



software review

## The Wizard Returns

New time saving and conjoint-enhancing tools for researchers.

*By Ken Deal*

**S**tatWizards was introduced in 2006 as a suite of applications to assist with the design, analysis preparation, and simulation for discrete choice conjoint studies. It provided another facet to the discrete choice conjoint work that seemed somewhat closer to the SAS approach than to the Sawtooth Software orientation and was a direct parody of neither. The suite has now been refined substantially to offer features that aid further in this analysis niche. In addition, StatWizards has recently introduced an Excel add-in that expedites working with the output files from Latent GOLD, a product of Statistical Innovations. For these reasons, StatWizards is being reviewed again in these pages. (The original review was published in the summer 2006 issue.)

Latent Gold Formatter (LGF) was introduced in 2007 by StatWizards and is a very handy tool. Latent GOLD (LG) is an excellent product from Statistical Innovations for performing latent class analysis and was reviewed here in the Winter 2000 issue. The output from LG is produced in several worksheets that look very much like Excel worksheets; these are attractive and very well-organized. However, in order to work further with the LG output, its worksheets have to be either copied and pasted, one-by-one into corresponding Excel worksheets, or the LG output can be saved as a text file and imported into Excel or some other application. After the translation, further investigation usually occurs, followed by some graphing to better understand the findings and communicate with colleagues. LGF now simplifies this translation process, helps to identify the best range of solutions, and moves the presentation process ahead.

LG is often used to identify the best number of segments of a data set and, when used in this manner, the output may contain solutions for two through six segments, for example. When used for segmentation, LG would produce a set of five or more worksheets for each segment solution. The first action of LGF is to access the LGF text file containing all of the model views for the multiple segment solution and convert those to a set of Excel spreadsheets within one workbook. That feature alone saves a great deal of time for the analyst.

After producing the LG analyses for the several segmentation alternatives, the analyst must decide on the "best" segmentation. While several considerations may help decide on the best segmentation, often the Bayesian Information Criterion (BIC) is used as the first statistical indicator of the best number of segments. LGF allows users to display either the solution with the lowest BIC or to choose that lowest

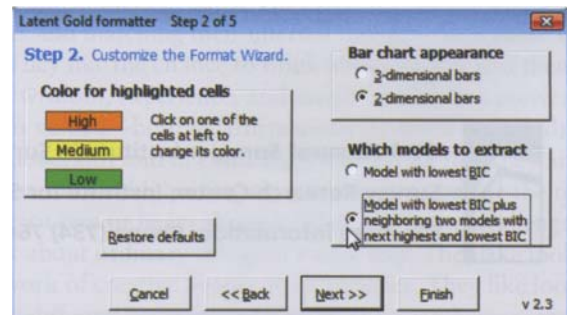
BIC solution and the solutions on both sides. (See Exhibit 1.)

Because other important statistics and the need to realistically interpret the segmentation influences analysts to consider solutions on either side of the lowest BIC, this is a very helpful feature. A line graph of these three BICs helps to determine whether the neighboring BICs are close to the minimum value or much higher. (See Exhibit 2.)

LGF then moves through the several spreadsheets providing highlights of the analysis and graphs. For example, the percent of actual respondents in a category that are correctly classified based on the model and presented in the classification table are bolded. In the parameters page of the LG output, the names of the segments may be entered and carried through to later sheets, and the high, low, and above average values of the parameters for each variable are color coded. The p-values for the Wald statistics that are not significant are colored red for easy identification. The parameters sheet in LG can be switched between the Wald statistics and z-statistics. It would be very helpful if the next version of LGF would set up two parameters sheets—one for each type of statistics with the appropriate color coding.

In the LG profiles sheet, the probabilities that respondents are in each of the categories for the variable for each segment are provided. LGF color codes the sheet to show the highest and lowest probabilities as well as those that are above average. In addition, a graph is generated for each variable show-

**Exhibit 1** Options provided by Latent GOLD Formatter



the probabilities that those in each segment are in each of variable's categories. (See Exhibit 3.) These graphs are very helpful and, of course, can be switched within Excel to show distribution of those in each category that are in each segment. The ProbMeans are color coded for high and low probabilities across the segments for each category of a variable; it may also be helpful to provide line graphs similar to those generated for the profiles.

In summary, Latent GOLD Formatter is a very helpful tool for analysts who regularly work with Latent GOLD or Latent GOLD Choice and want to eliminate much of the tedious transfer of findings to Excel and get more quickly to presentation of key findings.

### StatWizards Suite

Since StatWizards was reviewed in the summer 2006 issue, I'll give a very short summary of the benefits of each component followed by the new features that have been added since that review. The StatWizards Suite was developed as an alter-

native way to design a conjoint experiment, prepare the data for analysis, and simulate scenarios of possible market activity.

