choose to type their own résumé for each job application. This approach sends a message to the recruiter that the student is taking special pains for this job—no mass-produced résumé here.

Interview Success

By preparing their own résumés, students develop strong product knowledge and strengthen their personal confidence. Their positive attitudes about the product will make for more successful interviews. Ley and Sandler found that "students' success in the initial career placement hinged significantly on their capacity to present themselves in a winning manner—lucidly outlining their career objectives and their plans for pursuing those objectives and why a position with a particular company appealed to them, all within a 15- to 20-minute interview."[4]

Career success. Most students want a successful career, but the definition of success is different for each individual. That is why each student must have a clear conception, reflected on the résumé, of what constitutes career success. A résumé that makes a clear career statement will help the student find the proper entry-level position with the right hospitality firm. If educators encourage students to use a product-marketing approach to résumé writing, most students can begin to experience career success in their first jobs. □

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[4]Ley and Sandler, p. 44.

Designing Research for Publication

One of the chief barriers to the publication of empirical research findings is poor research design. Here are some of the common pitfalls of research studies, and how to avoid them

by Robert C. Lewis and Abraham Pizam

THE NEED for empirical research for the hospitality industry has probably never been greater than it is today. Empirical research—pragmatic studies with managerial applications—is often performed on a proprietary basis for individual hospitality companies. But what is needed are good *nonproprietary* research studies that will benefit the entire industry.

We contend that hospitality educators should take up this gauntlet—to design and publish useful research that demonstrates what can be done, why it is worthwhile, and how it can be applied. Academe has the tools and knowledge to do this.

But the research must be accurate, reliable, and valid; its findings must be generalizable to situations other than the one being studied; and the research must be reported clearly. The world is full of descriptive studies drawn from biased samples, and studies that leave readers saying, "So what?" When reporting on a study, a researcher must not only develop sound findings but also demonstrate what these findings mean to the industry.

In this article, we discuss how to design a research study that produces results worth publishing. Most manuscripts based on poorly conducted studies are rejected, and reviewers and editors know full well how heartbreaking that rejection must be to the author. *If only this or that had been done.* But one cannot go back and make changes in such things as samples, questionnaires, or measuring scales after the data have been collected. The major requirement for a proper research study is a basic knowledge of research design.

Rejection Slips

Although editors cringe at poorly written manuscripts, writing quality is usually not the chief reason

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that a manuscript based on a research study is rejected. Even in the midst of muddy prose, if there is a solid study being reported, the editors and reviewers can usually find it. If what you have to say is worthwhile, but you have said it in a somewhat confused and disorganized fashion, editors will generally return the manuscript to you with suggestions for revision, instead of rejecting it completely.

Outright rejection is usually the result of a poor study design. There is no way reviewers' suggestions or editors' alterations can save a manuscript that is based on bad research. From talking with editors and with other reviewers of hospitality-management manuscripts, and drawing on our own experience as reviewers, we have compiled a list of the most common faults in empirical research for the hospitality industry. They are listed in the box at right.

We have listed the problems in order of their frequency of occurrence. The most common problem, as indicated on this list, is lack of construct validity. But the issue of validity is not the first one a researcher confronts in designing a study. The first problem is identifying the issue, problem, or purpose of the research. Therefore, we will discuss this matter first. And instead of treating the list of faults in order of their frequency, we will discuss them in the order that a researcher would deal with them. The examples used have been simplified for clarity, but they are similar to actual situations from rejected manuscripts.

Defining Problems

Any research worth doing is aimed at solving a problem. If it doesn't define a problem, the most sterling research study is not worth publishing. Editors will surely reject a

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Common Faults of Research Projects

1. Lack of construct validity
2. Failure to control for intervening variables
3. Unwarranted conceptual leaps, unsupported conclusions, and presumptive judgments
4. Failure to apply tests of statistical significance
5. Errors in sample selection
6. Failure to identify the issue, problem, or purpose of the research
7. Failure to capture the richness of data (whether because of poor research instruments or poor statistical analysis)
8. Failure to define or limit variables
9. Poor writing
10. Failure to notice spurious relationships

Note: These items are presented in order of the frequency of occurrence and importance. Technical terms are explained in the accompanying text.

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manuscript that does not clearly state what problem the research seeks to solve. It might be interesting to know, for instance, the percentage of women travelers who are blonde, redhead, and brunette. Such a study isn't worth doing, however, unless we suspect a relationship between hair color and travel habits among women.

