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(+)
```

Menu

Statistics > Summaries, tables, and tests > Summary and descriptive statistics > Graph means/medians by groups

Syntax

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

options	Description
Main	
* summarize(*varname*)	graph mean (or median) of *varname*
median	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***).

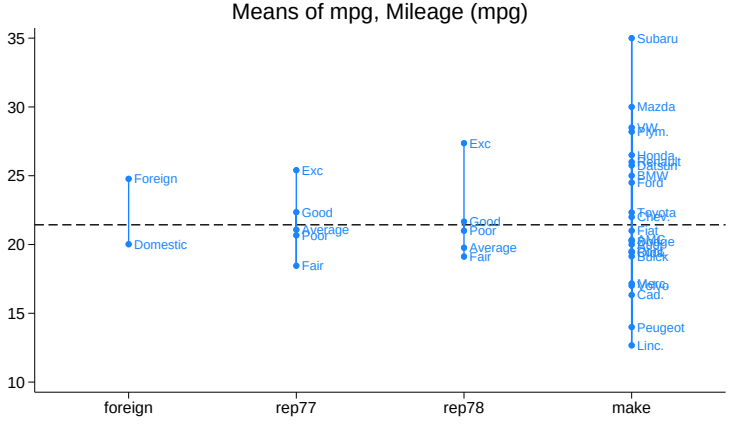
Remarks and examples

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.