

Social Science Literature: And Perspectives Problems

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Abstract.

The paper reviews some of the omissions and commissions that are commonly encountered in social scientific literature. It is argued that these errors could seriously jeopardise the validity of the findings. Specially focused are the areas of the title, the theory and the methodology. The review is selective and not exhaustive.

Introduction

A large number of scholarly journals around the world publish tens of thousands of research articles every year on a wide range of social scientific topics. By and large, these articles are considered the nearest thing to "truth" or reality. Yet, the 'truth' is that many of these publications contain errors — theoretical as well as methodological — which raise serious questions about the validity of their findings.

To begin with, social scientific findings are not usually replicated. Quite a few of them do not meet even the test of what Silvey (1975) calls imaginative replicability — the extent to which the procedures used are public knowledge, and can be mentally recapitulated by those with experience to judge.

Secondly, attempts to obtain from authors key details con-

cerning their data often result in failure (Wolins, 1962: 657; Craig and Reese, 1973: 28).

Finally, findings are often generalized beyond what the data would seem to warrant. The numerous conceptual and operational shortcomings of published research have given rise to the question if most findings of social science are mere Type I errors (Walster and Cleary, 1970).

This article examines some of the more pronounced pitfalls of published research. The purpose is not to debunk published research or social science in general, but to sensitize authors and readers to the necessity of a more rigorous and careful approach to research. The article is also expected to contribute to the development of the skills of discrimination and analysis in university students in the various disciplines subsumed by social science.

The following are some of the areas which deserve special attention in a social scientific report, be it a book, a journal article or a conference paper:

- The title
- Conceptualization
- Operationalization
- The Sample
- Significance tests.

A more detailed examination of these items follows.

The Title

The title of an article — or a book — is among its most important aspects, even in the world of social science. The title should be appropriate as well as attractive. It should not be so abstruse or technical as to turn off all but the dedicated few. At the same time, it should not sacrifice accuracy for the sake of simplicity or verbal elegance. This, however, is not an easy balance to achieve, and generally, authors tend to be pulled in one direction or another. For instance, it is not unusual to see a title couched in words which suggest a broader applicability for the findings than the evidence would warrant. The two widely known Kinsey reports, **Sexual Behavior in the Human Male** (Kinsey et al. 1948) and **Sexual Behavior in the Human Female** (Kinsey et al. 1953), could be mentioned in this regard.

The data for these studies were gathered from samples which had certain specific characteristics. Among these were the following:

- (1) Sample elements consisted of Americans only;
- (2) Heavy reliance was placed upon voluntary informants; and
- (3) Generally conservative elements such as Catholics and rural people were underrepresented (Sjoberg and Nett, 1968).

No one can detract from the academic excellence of these pioneering efforts, or deny the significant impact they have had on subsequent research and theory in the field, not to say on social and cultural norms in the American society. Yet, the fact is that the nature of their samples — all-American, voluntary and predominantly liberal— imposes certain limitations on the nature of their conclusions, specially in the area of external validity. Evidently, given the sensitive nature of the study and the social and moral climate of the day, the authors had no choice but to compromise the ideal research design which they did by choosing a sample which was not representative of a carefully defined population such as the American society for example. But the titles of their studies do not reflect these constraints. On the contrary, they give the impression that the findings of the studies hold true not only for the American society as a whole but for the entire human race. Such an overgeneralization is not warranted or supported by the data bases of the two studies.

Another example is an article in the *Journalism Quarterly* (Spring 1967: 86-90). The title of the article reads, "Differential Movie Appeals as Correlates of Attendance". The article examines the interrelationship between movie attendance and movie content. The sample of the study consists of (a) introductory psychology (b) students (c) of the University of Alaska. Given such a restricted sample, the findings of the study are not generalizable beyond a very limited group. But such is not the impression conveyed by the title of the study. A title more representative of the study's data base could have been created by adding the words "Among the University of Alaska Students" to the present title. Such an addition would not have detracted from the simplicity and elegance of the present title. At the same time it would have added significantly to its technical soundness and accuracy. The present

title is clearly far too broad in scope in relation to the design of the study, particularly its sample.

Conceptualization

There is an ongoing debate among social scientists concerning the role of theory in research. Some advocate the primacy of theory; others champion the role of measurement (Kerlinger, 1973; Blalock, 1970). Some argue that without adequate theory research tends to degenerate into abstracted empiricism (Mills, 1959). Others point out that commitment to theories and paradigms tends to blind the researcher and limit his imagination (Smith, 1975). Yet some others (cf. Lazarsfeld, 1959) have proposed a model based on a continuing interplay between theory and measurement in which each guides and refines the other.

A researcher may or may not subscribe to a particular theory or model. But he cannot escape the responsibility to conceptualize his problem clearly and spell out his thoughts in a systematic manner. In other words, clear conceptualization is one of the core activities of scientific research. This usually takes the form of defining concepts and variables, and specifying interrelations among them. The process results in certain general theoretical propositions interlinking a group of higher order concepts (or constructs) on the one hand, and certain more specific hypotheses positing relationships between a set of lower order variables and operational definitions on the other.

Without a clear and cogent conceptual framework—nomological network—it is not easy to select or define a research problem, decide on an appropriate sample, generate quality data and carry out meaningful analysis and interpretation. It is a clearly spelled out theory which makes the difference between previously conceived hypotheses and post facto rationalizations primarily suggested by the data. A reader of social scientific literature needs to be particularly on the look out for clearly spelled out theory. Not good or bad theory in the sense of conformity with his own theoretical predilections, but theory explicated in a way that would satisfy the test of falsifiability on the one hand and logical interrelatedness on the other.

