

Statistical Software for Students: Academic Practices & Employer Expectations

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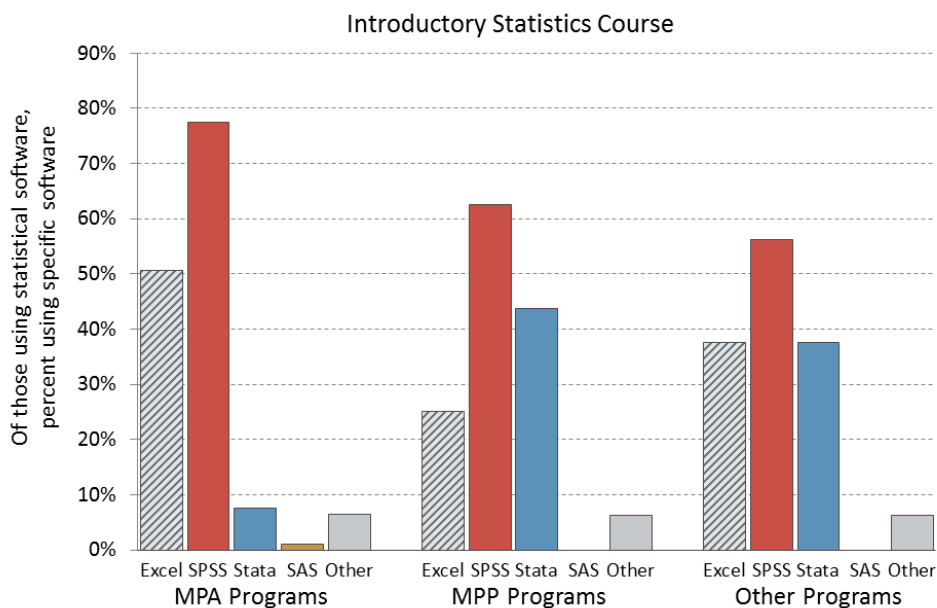
Public policy and public administration programs across the United States often teach students how to conduct statistical analysis using one or more software packages. Which packages should masters programs use to prepare graduate students for prospective employers? To answer this question we examined which programs they currently use, which programs employers prefer, and which programs researchers use in published studies. No prior published studies have systematically examined these questions.

We conducted a nationwide survey of MPP, MPA, and related programs to identify which statistical software programs are used in their graduate curriculum.

Responses were received from 98 Master of Public Administration programs, 16 Master of Public Policy programs, and 17 closely related masters programs, a majority of those polled.

BUDGET & FINANCE: Most of these masters programs offer an introductory budget and finance course. Those courses usually involve statistical software, sometimes include a computer lab, and nearly always employ Excel.

INTRO STATISTICS: These programs overwhelmingly offer an introductory statistics course that uses statistical software and is accompanied by a computer lab. In MPA programs, a large majority use SPSS as do a majority in MPP and other masters programs. (See graph.) Some MPA programs use both Excel and SPSS.



Note: Totals for each type of Masters program sum to more than 100% because some courses employ more than one statistical software package; most often SPSS is coupled with Excel.

In MPP programs, Stata supplants Excel as a main rival to SPSS in the introductory course, but SPSS still is used by a majority.

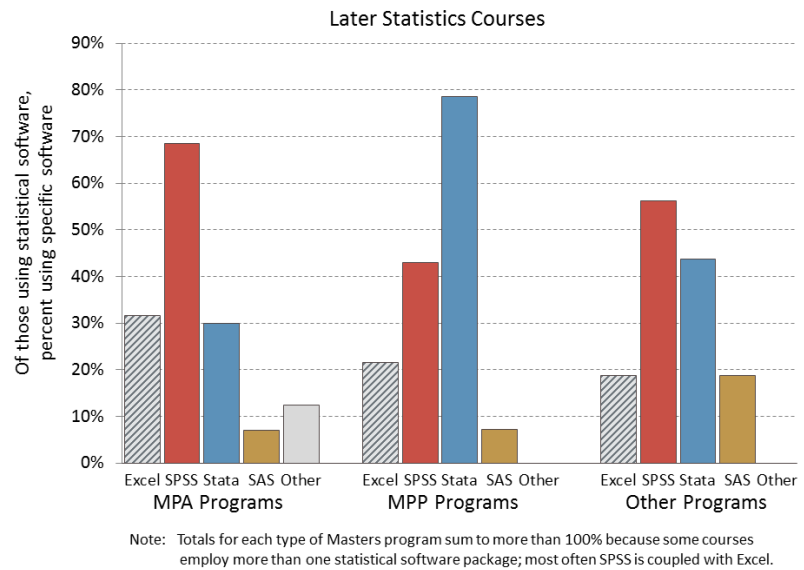
Among other masters programs, both Excel and Stata are used but SPSS still garners a majority.

Other software (e.g., R, JMP, gretl, and Crystal Ball) are rarely used.

LATER STATS: In later statistics courses, Stata surpasses SPSS in MPP programs and shows a nontrivial presence among MPA and other masters programs, although SPSS continues to be the software of choice among MPA programs. Other masters programs were in-between, with SPSS on top but with Stata often used as well.

EMPLOYERS: Students may gain a competitive advantage by acquiring familiarity with a package that their prospective employers are likely to be using. Which statistical software do relevant employers most often mention in their job announcements?

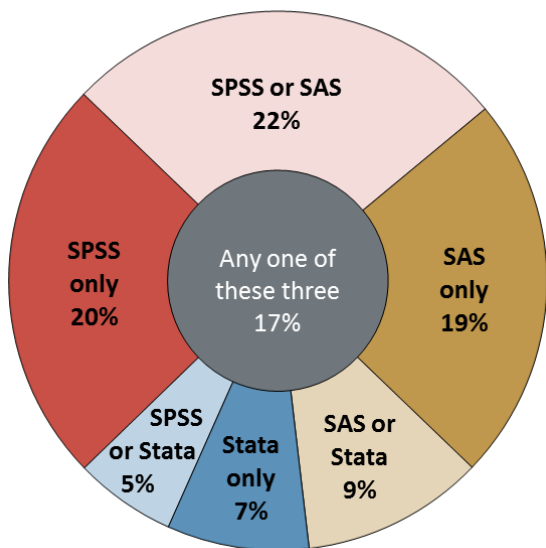
Job listings were closely analyzed from the following online sites: USAJobs.gov (federal government jobs), Idealist.org (jobs with nonprofits), PolicyJobs.net, ten largest state governments, ten largest city governments, five major consulting firms, and four major public policy research organizations. Most listings requested "familiarity" or "experience with," not proficiency or mastery of, the named software.



Relevant employer requests for experience with Excel far surpasses that of SAS, SPSS, and Stata combined. Among the nonspreadsheet packages, SPSS and SAS outrank Stata. SAS alone fits two-thirds of the listings citing one of these packages; SPSS alone is sufficient for almost two-thirds; and Stata alone satisfies about four out of ten.

ACADEMIC RESEARCH: A fifteen-year time series review of statistical software cited on academic research relevant to public policy and management revealed that a plurality of publications in the most recent period still cite SPSS, but that references to Stata have surged dramatically over the past fifteen years. During this period the relative frequency of SAS and Excel references has declined.

As public policy and administration faculties evaluate their curricula, the findings from this research on program practices and employer priorities regarding computer software skills can contribute to their discussions.



Statistics Software Cited in Relevant Job Announcements (SPSS, SAS, Stata Only)

Teaching Workshop of the Association for Public Policy Research and Management conference at the University of Maryland, November 2, 2011. Full paper available from authors (adams@gwu.edu).