Two major criteria define a problem. The first is whether the problem *can* be researched. The study of some issues requires great expense or effort. In each study there must be a way to reach people who can give the answer to the question, people whose opinions are valid for the population as a whole.

The second criterion is that the problem must have an applicable solution. A problem whose solution cannot be implemented is hardly worth studying, and it would be even worse to devise a solution that doesn't actually resolve the problem. Researchers must pay attention to this criterion, or they will produce "so what?" research results.

Definition. The researcher should be able to state the problem clearly. The reader of the research report must be able to understand the problem to which the research pertains. Because of the volume of reading material available and personal time constraints, the reader wants to know right away whether the problem is worth reading about.

It is helpful to state the problem in the form of a research question. To use our earlier example, such a question might take this form: "How can management increase the number of brunette women travelers staying at its hotels (or eating in its restaurants)?" Note that the problem is not whether management is doing enough, but why or how it will do something. By stating the problem in this way, the researcher clearly indicates the purpose of the research.

Objectives

Once the problem is defined, the researcher should establish the objectives of the research, usually in the form of a hypothesis. The statement of objectives tells the reader what the researcher expects to find out from the study and how the reader might expect to profit from spending time with this article.

Objectives should be stated in a specific, action-oriented fashion. Consider the following two goals:

(1) To determine why consumers choose hotels; **(2)** To determine why *these* consumers choose *this* hotel. The first objective provides gross data usable only in a general sense; the second objective can provide management tools for a particular hotel.

Presentation. Once the objectives have been established, the researcher should ask what can be done with the lessons that will be learned from the study. How useful, for instance, would be the finding that 60 percent of women travelers have blonde hair? Not very. What if the study instead found a need for considering separate marketing strategies for women travelers who are blonde and those who are brunette? This sounds promising, but the researcher must present the information in such a way that management can use it to develop the necessary marketing strategies. If the researcher merely sets up a descriptive array of comparisons without showing how the information can be used, the research is of little value to management. The considerable task of sorting out the data and looking for interactions should not be left to the reader. It is the author's responsibility to demonstrate the basis of the study's application.

Theoretical Foundation

Papers are often rejected because they lack a theoretical foundation or they fail to advance the industry's knowledge of a topic. The major hospitality-industry journals rarely print extensive discussions of the theoretical base of a study or give much space to reviews of existing literature. Hospitality editors prefer to get to the "meat" of a study, since their readers are primarily managers who will *apply* the research findings, and not academ-

ics who will seek to build further on the research. (Readers are often given bibliographies, reading lists, or footnotes indicating where to look for theoretical support of a given article.)

But all of this does not mean that hospitality-industry researchers should ignore theory or fail to review prior studies, or that they should not try to demonstrate that they are familiar with the state of the art. When research is published, it is the responsibility of the researcher to show that this study advances the state of the industry's knowledge. Theoretical study and literature reviews prevent the problem of "reinventing the wheel."

A grasp of theory also provides a foundation for understanding why one event should lead to another, or why one can make a certain assumption or draw a particular inference. Without this theoretical underpinning, the researcher may be tempted to draw unwarranted conclusions. In the following example, we demonstrate how this might occur.

Say we were studying the reputation of airlines. Our underlying assumption would be that people are more likely to fly on an airline that they consider more reputable than on one they perceive as less reputable. That is a reasonable assumption; a theoretical base is hardly required. But what if we decide to

study the *appearance of uniforms* as the basis of reputability? We show photos of various airlines' outfits to our respondents, and they rate each airline's reputation on that basis. We find that dark-colored uniforms are positively associated with the airlines' reputability. Can we conclude that people are more likely to fly on airlines whose employees wear dark-colored outfits? Obviously, there is no foundation for such a conclusion.

Construct validity. In this case, the drawing of conclusions with no theoretical basis results in what is known as lack of *construct validity*. As we mentioned above, this is the number-one reason for manuscript rejection. When there is no theoretical foundation to establish what a certain construct is and what its attributes are, it is easy to end up using the wrong measures. In showing people the photos of airline uniforms, for instance, we don't know whether we are really measuring reputability (the construct) or whether we are measuring something else (e.g., color or style preference). Until a question like this is settled through a proper theoretical discussion and a review of previous research, we cannot assume that uniform color has any real connection with an airline's reputation. Unwarranted or unsupported conceptual leaps lead to almost certain manuscript rejection.