**Design Wizard.** This Excel add-in is the first step in the suite and provides the experimental design for the discrete choice conjoint study. The user just types the attribute name at the top of a column with the levels of the attributes on the rows below and continues column-by-column until all attributes have been listed. Design Wizard then develops the design, displays it, and allows it to be printed to either multiple sheets or the printer. In addition, an option is provided to "print" each store (i.e., choice task) with circles for alternative selection or to alter the wording for Web presentation. Also, a rotation option is provided as well as an option for presenting the choices in MaxDiff format. The design may be exported for further investigation and archiving. There have been a number of formatting changes to this part of the suite; the MaxDiff format has been added and quite a bit of user explanation has been added as pop-up comments. In addition, an overlap minimization capability has been added.

**Data Wizard.** This second suite component takes the data from the field and organizes it for analysis by one of the four statistical applications that are supported by StatWizards. The choice data is accessed, the experimental design file is retrieved, and the desired analysis software is specified. After

Exhibit 2 LGF identifies the best three segment

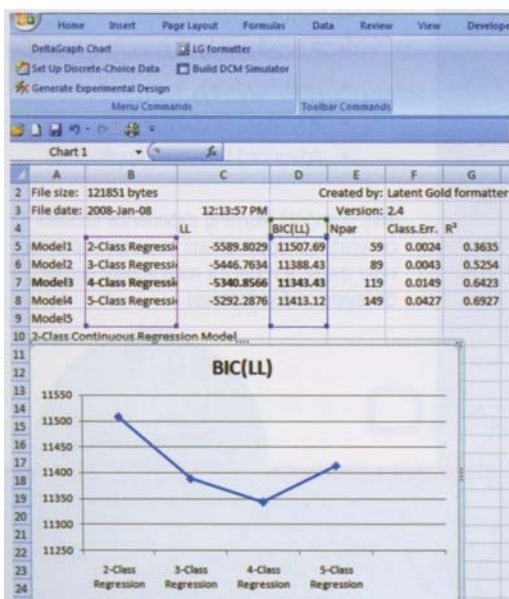
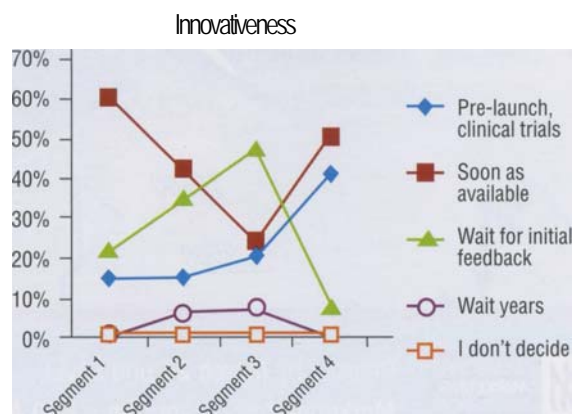


Exhibit 3 A Latent GOLD Formatter graph



that, the Data Wizard prepares the data for analysis by (1) Latent GOLD Choice, (2) Limdep NLOGIT, (3) Gauss, or (4) Sawtooth Software CBC/HB. The Sawtooth Software alternative was added since the last review and adds significant flexibility in the analysis by providing a direct linkage to hierarchical Bayes analysis and the individual-level coefficients produced by that procedure. StatWizards has just begun to work on an additional feature where the data will be produced for analysis by the random parameters logit, or mixed logit, facility in Limdep NLOGIT. This provides a second way to produce individual-level coefficients. Preparing data files in the formats acceptable to these statistical applications can be quite difficult, and using Data Wizard for this purpose will save substantial time on each project. Command file templates can now be produced for Limdep and can make this somewhat difficult data input task much easier.

**Simulator Wizard.** The last component in the suite produces a simulator in Excel using the data that was analyzed in one of the supported applications. The analyses produced by Limdep NLOGIT, Gauss, Latent GOLD Choice, and Sawtooth Software CBC/HB can be used to develop an Excel simulator that has many features and has a great deal of flexibility. The most significant addition since the last review is the

inclusion of the use of the Sawtooth Software hierarchical Bayes data, and there have been several others, such as now allowing discrete prices for the price curves.

Finally, StatWizards achieved the daunting task of converting all four add-ins to work with Excel 2007 and Microsoft Vista. While this is expected from any user, I understand that many months of work was necessary for all functions to work properly ... mission accomplished!

StatWizards can be investigated by visiting [www.StatWizards.com](http://www.StatWizards.com). Demonstration versions of the software, tutorials, and sample data are available. The Latent GOLD Format Wizard costs \$195 and the StatWizard Discrete Choice Suite is priced at \$2400. •

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