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)

As above, but graph medians
   grmeanby cvar1 cvar2 cvar3, sum(v1) median

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**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main</strong></td>
</tr>
<tr>
<td><code>summarize(varname)</code></td>
</tr>
<tr>
<td><code>median</code></td>
</tr>
<tr>
<td><strong>Plot</strong></td>
</tr>
<tr>
<td><code>cline_options</code></td>
</tr>
<tr>
<td><code>marker_options</code></td>
</tr>
<tr>
<td><code>marker_label_options</code></td>
</tr>
<tr>
<td><strong>Y axis, X axis, Titles, Legend, Overall</strong></td>
</tr>
<tr>
<td><code>twoway_options</code></td>
</tr>
</tbody>
</table>

*`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/r16/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
