

# THE HALO EFFECT

dedicated to clear thinking about business and management

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## Study Guide for Business Researchers

*The Halo Effect ... and the Eight Other Delusions that Deceive Managers* exposes a number of errors that are commonly found in the business world. I show how these errors affect many articles in the business press, some academic research, as well as the most popular business best-sellers of recent years.

My book can also serve a secondary purpose: it can help business researchers do a better job in conducting their studies. This Study Guide is designed for people conducting research about business, whether in a company, at a consulting firm, or at a business school. It's intended to be used by business researchers to improve the validity and rigor of their studies, and to avoid some of the basic errors that rob so much research of its strength. It can also be a useful guide for people on the receiving end of business research—managers or journalists—to help them evaluate the value of a given study.

By no means is this intended as a thorough course in research methods—that would be far beyond the scope of such a brief guide. Think of it, instead, as a quick checklist to identify some of the most basic errors in business research. I hope it can be useful either as an individual tutorial, or as part of a classroom session.

This Study Guide has three parts:

**Part 1: Design – Basic Choices**

**Part 2: Data – Threats to Validity**

**Part 3: Drawing Conclusions – Logic and Inference**

The Three D's — Design, Data, and Drawing Conclusions — aren't rocket science. We're talking about the fundamental principles of good research. Yet it's remarkable how many prominent studies commit basic errors of either design, or data, or drawing conclusions — or sometimes of a combination of all three.

## Lesson 1: Design – Basic Choices

Research design refers to way a study is structured: what question is intended to be studied, using what sample, with data to be gathered from what sources, over what time period. A few basic questions are these:

### **Question 1:** *Is there a testable hypothesis?*

Any research begins with a question to be studied and, by extension, a hypothesis to be tested. The starting point is to identify something we are trying to explain—whether firm profitability, or sustained growth, or successful acquisitions, or the line—and suggesting what may lead to that outcome. The most important issues stem from the hypotheses to be tested. Is the design of the study appropriate to test the hypothesis in question? What are the independent and dependent variables? Are the necessary data available? Can they be gathered? What would I need to gather in order to provide support for, or refute, this hypothesis? If I gather appropriate data, will an analysis of those data allow me to reach a conclusion—that is, to reject one hypothesis and accept another? These are some of the basic questions to consider at the outset of any study.

### **Question 2:** *Is the sample appropriate to test the hypothesis?*

A second question about research design has to do with the sample for study. This is an extensive topic and should be studied at length elsewhere, as sampling involves questions of stratification, clustering, randomization, and so on. For now, I'll just mention a few of the more basic mistakes that we encounter in research about business performance.

*Is the sample size sufficient to generate statistical power?* Many studies of company performance rely on a very few examples, and then seek to make inferences based on them. This approach is, of course, highly suspect—we may have little more than a few anecdotes, hardly the basis upon which to draw a solid conclusion. On the other hand, gathering extensive data may be costly and time-consuming, yet may be essential given the way the hypothesis is framed.

*Is it a convenience sample?* A related error is to gather data from a sample that is easily available—a so-called convenience sample. Such a sample, however, may not be representative of the larger population of interest, and therefore a biased sample for study.

*Is the sample selected on the basis of results?* A frequent tendency in business research is to select companies that are, say, high performers, and then try to see what they have in common. In the language of research design, selecting only winners—or only losers—is called *selection on the dependent variable*. It gives rise to *Delusion 4: The Delusion of Connecting the Winning Dots*. That's what Peters and Waterman did in their 1982 book, *In Search of Excellence*, and others have done the same in studies of high performing ventures in China, successful teams, great leaders, and more. It's a mistake, of course, because looking only at high performers can *never* tell us what makes them successful. We need to have some low performers to compare them with. A better approach is to select a group of companies that have varied performance, some high and some low. In their 1994 book, *Built to Last*, Collins and Porras recognized the mistake of selecting only high performers, and therefore paired each of their *Visionary* companies with a comparison firm that had achieved only modest performance. That was a smart move, and avoided a design problem that undermined the findings of *In Search of Excellence*.

