.var.labels=c("Overall Rating","High Rating"),
covariate.labels=c("Handling of Complaints","No Special Privileges",
"Opportunity to Learn","Performance-Based Raises","Too Critical","Advancement"),
omit.stat=c("LL","ser","f"))
```

Table 4: Regression Results

	Dependent variable:		
	Overall Rating		High Rating
	OLS		probit
	(1)	(2)	(3)
Handling of Complaints	0.692***	0.682***	
	(0.149)	(0.129)	
No Special Privileges	−0.104	−0.103	
	(0.135)	(0.129)	
Opportunity to Learn	0.249	0.238*	0.164***
	(0.160)	(0.139)	(0.053)
Performance-Based Raises	−0.033		
	(0.202)		
Too Critical	0.015		−0.001
	(0.147)		(0.044)
Advancement			−0.062
			(0.042)
Constant	11.011	11.258	−7.476**
	(11.704)	(7.318)	(3.570)
Observations	30	30	30
R^2	0.715	0.715	
Adjusted R^2	0.656	0.682	
Akaike Inf. Crit.			26.175

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

2.2   Many supported models

stargazer supports objects from the most widely used statistical functions and packages. In particular, the package supports model objects from *betareg* (betareg), *coxph* (survival), *clm* (ordinal), *clogit* (survival), *ergm* (ergm), *gam* (mgcv), *gee* (gee), *glm* (stats), *glmer* (lme4), *gls* (nlme), *hurdle* (pscl), *ivreg* (AER), *lm* (stats), *lmer* (lme4), *lmrob* (robustbase), *multinom* (nnet), *nlmer* (lme4), *plm* (plm), *pmg* (plm), *polr* (MASS), *rlm* (MASS), *svyglm* (survey), *survreg* (survival), *tobit* (AER), *zeroinfl* (pscl), as well as from the implementation of these in *zelig*. In addition, stargazer also supports the following zelig models for social network analysis: "*cloglog.net*", "*gamma.net*", "*probit.net*" and "*logit.net*".

The number of models and objects that *stargazer* can accommodate puts it ahead of most of the alternative R-to-LATEX options. As the development of the package continues, this list will continue expanding to matching models, as well as new, user-made, or customized statistical models.

2.3   Beautiful aesthetics

stargazer is very pleasing to the eye, and allows the user to customize all variable labels, as well as the formatting of the resulting table. If you'd like to create tables that look like those from your discipline's leading journal, *stargazer* can help you with that as well. You can use the style argument to choose a template of your choice. Economics and management scholars can thus create tables that resemble those published in the *American Economic Review*, in the *Quarterly Journal of Economics*, or in *Administrative Science Quarterly*. Political scientists can avail themselves of templates based on the *American Political Science Review*, the *American Journal of Political Science*, and on *International Organization*. For sociologists and demographers, the *American Sociological Review*, the *American Sociological Review* and *Demography* are available.

3   Citing *stargazer* in Research Publications

If you use the *stargazer* package in your research publications, please remember to include the following citation:

```
Hlavac, Marek (2013).  stargazer:  LaTeX code for well-formatted regression and sum-
mary statistics tables.  R package version 3.0.  http://CRAN.R-project.org/package=stargazer
```

Note: This document's description of the *stargazer* package was adapted from my guest blog post on Tal Galili's excellent R-statistics blog.