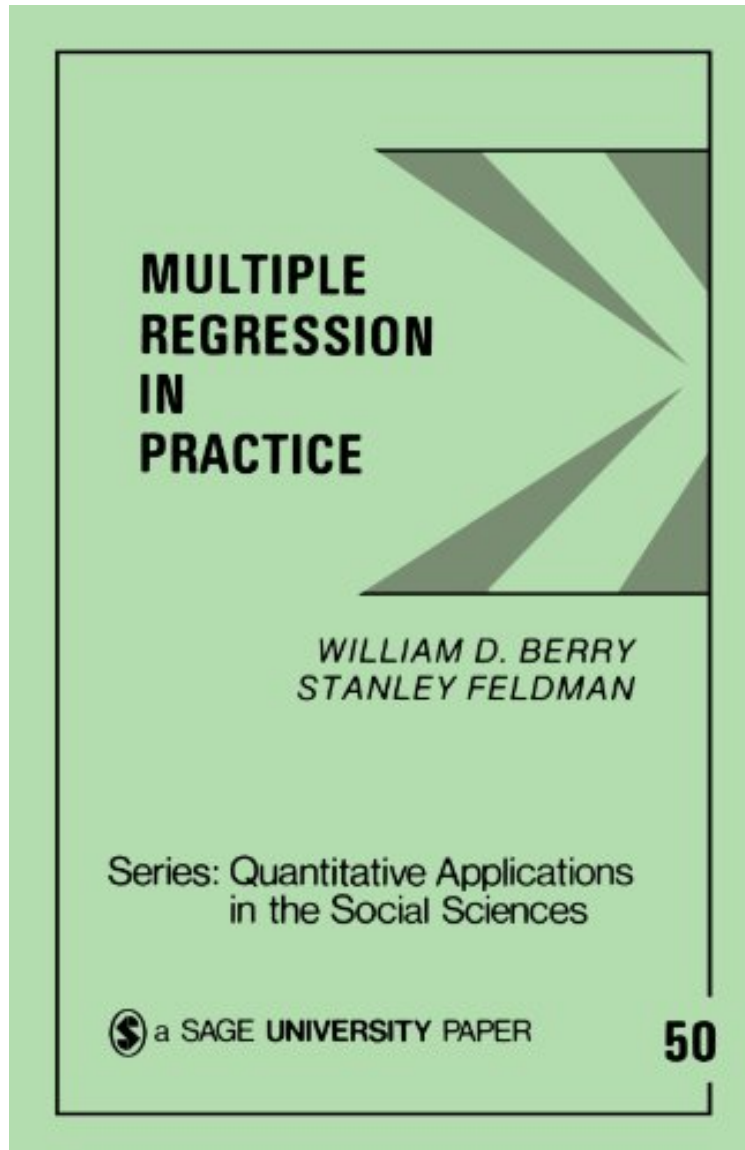


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## Multiple Regression in Practice (Quantitative Applications in the Social Sciences)

*William D. Berry, Stanley Feldman*

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**William D. Berry, Stanley Feldman : Multiple Regression in Practice (Quantitative Applications in the Social Sciences)** before purchasing it in order to gauge whether or not it would be worth my time, and all praised Multiple Regression in Practice (Quantitative Applications in the Social Sciences):

