Publication-ready linear regression tables

Cheatsheet

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Data are based on the `penguins` dataset from `palmerpenguins`.

Introduction

Linear regression tables are (*in comparison to ANOVA tables*) well-supported in R, with many packages and functions that *automatically* format summary results for publication. However it is still useful to know how to format these tables manually. This cheatsheet provides examples of summary tables for *simple* linear regression and *multiple* linear regression (predictors are *all* **continuous**) that are "ready" for **publication** — use them as guides to structure and format your *own* tables.

Regression with *one* continuous predictor

Table 1: Linear regression analysis predicting body weight from flipper length in penguins. The table includes standard errors (S.E.) .and significance levels (p < 0.05). N = 342

	Estimates	*S.E.*	*t*-value	*p*
Flipper length	49.686	1.518	32.72	< 0.001

$R^2 = 0.759$

Either combination of the standard error value(s) (***S.E.***) and ***t*-values**, or the 95% confidence interval **(95% CI**, below) are acceptable in a simple linear regression summary table. For interoperation the **p-value** is always included.

Other important information to include are the total number of observations (**N**) and the **R²** value, either as *footnotes* or in the caption (or, a combination of both).

Table 2: Linear regression analysis predicting body weight from flipper length in penguins. The table includes the 95% confidence intervals (95% CI) and significance levels (p < 0.05). N =

	Estimates	*95 %CI*	*p*
Flipper length	49.686	46.70 – 52.67	< 0.001

$R^2 = 0.759$

Report the **multiple R²** when a *single* predictor is in the model.

Regression with *two* continuous predictors and interaction

Table 3: Linear regression analysis predicting body mass from flipper length, bill length, and their interaction. The table includes the 95% confidence intervals (95% CI). Significant effects (p < 0.05) are

	Estimates	*95 %CI*	*p*
Flipper length	-7.31	-36.88 – 22.26	0.627
Bill length	-229.24	-354.02 – -104.47	**< 0.001**
Flipper length × Bill length	1.20	0.57 – 1.83	**< 0.001**

Adj. $R^2 = 0.767$

Report the **adjusted R²** when multiple predictors are in the model.

The (**intercept**) term is normally **not** included. You should include the term if it is important (e.g. in this case, is it *relevant* to know what the body weight is when both flipper length and bill length are 0 mm?).

Sometimes there is opportunity to **combine** tables. In this case the predictor variables are shared between the tables, and both the **caption** and **column headings** clearly indicate the response variable that represents the data below.

Table 4: Multiple linear regression analyses predicting (a) bill depth from flipper length, and (b) body mass from flipper length, bill length and their interaction. Tables include the 95% confidence intervals (95% CI). Significant effects (p < 0.05) are highlighted in bold. N = 342 in both instances.

	(a) Bill depth			(b) Body mass		
	Estimates	*95% CI*	*p*	Estimates	*95 %CI*	*p*
Flipper length	-0.08	-0.09 – -0.07	**<0.001**	-7.31	-36.88 – 22.26	0.627
Bill length				-229.24	-354.02 – -104.47	**< 0.001**
Flipper length × Bill length				1.20	0.57 – 1.83	**< 0.001**
	$R^2 = 0.341$			Adj. $R^2 = 0.767$		

Different regression summaries can still be combined even if only *some* terms are the same — just leave unused cells blank.

Resources

If you are not well-versed in R, use document processors to manually template and create your tables:

- **MS Word (or equivalent)** is useful if your document is already written using similar software. Use **Insert > Table** to begin.
- Use MS Excel (or equivalent) if you intend to export your table as an image (or screenshot). In this case you may need to go to **View** and uncheck **Gridlines** to start with an empty canvas.

If you want to use **R**, then check out our cheatsheet on "Using R to produce publication-ready summary tables" (not linked).