**Question 3:** *Is the time period appropriate to test the hypothesis?*

Many studies gather data at a single period of time—these are called *cross-sectional*. Cross-sectional designs are the easiest to conduct, but if the data are all gathered a single point of time, it may be difficult to do more than suggest correlation; it may be impossible to infer causality. A positive correlation between high performance and corporate social responsibility, for example, might be taken to indicate that a policy of corporate social responsibility leads to high performance—but it could also be true that only high performing companies have the resources to invest in social responsibility. If a study hopes to test a hypothesis of causality, it's useful to gather data over time, so that so that actions at one moment in time can be studied for their effect on outcomes at a subsequent time. Unless the design allows for a longitudinal dimension, we may not be able to say much about causality. (The Delusion of Correlation and Causality is described in Chapter 5.)

A final issue regarding the time period is whether the phenomena of interest are to be studied in real time, or in retrospect? Many scientific experiments—in chemistry, for example—can be conducted quickly, and then repeated again and again. Business performance, however, unfolds over many years, making it difficult to conduct studies of long duration in real-time. Since it is often impractical to observe companies over many years, it is entirely understandable that many studies of company performance identify those companies after the fact, then look backwards to try and determine what led to high or low performance. But while such an approach is understandable, it leads to a next challenge, which has to do with the quality of the data.

## **Lesson 2: Data – Threats to Validity**

Even if a study is well designed, it may still have serious problems related to the data. This is the basic issue that robs so many studies of business performance of their validity. As I write in *The Halo Effect*, if the data aren't of good quality, then the quantity is irrelevant.

**Question 4:** *Are the data for the dependent variable appropriate?*

What is the variable we are trying to explain—and what data shall we gather to capture it? Are our measures accurate, reliable, and valid—or are they based on sources that may be inaccurate or biased? Many studies of company performance have for a dependent variable things for which there are data that are objective and accurate—such as financial performance records, stock market indicators, and the like. (That's not so say that financial data are always correct—as we have seen in numerous accounting scandals of the past years.) But on the whole, relying on audited financial statements, or on data from Compustat, DataStream, and other sources, is sufficient.

**Question 5:** *Are the independent variables truly independent?*

More problematic are the dependent variables of studies about company performance. Perhaps the most fundamental idea in *The Halo Effect* is that many studies of company performance do

not gather independent variables that are truly independent of the thing they are trying to explain—and therefore reach conclusions that are highly questionable.

As I describe in Chapter 4 (“Halos All Around Us”), people have a natural tendency to make attributions about companies, about teams, and about leaders based on what they perceive its performance to be. Thus, when a company is performing well, with higher sales and profits and a booming stock price, people are often quick to infer that it has a capable leader, strong execution skills, a vibrant corporate culture, that it is highly customer focused, and more. When that same company experiences a dip in performance, it’s irresistible to infer that the leader became ineffective, execution skills deteriorated, the culture became complacent, and customers were ignored. Perhaps the company really did change in these ways, but often the explanation is simpler: a decline in performance led to a different set of attributions. The fact is, concepts like corporate culture, leadership, customer focus, execution capabilities, and more, are rather fuzzy. They are often not carefully defined and measured in a way that is truly independent of performance. This problem is very serious, since many of the things we commonly believe *drive* company performance are in fact attributions *based on* performance.

The Halo Effect affects business journalism, interviews with managers, large-scale surveys, and more. Unfortunately, when the data are contaminated with Halos, the findings based on those data are of questionable value. Many studies of business and management, including some of the best known books from recent years, are fundamentally flawed because they are based on data that are corrupted by the Halo Effect. Their findings need to be viewed with skepticism. (See also Chapter 5, “Research to the Rescue”)

The challenge for a researcher, therefore, is to ensure that the data used for independent variables are truly independent of performance. Data that run the risk of being altered by the Halo Effect ought not to be mixed with data from valid sources. The result, unfortunately, is that many variables of interest concerning company performance are very difficult, if not impossible, to study after the fact, despite the best intentions of researchers and managers themselves. Yet the difficulty of the endeavor should not lead us to compromise our standards of data integrity, and use for our independent variables data that are shaped by what is known about performance—for the result will not be valid.