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review helpful. Although I purchased this book because it was required by ...By Rebecca and ShelbyAlthough I purchased this book because it was required by my professor who never had us use it, not even one time, it seems to be very helpful for anyone interested in learning about multiple regression.4 of 4 people found the following review helpful. A Bit Dated But Still UsefulBy not a naturalIf you've completed a course in multiple regression analysis, the material covered in Berry and Feldman's *Multiple Regression in Practice* may seem to offer nothing new. They discuss the assumptions that computation of BLUE (best linear unbiased estimates) presuppose when regression coefficients are use estimated using OLS (ordinary least squares) estimators. However, their treatment of these issues, while in some respects a bit dated, provides useful clarification of assumptions, ways to detect their violation, and possible correctives. At the very least, the book offers a sound basis for review for someone who has been away from the material and gotten a bit rusty.One of the attractive features of Berry and Feldman's treatment is their use of one hundred random samples of fifty cases each to approximate sampling distributions of coefficients. This enables them to illustrate consequences of specification error, measurement error, multicollinearity, and heteroscedasticity in ways that are both instructive and convincing. It's a simple thing, but the author's scatter plot illustrating heteroscedasticity in Figure 6.4 on page 84 is far more realistic than most textbook illustrations.Furthermore, given the current near-obsessive interest in instrumental variables in a two-stage least squares framework as a means of compensating for measurement error, it is to their credit that Berry and Feldman remind us just how iffy use of instrumental variables commonly is. By way of contrast, see Angrist and Pische's recent very popular and over-valued book *Mostly Harmless Econometrics*. After all, given the conditions that must be met by instrumental variables, they are often very difficult to find. Moreover, even if we're satisfied that the instrument is strongly correlated with the corresponding independent variable, unrelated to the dependent variable, and orthogonal to the error term, if the instrument is measured with substantial error, its use will just substitute one source of random error for another. Nothing will have been gained except pointless complexity.For illustrative purposes, at various places the authors complement the two dimensional regression line with a three dimensional regression plane. It's probably just a deficiency on my part, but I have never been able to follow explanations based on regression planes. In truth, I had thought regression planes had fallen out of favor, with too few readers able to think in three dimensions. In fairness to Berry and Feldman, however, their book was first published in 1985 when use of the regression plane seemed to be de rigueur in books of this kind.I especially like Berry and Feldman's approach to gauging multicollinearity: regress each independent variable on all other independent variables and use practiced intuition to identify unusually large R-squared values, indicating likely multicollinearity problems. This procedure is the basis for now-conventional variance inflation factors, something that may not have been in use when Barry and Feldman were writing.*Multiple Regression in Practice* is the only textbook I know of that cautions against dropping an independent variable to deal with multicollinearity on other than unelaborated specification error grounds. The authors make clear that the closer the correlation of the deleted variable with the variables that remain in the equation, the more bias is introduced into coefficient estimates.The author's treatment of nonlinearity and additivity is instructive. As with Hardy's book *Regression with Dummy variables*, I learned to avoid commonplace errors in interpreting main effects in regression models with multiplicative interaction terms. Berry and Feldman seem to go a bit overboard in their discussion of non-linear relationships, including specifications that are unusually complex and rarely used.Heteroscedasticity and autocorrelation are dealt with adequately, though more recent tests and correctives, that I have found useful and easy to apply, were not included, such as the Koneker-Bassett test and the Estimated Generalized Least Squares corrective for heteroscedasticity. Some judicious updating would be a real plus.In spite of the fact that *Multiple Regression in Practice* is now twenty-six years old, it still provides a good discussion of regression analysis assumptions and related issues. It's written in a reasonably accessible way, and can be of real value for one who has already been introduced to multiple regression and would like to enhance their understanding of the assumptions. No, this is not a scintillating read, in fact its pretty dull. But the fact that it's accessible makes it a marked improvement over most statistics texts.

Berry and Feldman provide a systematic treatment of many of the major problems encountered in using regression analysis. The authors discuss: the consequences of violating the assumptions of the regression model; procedures for detecting when such violations occur; and strategies for dealing with these problems when they arise. The monograph was written without the use of matrix algebra, and numerous examples are provided from political science, sociology, and economics.

About the AuthorPh.D., University of Minnesota, 1980. Major research and teaching interests include public policy, budgeting, state politics and research methodology. Berrys primary areas of interest are public policy, American state politics, and research methodology. Throughout his career, his work has focused on explaining why governments make the policy choices they do, and improving the methodologies available for studying policy making. Among his current research projects are analyses of the impact of electoral competition on the policy choices made by state legislators, and the effect of state welfare policy on poverty in the United States. Berrys current research on methodology focuses on the development of techniques for estimating econometric models with binary dependent

variables, and methods for studying policy diffusion using geographical information systems. Berry has also been working for several years collecting data on outcomes of all state legislative elections in the U.S. since the 1960s; he has begun to use these data to study the behavior of challengers in state legislative elections, and the role of partisan and incumbent protection goals in determining the nature of redistricting in state legislatures. Areas of Interest: Political Behavior: political psychology and socialization; political ideology and values; prejudice and intolerance; public opinion; political participation; political sociology. Methodology: statistics; econometrics; measurement theory and scaling; analysis of covariance structures; multivariate methods; survey research methods; logic of inquiry and research design.