Methodology

Even if the fundamentals are sound, a research study can fail on technique. Problems with methodology include poor sample selection, omission of statistical tests of significance, and poor design of the research instrument.

Sample selection. The first step in research design is selection of the sample. Spend all the time and money you want on a study, but if your sample is poorly selected, your results are worthless, and your time and money are wasted. The first step is to define the population you want to measure (this definition usually flows from the objectives of the research). It is critical that the sample represent the population being studied. Next you must determine whether the chosen sample can give you the answer to your questions. That is, do the members of the sample have the necessary knowledge, experience, and information to answer your questions? Finally, if you want to infer relationships from the sample to the general population, your sample must be a *probability sample.*

These three points involving the selection of a sample are the most common failings in research sampling. A fourth major consideration, sample size, is not usually a reason that manuscripts are rejected. In any event, the issue of sample size has been documented so well in research texts that we see no need to discuss it here.

Let's consider another hypothetical research project to show the importance of the three sample-selection issues. Say that we wanted to measure frequent pleasure travelers' perceptions of different hotel chains—a meaty research topic. Let's assume that the sample, whose size is adequate, is drawn from people stopped and questioned in the public areas of three central-city train stations. Right off, we have given up the possibility of generalizing our findings to frequent pleasure travelers as a

whole, because this is not a probability sample. We can only state what these respondents tell us, no more.

Even if the respondents constituted a probability sample, we could not state confidently that this sample represented the population as a whole. We would need some basis for showing that it is representative. People in train stations are presumably travelers of some sort (almost certainly they are commuters), but how many are frequent pleasure travelers? (Indeed, what is the definition of a frequent pleasure traveler?) We would need to determine the sample breakdown of each of the three locations, and then measure how the proportion of respondents from each location biases the findings.

After all that, we still would need to address the issue of whether this group of respondents is qualified to answer our questions. Say that we are showing our respondents a list of hotels and asking how they would rate the comfort of each, and that we were also asking them to rate the price they paid on a scale ranging from inexpensive to expensive.

These seem like reasonable questions, but the potential for errors arising from unqualified responses is incredibly great. We will raise just a few questions about the sample to show this potential. How

many different units had the respondents stayed at in each chain? How many responses are perceptions, not experience, or just guesses? How do the respondents measure comfort? What price did they pay: single rate, double rate, group rate, package rate, weekend rate? What grade of room did they have: deluxe, standard, concierge floor? Which hotel in the chain are respondents rating: the first one they stayed in, the last one they stayed in, the one they stayed in the most?

Anything we might find out from this research is useless, because we have violated the canons of sample selection. The sample is not drawn randomly, it represents no group of consumers (except for those we interviewed), and we have no way of knowing whether these respondents are qualified to rate the comfort of hotels.

Research Instrument

Questionnaires, a critical part of survey-research design, are rarely included in manuscript drafts submitted for editorial review. Their omission means that the reviewer must guess at most of the questions or how they were asked. As a result, poor questionnaire design is rarely a direct reason for rejection of a manuscript. Nevertheless, questionnaire design is far more complex than many people realize. Poorly drawn questions can badly bias the responses. Consider the different responses you would get to the following question about the collision of two cars as you changed the final verb. "How fast were the cars going when they: collided? bumped? hit? smashed? contacted?" Try it. You'll get different answers depending on the way you ask the question.

The greatest consequence of faulty questionnaire design is invalid findings. Without valid findings, research is worthless. (Again,

validity is covered so well in the textbooks that we need not discuss it further.) More research is rejected for lack of validity than any other reason. All researchers must therefore check on the validity of their survey instrument, and always ask themselves if they are actually measuring what they think they are measuring.

To see the effect of a spurious variable, change the question to "How fast were the *Mazeratis* going?" The make of the car is spurious; our perception of the relationship between Mazeratis and speed affects our perception of how fast the cars were going. A further change in the question illustrates the effect of an intervening variable: "How fast were the cars going *on the racetrack?*" Adding the word "racetrack" to the question makes the respondent assume speed; it intervenes in our perception of the cars' actual speed. If questionnaires do not control for both spurious and intervening variables, they will elicit useless data. The reader is again referred to textbooks for more extensive discussion of these subjects.

