

## 0.1 zelig: Estimating a Statistical Model

### Description

The `zelig` command estimates a variety of statistical models. Use `zelig` output with `setx` and `sim` to compute quantities of interest, such as predicted probabilities, expected values, and first differences, along with the associated measures of uncertainty (standard errors and confidence intervals).

### Usage

```
z.out <- zelig(formula, model, data, by, ...)
```

### Arguments

<code>formula</code>	a symbolic representation of the model to be estimated, in the form <code>y ~\, x1 + x2</code> , where <code>y</code> is the dependent variable and <code>x1</code> and <code>x2</code> are the explanatory variables, and <code>y</code> , <code>x1</code> , and <code>x2</code> are contained in the same dataset. (You may include more than two explanatory variables, of course.) The <code>+</code> symbol means “inclusion” not “addition.” You may also include interaction terms and main effects in the form <code>x1*x2</code> without computing them in prior steps; <code>I(x1*x2)</code> to include only the interaction term and exclude the main effects; and quadratic terms in the form <code>I(x1^2)</code> .
<code>model</code>	the name of a statistical model, enclosed in <code>"</code> . Type <code>help.zelig("models")</code> to see a list of currently supported models.
<code>data</code>	the name of a data frame containing the variables referenced in the formula, or a list of multiply imputed data frames each having the same variable names and row numbers (created by <code>mi</code> ).
<code>by</code>	a factor variable contained in <code>data</code> . Zelig will subset the data frame based on the levels in the <code>by</code> variable, and estimate a model for each subset. This a particularly powerful option which will allow you to save a considerable amount of effort. For example, to run the same model on all fifty states, you could type: <code>z.out &lt;- zelig(y ~ x1 + x2, data = mydata, model = "ls", by = "state")</code> You may also use <code>by</code> to run models using MatchIt subclass.
<code>...</code>	additional arguments passed to <code>zelig</code> , depending on the model to be estimated.

### Value

Depending on the class of model selected, `zelig` will return an object with elements including `coefficients`, `residuals`, and `formula` which may be summarized using

`summary(z.out)` or individually extracted using, for example, `z.out$coefficients`. See the specific models listed above for additional output values, or simply type `names(z.out)`.

### **Author(s)**

Kosuke Imai <kimai@princeton.edu>; Gary King <king@harvard.edu>; Olivia Lau <olau@fas.harvard.edu>

### **See Also**

The full Zelig manual is available at <http://gking.harvard.edu/zelig>.