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grmeanby — Graph means and medians by categorical variables

Description

grmeanby graphs the (optionally weighted) means or medians of *varname* according to the values of the variables in *varlist*. The variables in *varlist* may be string or numeric and, if numeric, may be labeled.

Quick start

Graph means of v1 for each level of categorical variables cvar1, cvar2, and cvar3

     grmeanby cvar1 cvar2 cvar3, sum(v1)

Same as above, but graph medians

     grmeanby cvar1 cvar2 cvar3, sum(v1) median

Same as above, but use + as the marker

     grmeanby cvar1 cvar2 cvar3, sum(v1) median msymbol(+)

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Syntax

grmeanby *varlist* [*if*] [*in*] [*weight*] , summarize(*varname*) [*options*]

options	Description
Main	
* <u>summarize</u>(*varname*)	graph mean (or median) of *varname*
<u>median</u>	graph medians; default is to graph means
Plot	
cline_options	change look of the lines
marker_options	change look of markers (color, size, etc.)
marker_label_options	add marker labels; change look or position
Y axis, X axis, Titles, Legend, Overall	
twoway_options	any options other than by() documented in [G-3] *twoway_options*

*summarize(*varname*) is required.

aweights and fweights are allowed; see [U] **11.1.6 weight**.

Options

> [**Main**]

summarize(*varname*) is required; it specifies the name of the variable whose mean or median is to be graphed.

median specifies that the graph is to be of medians, not means.

> [**Plot**]

cline_options affect the rendition of the lines through the markers, including their color, pattern, and width; see [G-3] *cline_options*.

marker_options affect the rendition of markers drawn at the plotted points, including their shape, size, color, and outline; see [G-3] *marker_options*.

marker_label_options specify if and how the markers are to be labeled; see [G-3] *marker_label_options*.

> [**Y axis, X axis, Titles, Legend, Overall**]

twoway_options are any of the options documented in [G-3] *twoway_options*, excluding by(). These include options for titling the graph (see [G-3] *title_options*) and for saving the graph to disk (see [G-3] *saving_option*).

Remarks and examples

The idea of graphing means of categorical variables was shown in Chambers and Hastie (1992, 3). Because this was shown in the context of an S function for making such graphs, it doubtless has roots going back further than that. grmeanby is, in any case, another implementation of what we will assume is their idea.

▷ Example 1

Using a variation of our auto dataset, we graph the mean of mpg by foreign, rep77, rep78, and make:

```
. use https://www.stata-press.com/data/r19/auto1
(Automobile models)
. grmeanby foreign rep77 rep78 make, sum(mpg)
```
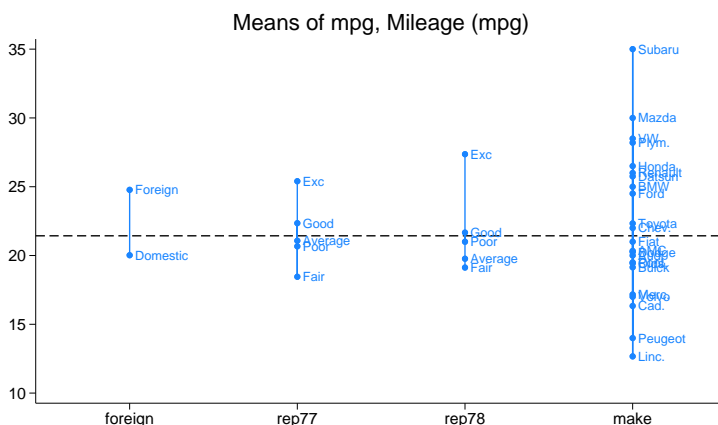

If we had wanted a graph of medians rather than means, we could have typed

```
. grmeanby foreign rep77 rep78 make, sum(mpg) median
```

◁

References

Chambers, J. M., and T. J. Hastie, eds. 1992. *Statistical Models in S.* Pacific Grove, CA: Wadsworth and Brooks/Cole. https://doi.org/10.1201/9780203738535.

Cox, N. J. 2014. Speaking Stata: Design plots for graphical summary of a response given factors. *Stata Journal* 14: 975–990.