Ordered and scaled data. Many researchers fail to design their questionnaires to take full advantage of the data-collection possibilities. Many studies collect simple nominal or categorical data, when ordinal (numerically ordered) or interval data (equally scaled) can be collected just as easily and permit much richer analysis. Nominal data provide only descriptive information; often these data produce only ho-hum findings of little interest and less use. Descriptive data usually cannot be generalized to apply to an entire population (although many researchers try to do so). A manuscript based on such research might be rejected even when the entire study was otherwise flawless.

Data Analysis

Whether the cause is a poor survey instrument or inadequate analysis, many researchers fail to capture the full richness of the data available to them. Even if a questionnaire yields merely nominal data, the researcher can analyze the responses through crosstabulation.

Regardless of the type of data, the researcher must conduct and report statistical tests of significance before drawing any conclusions. Too many manuscripts make

claims that boil down to something like this: "Eighty-five males preferred X, but only 42 females chose X. Therefore, males prefer X twice as much as females." But we don't know how many respondents of each gender were in the sample. What if the sample were 100 males and 50 females? You can see that the preference percentages would actually be the same in this case.

Even if the percentages were different, is that difference significant or could it have occurred by chance? A simple "chi-square" test will give the answer. But that particular test is a weak one, is highly subject to sample size, and does not measure relationships. In many studies, researchers should use other tests of significance that account for sample size.[1]

When the data are captured using interval or ordinal measures, the analytical possibilities expand greatly. Unfortunately, many researchers fail to take advantage of the many analytical techniques available. Although persons who do not have a grasp of univariate and multivariate analysis should not be attempting quantitative research, no researcher needs *total* knowledge of the techniques, for any college campus has technical experts to assist with analysis. The point is that researchers must know what tests there are and use them.

The time to decide which analytical tests should be used is at the beginning, *before* the data are collected, so that the material is gathered in a useful form. From there, the job is to extract as much information from the data as possible.

[1] For a complete description of statistical tests, see: Robert C. Lewis, "The Basis of Hotel Selection," *The Cornell Hotel and Restaurant Administration Quarterly*, 25, No. 1 (May 1984), pp. 54-69.

Findings and Conclusions

Even if the researcher has negotiated all the shoals of survey design and data collection and analysis mentioned above, the manuscript could still be rejected for failing to report reasonable conclusions. In some research articles, it seems as though the conclusions were drawn before the data were analyzed. In these cases, the relationship between the analysis of the data and the underlying assumptions is just too tangential. Sometimes the data are nonexistent; all that stands is assumptions and conclusions. The reviewer's reaction to this is simple: "The data don't support the conclusions."

Sometimes the incongruence between data and conclusions is a result of faulty analysis. More frequently, however, the problem is that the researcher, mindful of the initial objectives of the research, is reading something into the material that simply isn't there. And sometimes the researcher is simply taking a leap of faith and jumping to conclusions. These leaps of faith usually leave the reviewers behind, unwilling to jump over a logical "precipice."

Conclusions are certainly the purpose of research, but even legit-imate conclusions are meaningless if they are not supported by the findings.

Final Draft

Even after the manuscript has received favorable reviews, the researcher must clear one more hurdle. Before final acceptance is granted, the publication's editor must be satisfied that the research has been presented in the clearest and leanest possible fashion. Some journals will accept a manuscript that is in moderately good condition and finish the job of polishing it on the editor's desk. Authors who complain about editors' "rewriting" their articles might instead consider this a blessing, because many more rigorous journals simply send the paper back—either rejecting it or asking the *author* to rewrite it. In fact, some papers are submitted in such disorganized fashion that an expert reviewer cannot interpret what the author is trying to say. Imagine how a busy manager would react to such a piece.

Do it right. The work of conducting and reporting a research project is worth doing right the first time. Every researcher knows how hard it is to get funding, and how much time it takes to perform research. What's devastating is that it takes just as much money and time to perform a bad study as it does to complete a good one. A few precautions, as outlined above, can keep a good study from going bad. Reviewers and editors are both aware of the disappointment occasioned by the rejection of a manuscript.

Neither editors nor reviewers enjoy turning down manuscripts. But the review (and rejection) process is essential to maintaining the quality of hospitality research. By designing top-flight research studies and reporting them clearly, we in academe can make a solid contribution to the hospitality industry. □