

## Discriminant Analysis; Telecommunications and Economic Development; Taking a Stand: Extension and Public Policy Issues

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## Discriminant Analysis; Telecommunications and Economic Development; Taking a Stand: Extension and Public Policy Issues

### Abstract

Reviews of "Discriminant Analysis," by William R. Klecka; *Telecommunications and Economic Development* by Robert J. Saunders, Jeremy J. Warford, and Bjorn Wellenius; "Taking a Stand: Extension and Public Policy Issues," by Richard L. Barrows.

# Reviews

**“Discriminant Analysis,” William R. Klecka. Sage Paper Series #07-019, (Beverly Hills: Sage Publications, 1980). \$4 paperback, 71 pages.**

Klecka, an associate professor of political science at the University of Cincinnati, presents a fairly readable overview of discriminant analysis. First he defines it, oftentimes through comparisons with other statistical techniques, such as analysis of variance and factor analysis.

Then he provides specific analytical questions, together with examples of how they might be solved with discriminant analysis. Klecka describes it in two steps (oversimplified in the following description). In the first step the research tries to find people who come close to stereotypes of the different types of people the researcher expects to find in the study. From that data, a combination of multiple regression and analysis of variance methods are used in an SPSS analysis (Statistical Packages for the Social Sciences) to establish equations that define the data that best discriminate among the major types of people involved.

For example, a political scientist might want to use discriminant analysis to define the publics on an issue like nuclear power.

Through this interpretive stage, researchers can find out which demographic variables, for instance, are most involved in defining the group that form on this issue. The computer package indicates the relative contribution of each statistically significant variable in defining that group. The next stage is to use the combination of equations (each called a “discriminant function”) found with the computer to classify unknown cases from that time on.

For example, again oversimplifying, if those opposed to nuclear power, as a group, are found to be from 18 to 34 years old, college educated, with white collar or professional

positions in nonscience areas, we might expect others with those characteristics to be against nuclear power as well.

Through his discussion, the political scientist distinguishes between the all-at-once approach to discriminant analysis and the stepwise approach, with examples of each. He also discusses the relative advantages and disadvantages of the different stepwise methods.

Those not familiar with statistics might read through the book quickly. Klecka presents a more logical step-by-step approach later in his manuscript. A second reading following Klecka's steps might be more understandable.

The political science professor also wrote the chapter on discriminant analysis in the SPSS manual. It presents the detail that might make for good companion reading, especially for those who intend to use this technique.

Klecka's paper is one of 25 small paperbacks produced by Sage on statistical methods. Topics range from analysis of variance to Applied Regression and Research Designs (\$4 each). Sage Publications has established a solid reputation with larger publications that more fully explore such broad research topics as the uses and gratifications approach to communications research. Simply put, it asks what the readers wants to get out reading, for example.

If "Discriminant Analysis" is typical, this Sage series does make difficult statistical methods easier to understand—but it's still not easy reading.

Jim Shaner  
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**Saunders, Robert J., Jeremy J. Warford, and Bjorn Wellenius. *Telecommunications and Economic Development*. (Published for the World Bank by The Johns Hopkins University Press, Baltimore, MD, 21818, 1983) 395 pages, \$14.95 paperback, \$32.50 hardcover.**

You are an agricultural communications consultant to the government of a Third World country. They tell you: "Find us a communications technology with high unmet demand, high economic returns on our investments, a wide diversity of effects on development, and declining unit costs." These authors say your answer would be, "the telephone."

They proceed to back up their contention with figures, reports of studies, analysis of research, and plenty of solid economic thinking and reporting. What have they found? Business is usually the first big user of a new phone system in a developing country, and then the government. As more of a system becomes available, use spreads to private individuals. Persons with better incomes, more education, seem to use phones more.

Although rural people often use phones less than do urban dwellers, their phones are used a higher proportion of the time to contact other sectors of the economy. This makes sense in that they must check on markets, transportation, help, etc.—in economics terms, talk with others about inputs and outputs for agriculture.

