RXL – A Free Excel Add-in for Introductory Business Statistics

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In the last decade, there has been a trend among business schools to shift the focus of an Introductory Business Statistics course from the traditional approach of teaching statistics via formulae to an interpretive approach which emphasizes interpretations of statistical output obtained with the help of some statistical software. A survey of existing textbooks in the market reveals that a majority of them incorporate detailed instructions on *Excel* and its add-ins. Only a small portion of the remaining textbooks utilize other statistical software such as *Minitab*, *SPSS* or *SAS* to perform the statistical computations.

However, in a position paper to the Mathematical Association of America, the American Statistical Association (ASA, 2000) commented that "Generic packages such as Excel are not sufficient even for the teaching of statistics, let alone for research and consulting." Numerous studies have highlighted the deficiencies and dangers of using *Excel* as a statistical package for teaching and research.

As a result, there have been quite a few *Excel* add-ins written to address and attempt to solve the problems of using *Excel* and its add-ins in the Microsoft Data Analysis Toolpak. Some examples are *Analyse-it*®, *Fast Statistics*©, *Lumenaut*©, *N-SEA*©, *PopTools*, *SigmaXL*®, *statistiXL*©, *UNISTAT*®, and *XLSTAT*©. With the exception of *PopTools*, which is written specifically to analyze ecological models, these add-ins are commercial products that have an annual single user license fee. In light of the ever rising textbook prices and the costs of attending colleges/universities, it will be valuable to the students, instructors and researchers to have the freedom of using an *Excel* add-in that utilizes the familiar interface of *Excel* and offers an extended range of statistical procedures that are already available in *R* without having to be burdened with the usage cost. We attempt to accomplish this with an *Excel* add-in, *RXL*, that utilizes the "macro mode" and "worksheet functions" capability of *R-Excel* developed by Thomas Baier and Erich Neuwirth.

RXL will include within its menu driven GUI many of the procedures covered in a typical introductory statistics course. It also replaces a list of *Excel* functions that are commonly used in an introductory business statistics course with the corresponding *R* functions while retaining the valuable automatic recalculation feature of *Excel*.

RXL will be distributed under the GNU GPL Agreement. The GPL puts students, instructors and researchers in control of their usage of the software by providing them with the freedom to run, copy, distribute, study, change and improve the software, thus, freeing them from the bondage of proprietary software.

The continuous evolution of *RXL* will not only have a significant impact on the teaching of an introductory statistics course by providing a free alternative to the commercial proprietary software but also provide researchers in all disciplines who require sophisticated and cutting edge statistical and graphical procedures with a user-friendly interactive data analysis tool.