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Book Review

Reverse Engineering in Public Administration, Anyone?

PUJIONO*

A review of Paul C. Stern and Linda Kalof, *Evaluating Social Science Research.* Second Edition. (New York: Oxford University Press, 1996).

Against the backdrop of controversies and skepticism associated with the positivistic model of empirical research in social science, Stern and Kalof remind us that critiques hurled against logical positivism are warnings that social science researches are plagued with limitations; thus it is imperative that social scientists be humbler. As long as a more solid paradigm is not yet affirmed, logical positivism remains to be the significant empirical method to systematically pursue knowledge. They assert that given those limitations, different ways of learning are necessary to supplement the alleged limitations of positivism. Thus, it is imperative to continue using the empirical methods based on positivism but complement it by cross-checking observations and interpretations.

Ideally, the students should become critical agents who bring about higher levels of knowledge out of the existing researches. It is ironic, however, that research students particularly the beginners (including majority of us, undoubtedly), are usually not conversant in evaluating results of social researches and are not equipped enough to identify and take advantage of the significance, and/or limitations of research as reported in the literature. Thus, they deny themselves the ability to appreciate and to move forward in the knowledge building. In the author's assertion, a research reader is:

> (t)he individual who evaluates a body of research literature ... is thus in (a) privileged position in advancing knowledge beyond what is known by the scientist whose work he or she reads because he or she can orchestrate the perspectives—use each scientific report and critique the others—and potentially arrive at a level of knowledge that makes sense of both scientific consensus and dispute (Stern and Kalof 1996: xi).

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The authors accuse that our teaching curriculum on social science research at all levels is designed to produce researchers by putting premium on the acquisition of "methodological vocabulary" and by inducing systematic understanding of how to undertake social science research. The reality in school as well as in the profession, however, is that—except for an exceptionally small number who are inspired to become academics—students are consumers of social science research both during their study in schools as well as after entering the profession. The conventional curriculum does not produce either good researchers or good readers of social science research. On a more practical level, Stern and Kalof suspect that the conventional curriculum teaches research methods when students are not yet adequately equipped with skills to review a body of empirical literature—the very foundation of social research that the students are expected to eventually undertake.

The volume attempts to fill this gap by giving social science students the necessary armor to take the role of consumers of scientific evidences. This is motivated by the persuasions that (1) students need to have the cognitive skills to undertake critical reading of an empirical research to appreciate its values and caveats using judgment on its facts rather than its values; (2) students must be able to critically use bibliographic resources and researches; (3) only then can the students undertake research themselves; and (4) students can apply the skills of questioning in their everyday lives.

One cannot help but agree with the author's assertion regarding research students' needs and problems to deal with when entering the introductory part of the usual research course. An introductory part of a research course, the field of Public Administration included, can be traumatic in that the students would be either too scared to undertake a social research (unless they are academically being forced to undertake one) or too impotent to argue against completed research in a body of literature particularly if they are written by "big shots" in the discipline. In the end, students are treading the dangerous line of believing dogmas rather than facts.

The first chapter differentiates between what is scientific and what is not. Departing from the identification of what statement is considered factual and what is not, it posits that any statement can be rejected or confirmed by its evidence. Minus the facts or observable evidences, a statement is merely an "unsupported assertion" that relies on authority other than empirical observation. In order to identify the needed evidences, the statements must be concretized through a series of operationalizations of its known aspects. In effect, researchers undertake the classifying, ordering, and/or quantifying of social situations to make them measurable. These aspects can individually or collectively confirm, or otherwise, the truthfulness of the statements on the basis of undertaken and presented scientific evidences.

The skill to discriminate among the major methods of gathering evidence is treated in Chapter II. It introduces the methods and then assesses them one by one. Naturalistic observation is marked by its completeness and accuracy and is undertaken as the observed event unfolds with minimal interference of the researcher. Since it is not always possible to capture events as they take place, the researcher using the retrospective case study method may forego the completeness criterion and instead, rely on the recollection of participants of the event. The method of sample study is used to determine the frequency by looking at the sample. The correlational method is used to measure when there are two or more variables hypothetically related in the study and determines the presence and strength of the relation between these variables without manipulating either of them.

Last, the highest in the rank of empirical study, is the experimental method that not only determines the variables' relations, but establishes the causality by manipulating one variable while observing the other. The experimental method is divided into: (a) within subject when using only one subject; and (b) between subjects when there are more than one subject involved. The latter is further categorized into: (i) equivalent group design method when the researcher ensures the comparability of the two groups usually through randomization; and (ii) quasi experimental method where variables are manipulated but due to ethical and desirability reasons, randomization cannot be performed.

Each of these methods has its own procedures and unique characteristics of extraneous variables, i.e. variables other than those specified by the researcher that are capable of producing alternative explanations without invoking the hypothesis.

Chapter III provides the guide for assessing a research's internal validity by questioning the research procedures and observations. Stern and Kalof (1996: 62) warn:

> It is especially important to be alert when the research results support your own preconceived ideas, because that is when we are less critical of our own reasoning or someone else's.