There are lots of unintended consequences from putting a telephone system in a developing country. People have to learn how to use a telephone, and find out what they can use it for. Then they become very creative in the ways they use it. Some governments fear that if everyone has access to a phone, this will expedite communication among dissident groups as well as among those favorable to the current government. So there can be a risk to bringing in a phone system and making it generally available, from their point of view.

I'm not an economist. I'm more a text person than a tabular data person or footnote person. So there were parts of the book I glossed over rapidly or skipped entirely after sampling—the details of economics analyses, for example. I did make the mistake of sampling footnotes—in a “Notes” section at the end of each chapter. I found many of them as fascinating as the text and not the usual “Literature Cited” type. So I got in the habit of at least checking each “Notes” section to see what was there—and was rewarded most of the time with little additional tidbits of information and explanation.

Chapters 4 through 9 gave me another bonus: Specific and concrete examples—some 30 of them. Here the authors discuss and analyze individual/relevant research studies. This is a service to a reader who doesn't know the literature in this field. The authors not only succinctly report relevant research, but critique the research and point out weak spots as well.

There are six major parts to the text: An introductory perspective, macroeconomic analysis of benefits,

microeconomic analysis of benefits, telephone access and use, telecommunications tariff policy, and mobilizing resources—an alternative solution. A very helpful section is entitled “Acronyms and Abbreviations.” I found that I used this list periodically to be sure what the initials I was reading referred to.

One conclusion of the World Bank authors is that telephone systems in developing countries may need subsidizing to get started, but that such financing shouldn’t necessarily come from the government and compete with sectors such as education, health, and nutrition, which generally do not earn revenue.

What communicators in international agricultural development work should do is read this book for what it says about the telephone as a social, economic, and developmental medium. And then—when asked to recommend what another country should buy in the way of communications media and hardware—apply to that problem some of the same systematic thinking, data collection, and analysis these authors did. I’m sure our recommendations would be more soundly based and have a greater probability of paying off for the people we are trying to help.

Mason E. Miller  
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**“Taking a Stand: Extension and Public Policy Issues,” by Richard L. Barrows, *Journal of Extension*, March/April, 1984, pp. 6-12.**

Barrows, a natural resource economist, tackles a question that he admits “has probably been around as long as Extension:” Should Extension be involved in public policy issues? He presents a convincing argument for following conventional wisdom: Yes—Extension should be involved in public policy *education*; No—to whether Extension should take a stand.

Since Extension is publicly funded, the agricultural economist argues we are “morally obliged” to help people “grapple with the policy issues of the society.” Barrows continues, “The land-grant university in general, and Extension in particular, . . . is committed to using the knowledge of the

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University to improve people's well-being. An increasingly important part" of what affects that well-being "is decided in the public arena, through policy decision."

The agricultural economist argues that even a county agent recommending chemicals in pest control "will be viewed by many as taking a stand against environmental protection." So Barrow's point is to use the "alternative-consequences" teaching model to make that involvement effective—and safe. He calls it the "only way to survive in policy education in today's political environment."

"In the most common version of the model, the educator helps people clarify the problem or issues, outlines the policy alternatives and the likely consequences of each, and leaves the decision to the democratic process." In an alternative approach, the audience gives the educator the "desired consequences" they want. Then the Extension educator helps them understand which alternatives might produce the consequences they want, together with their "side effects." Barrows says this approach is "more dangerous" because: "the educator assumes that the group understands the problem (which may be incorrect), and runs the risk of being perceived as an advocate."

Then Barrows attacks the idea of Extension's taking a stand.

The economist observes: "The vast majority of policy issues involve situations in which either: (1) the necessary objective data aren't all known; or (2) the known facts can be legitimately interpreted in two or more ways; or (3) the facts are known and have only one interpretation, but different value systems lead individuals to choose different policy alternatives; or (4) a combination.

"If we take the advocacy position, we're really saying that we're the only ones capable of knowing all the facts, and/or have the only correct interpretation of the generally known facts, and /or have the most appropriate set of values for the society." Plato's philosopher-king might claim such wisdom, Barrows suggests, but not Extension educators.

"The Advocacy Model isn't effective in the long run," Barrows continues. "If we advocate a particular position, we'll alienate some who disagree. Repeating this advocacy on issue after issue will eventually alienate almost everyone."

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