**Question 6:** *Are the independent variables free from bias?*

A final issue regarding data has to do with noise versus and bias. A set of data may include noise—meaning that there are measurement errors, reporting errors, missing variables, and so forth. No data set is perfect. But if these errors are randomly distributed, they are said to constitute noise—and if we gather enough data, we may still detect a signal through the noise.

On the other hand, if the errors tend to be in one direction or another, then the data are not noisy, but are biased—in which case gathering more data does not solve the problem, but merely magnifies it. The bigger the data set, the more bias we have. The problem of the Halo Effect, above, is one of bias, not noise. If the sources used for the independent variables are systematically biased—because the performance of the company, whether good or bad, is known and therefore shapes the way data are reported—then enlarging the data set does not help. That is, in a nutshell, why the large amounts of data used in some well-known studies are entirely beside the point. The data are biased, and therefore a large sample size does not help.

### Lesson 3: Drawing Conclusions – Logic and Inference

Some studies of business performance are reasonably well-designed yet collect questionable data. Examples here are *Built to Last* by Jim Collins and Jerry Porras, and *Good to Great* by Jim Collins. By relying on data from sources that are often contaminated by the Halo Effect—by failing to insist that their independent variables are independent of the thing they are trying to explain—their findings are doubtful. Other studies gather valid data but are poorly designed for the research question—for instance, cross-sectional studies that seek to find causal relationships. There’s simply no way to answer the question of interest because of a flawed design. A third category contains both design problems and data problems. For example, *In Search of Excellence* began by selecting a sample of high performing companies, and then relied on data from sources that are questionable due to the Halo Effect. The result was an appealing story that seemed to make sense, but that lacked rigor.

A different set of studies are not badly designed, nor do they have bad data, but they still suffer from problems because the researchers draw conclusions that are unsupported. This leads to a final question:

**Question 7:** *Are the conclusions warranted from the data?*

A common error is what I call the *Delusion of the Wrong End of the Stick*. Consider the study by Bain & Co’s Chris Zook, which argued that companies do best when they stay focused on their core. In a study of 1,854 companies over 10 years, he found that of those companies that had achieved high performance—defined as *sustained, profitable growth*—fully 78% had focused on one core business. The conclusion: companies that focus on their core outperform those that do not. The design is not bad, as Zook looked at a wide sample of companies, not just high performers. The data are taken from reliable financial databases, so there is no reason to worry about the Halo Effect or other problems of data validity. Rather, the problem is one of *interpretation*. It may be true that 78% of high performing companies had a single core business, but it does *not* follow that having a single core improves your chances of success, because we don’t know the proportion of companies in the total population that had one core versus those that had more. We need to make sure we grab the right end of the stick. The key question is not how many successful companies have a focused profile; rather, it’s whether companies with a focused profile achieve success—which is an entirely different matter! Indeed, a change in strategy might not be the *cause* of bad performance as much as the *result*, since companies normally stay with a winning formula.

Thinking clearly about the Three D’s—Design, Data, and Drawing Conclusions—isn’t rocket science. We’re talking about the fundamental principles of good research. It’s remarkable how many prominent studies commit basic errors of either design, or data, or drawing conclusions—or some combination of the three.

Nor are these seven questions by any means meant to be a comprehensive list of issues in the design and conduct of business research—but they do represent a decent starting point. Many of the errors I have seen in business research—some reported in *The Halo Effect*, but many that I have found in studies since I wrote the book—could have been avoided by attention to these few questions. Thoughtful managers, as well as researchers, should be aware of these issues and be able to distinguish solid research from questionable research.