BASIC RESEARCH METHODS IN SOCIAL SCIENCE

THE ART OF EMPIRICAL INVESTIGATION

Julian L. Simon
University of Illinois

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Basic Research Methods in Social Science

CONSULTING EDITOR: HANAN C. SELVIN

State University of New York at Stony Brook

Acknowledgments

For a hundred years ingenious social scientists have faced obstacles in their empirical work, devised ways to circumvent the obstacles, and then told others what they learned. I am grateful to them.

Hanan Selvin subjected the penultimate draft of this manuscript to the searching scrutiny that most manuscripts need but few are lucky enough to get. The quantity and quality of his critical comments were an author's dream, and I have in many places appropriated his thought and word without special note. There would be fewer errors and obscurities in the book if I had followed his advice even more diligently.

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My greatest debt is to my wife, Rita. Without her encouragement this book would never have been done.

I have tried to cover the wide intellectual area of all the social sciences, and I hope the reader will bear with me when I depart from the substantive fields that I know best. I will appreciate hearing from anyone who can set me straight on any matter or who can give an instructive or interesting example to illuminate a point.

Jerusalem, 1968 J.L.S.

Prologue

Cast your mind back 450 years. The Governor of Rodera—a small Asian principality—decided to find out why the country's tax collections were not higher. Here is a classic problem for research, and much of mathematics and many of our social-science techniques were originally invented to improve taxation procedures.

The Governor first consulted an adviser who had studied in Europe and had learned something of Aristotelian logic. The adviser reasoned that good citizens willingly pay as much tax as they are able to, that the folk of Rodera were very good citizens, and that, therefore, the tax collections *could* not be higher.

The Governor immediately dismissed this syllogistic thinking as pure nonsense because he had no faith in the premises. Even without special training he was smart enough to understand the weakness of bad logic.

Next, the Governor called in the regional tax collectors and put the problem to them because they were experts in the tax-collection field. After consultation the consensus among the tax collectors was that the people of the country simply could not afford to pay any more taxes. To support this statement the tax men stated that they had already used every possible technique to extract higher taxes—raising valuations of property, checking on hidden assets, and the like—and even their best efforts could not raise more money.

The Governor recognized that the tax men's analysis of the situation might well be a self-seeking attempt to make themselves seem competent and hard-working, and he therefore disregarded this "expert opinion."

The Governor then concluded reluctantly that he would have to find out the answers for himself. He instructed an aide to bring him a handful of typical citizens. The people brought in were those who were closest at hand. They included a few beggars who had been loitering nearby plus the aide's brother and two young guards. It was obvious that these people were not representative of the population, and therefore it was useless to question

them. To put it in modern terms, the Governor recognized that he had a badly biased sample.

The aide was therefore instructed to bring in some "typical" peasants and townspeople, which he did. The Governor then asked them, "Why don't you pay more taxes?" The first few answers showed the folly of the question, for what he heard were excuses, complaints, entreaties—everything except what seemed to be sensible answers.

The Governor then confined his questions to factual matters. He asked about each person's property, his crops, family size, and the amount he paid in taxes. Assuming that the answers were true and that he could have them checked, the Governor thought he was getting somewhere.

The information obtained from such a small handful of people was not enough, however, because the group did not include any rich men, any people from the far provinces, any foreign residents, or any representatives of other important classes of people. Nor could the Governor tell from this sample how many people of each class there were. Therefore, the Governor ordered a nation-wide house-to-house census.

Now the data for a complete nation-wide United States census can be collected in months. But transportation and communications were poorer then, and few literate people could be found to collect information. The census therefore required twelve years.

By the fifth year the Governor grew impatient and decided to experiment with the effect of new pressures to increase tax collections. He ordered that anyone who did not pay half again as much tax as in the previous year would have his cattle confiscated. In fact the total taxes paid did not increase. But the crops were bad that year, and the Governor could not determine whether or not the taxes would have been as high or higher than otherwise if the crop had been normal. The trouble was that his experiment was uncontrolled, because he had not kept the old tax system in effect in some areas for comparison—that is, his experimental design was incomplete. And worst of all, many people slaughtered their cattle to avoid confiscation, which ruined the country's meat supply for several years.

By the time the data were all in hand at the end of the twelfth year, the national situation had changed, and the data collected in early years no longer meant much. (Nowadays we know how to take samples to reduce cost and avoid long time periods during which the picture may change.) Furthermore, after twelve years the tax-census data filled a whole warehouse, and another ten years would have been required to interpret them. The Governor gave up the task in disgust and retired to his harem.

The point of this story is that knowledge is often not easy to come by because there are many obstacles in one's path. And common sense alone is not enough. But by now social science has accumulated a body of tested experience on how best to overcome the obstacles and acquire empirical knowledge efficiently and safely. This book presents some of this accumulated experience.

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CHAPTER 1

Introduction

Purpose of the Book

This book is primarily for students who have never before studied or done empirical social-scientific research. I hope that the book contains good advice that will help you get your first research project off the ground successfully and increase your efficiency in later work. As for those of you who will not do empirical research, the book may teach you to distinguish good research from poor research and help you to understand why empirical researchers do things as they do.

People who have had some training or experience in empirical research may also gain from the basic level of the discussion. Basic concepts often are bypassed as one rushes to learn the methods of particular fields. Coming back to fundamentals can widen the perspective of an advanced student and fill holes in his knowledge. If an advanced student is to gain something from this book, however, he must have the wisdom to realize that the apparent simplicity of the basic concepts is often deceiving. For example, everyone knows that *ceteris paribus*—holding "all other things equal"—is important. But the more research you do, the more you realize how complex is the *ceteris paribus* idea, how difficult it is to choose the right *ceteris paribus* conditions, and