When an author of a research states his or her conclusion, it is imperative for readers to ask two questions, i.e.: (1) do the data support the conclusions (hypothesized explanation) with respect to the population studied; and (2) if the conclusions are sound, do they generalize beyond the population sampled and the setting studied. The former question examines the study and the reasoning being used by the author to draw conclusion from the evidence, while the latter questions the external validity of a research.

After guiding the readers on how to identify the extraneous variables and the alternative explanations thereof, the chapter goes on to suggest ways to control these variables. Further looking into procedural details may make a difference in what a study is really measuring. The issue of sampling, for instance, is identified as one area where a reader may question the research author's conclusions. Lastly, the interactions between and among variables also determines the merit of the research author's conclusions.

At this point, the volume urges the readers to apply the knowledge from these chapters in exercises in evaluating evidence and drawing conclusions. Some summarized real researches are used as guinea pigs. It suggests a simple format to evaluate completed researches, i.e. by scrutinizing the following items of the researches: (1) methods; (2) hypothesis; (3) findings; and (4) extraneous variables and alternative explanations (Stern and Kalof 1996: 105).

Later, the volume presents full-blown research reports for readers to exercise the identification of the elements using a more refined format that includes the following:

(1) the method;
(2) the hypothesis: causal or noncausal;
(3) the variables (independent/dependent) and identification of their operationalization;
(4) the findings;
(5) the extraneous variables that are either controlled (by holding constant) and/or randomized;
(6) extraneous variables that offer alternative explanations including suggestions from the reader on ways to control them;
(7) research sample; and
(8) the interactions of the sample (Stern and Kalof 1996: 116).

Chapter IV ushers the reader into evaluating research reported in published literature. It provides practical guide on how to build a database of a body of literature through procedures of crossreviewing a number of studies. The chapter goes beyond just achieving its objectives, i.e. it helps readers "to make sense out of the result" (Stern and Kalof 1996: 238); it ends by equipping the readers on how to actually write as well as critique a review of researches.

Cautioning that practical inferences from a social science research has implications on policies, it sounds a warning:

> Social science research can produce useful information for making judgment, but it cannot provide all the information one might desire. As readers of social science research, we are wise to check back from time to time to see how well the available knowledge matches the questions we would like it to answer (Stern and Kalof 1996: 152).

Lastly, the authors introduce a meta-analysis as an important method to make use of research results. The skills to evaluate social science research put research readers in an advantaged position. Using several research reports as objects, they can employ statistical analysis in a "higher" level of study, which in itself is a research that can tremendously advance knowledge. The positive and negative aspects of meta-analysis are briefly enumerated.

The logic of this volume strongly resembles that of "reverse engineering," whereby students are introduced to each of and the interactions among parts of social science research by "disintegrating" research reports. Subsequently, students are helped to put the pieces together and then to compare the whole research with other researches, when necessary.

Literature on research is, so far, littered with volumes that invariably try to make research beginners into research experts simply through an intensive acquisition of methodological vocabulary. This volume seems to be the only volume that advocates the "reverse engineering" approach. Application of this approach in the teaching of Public Administration promises not a small benefit to students of the discipline. As long as Public Administration keeps absorbing research from its fellow disciplines while building its own research capabilities, the capability of its students and practitioners to evaluate social science research is very critical to the life and welfare of the discipline.

Reading this volume, one cannot help but feel "high" and almost excitedly imagine that students of Public Administration at various levels are producing skillful and substantial reviews of research of their fellows and seniors when they: (1) discuss assertions, statements, theories, and inferences in their daily discussions in the classrooms and their writings; and (2) subject the writings of Public Administration pundits and gurus to questioning. In effect, students of Public Administration gain more confidence to tackle the issue of research, both as doers and consumers, and contribute to the knowledge building and the praxis of the discipline.

Although inevitably psychology-sounding because the volume is developed from classroom teaching in the field of psychology, the use of many real-life completed researches, published materials, and other reviews as objects for its exercises and discussion remains relevant and can easily be identified with many other social science researches. The use of guides and exercises that incrementally grow from simple to complex is also useful for students.

The authors choose to use the second person appellation to be intimate with their audience. This, again, helps to pass the potentially and typically frightening subject of social research in a less threatening manner. The ordering of chapters and exercises is such that it effortlessly brings the students at the outset to the complex intricacies of social research. Incidentally, the

authors also illustrate how even highly respected researchers can still be reviewed and found to have shortcomings.

This book is invaluable to students who are putting together dissertation and/or thesis research proposals, and those who eventually will become full-fledged researchers. Aside from introducing the anatomy and logic of social science research, it points out traps and pitfalls from the perspectives of research readers. On a more practical note, the volume is a great help to students to construct the basic pillars of a research proposal and, eventually, to venture into the actual review of literature and build a database of existing researches. These usually are the very parts that are bewildering for research beginners.

In short, the volume is a welcome addition to the literature on social science research, and is recommended for both teachers and students of Public Administration. Practitioners, analysts, and decisionmakers would also likely be benefited by this book, particularly in building a mindset to become more critical and careful in making inferences from research findings into policies.

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