Some of the problems affecting theory in social scientific literature can be described as follows:

Inadequate theory development. This usually happens when the author has paid only insufficient attention to the question of theory relating to his problem—either due to a paucity of theory in the field or due to his own unwillingness to utilize existing theory. At times huge masses of data are generated **in place of theory**. But data should not be allowed to mask lack of theory. For, empirical evidence is not really a substitute for theory, but its natural result. “Good” theory is supposed to lead to the generation of hard data, just as it is supposed to allow itself to be modified in the light of these data.

Unclear definitions of concepts. Concepts are the stuff of which theories are made. Concepts are ideas about aspects of reality taken at high levels of abstraction. They are useful to the extent they aid explanation and indicate areas of data generation. This means concepts are really useful to the extent they are clearly explicated—defined. Where clear conceptual definitions are not provided—a practice not uncommon in social scientific literature—a significant part of the rules of the game has not really been nailed down before the start of the game.

Inadequate specification of linkages. “Good” theory should not only contain clearly defined concepts, it should also specify linkages **between concepts**. Individual concepts, no matter how clearly defined, are by themselves no more than mere building blocks in a theoretical framework. It is linkages between concepts that produce theoretical propositions. It is these propositions that make assertions—at an abstract level—about phenomena, and specify interconcept relationships, both positive (+: Media-Exposure increases knowledge) and negative (–: High Marriage Costs depress Marriage Rates). “Good” theory must specify these relationships as precisely as possible, and discriminating readers of the literature must be sensitive to the presence or absence of such linkage specifications in the material they read.

Operationalization

In a sense, even the most carefully defined concepts are valid only to the extent they have empirical import. Failing this crucial test, concepts tend to degenerate into mere reifications. A reification is an impressive term invented to denote something which is not really very impressive in itself. Reifications are highly abstract constructs usually invoked to tide over gray areas of theory. But the

problem with reifications is that once posited they tend to outlive their usefulness. Another problem with them, a much more serious one, is that they do not have clear empirical referents. Therefore, theories making a liberal and careless use of reifications have only a precarious scientific existence. Hence the need for the empirical validation of concepts, that is, for the matching of concepts against reality.

This involves outlining in detail the procedures which must be used to be able to observe certain indicators of the concepts in reality. These procedures constitute what are called operational definitions, and the process of arriving at them constitutes the core of what is referred to as operationalization. It is operationalization which links theory to the data, and makes measurement possible. It is through operationalization that the researcher is able to reach crucial decisions concerning **what** and **how** to measure. Sometimes, the term 'operationalization' is referred not only to the **process** of rendering higher level concepts (and constructs) into measurable variables and indicators, but to the **product** as well, that is the operational definitions or procedures resulting from such a process. Given the vital role operationalization (process as well as product) plays in research, a study may be said to be no better than the operationalizations used to tap its key concepts. A reader of social scientific literature, thus, must be specially sensitive to the operationalizations used in the work before him.

To mention an example, the Journalism Quarterly article cited earlier makes use of the concepts of Love and Eroticism, but it fails to provide clear conceptual definitions of these concepts. There is an indication that these two concept labels are used interchangeably, which is open to question. Webster's New World Dictionary (1976) defines Eroticism as "preoccupation with sex and sexual excitement", whereas the dominant meaning in the same dictionary for Love is Tender Feeling, Romantic Liking, and so on. This problem-concept of Love-Eroticism is measured by an operational indicator of questionable validity, namely, "A young couple walking romantically through a beautiful park". This could be a valid indicator of Love explicated as Tender Feeling and Romantic Liking, but as an operational measure of Eroticism defined as "Preoccupation with sex and sexual excitement" it is problematic.

The Sample

A sample is a segment of a population which is carefully defined and which is supposed to be representative in certain key parameters. Lack of theory may lead to problems in sample selection. For instance, the sample may not be related to any given population identifiable in terms of a set of specific parameters. Other problems could be with regard to the considerations used in determining the sample size, or the procedures employed in the selection of cases which constitute the sample.

For instance, a study may use, as does the Journalism Quarterly article cited above, a sample consisting of "the introductory psychology students at the University of Alaska". While these individuals have as much right as anyone else to be the subject of a scientific study, the question that needs to be answered is, of which specific population— theoretical or otherwise—are they a part? Are they supposed to be representative of the University of Alaska students, American student community in general, young people as an age cohort, or the human race as a whole? There are problems connected with each one of these possibilities. The practice of using psychological sophomores as research subjects by social scientists, to mention one such problem, has led to the quip that the existing science of human behavior is largely the science of the behavior of sophomores (McNemar, 1946). Some have asked if psychology sophomores are representative of even the sophomores in general (Rosenthal and Rosnow, 1969). There are ethical dimensions involved in using a captive student sample. A researcher, therefore, must define his population carefully and then relate his sample to that population. It is only in the context of such a relationship that hypothesis testing could be considered a meaningful activity.

So also, a number of theoretical and methodological considerations surround the determination of the sample size— considerations which a reader has the right to know. Normally, sample size is a function of such issues as the amount of error the researcher is willing to tolerate, the size of the difference or the strength of the postulated relationship he would consider significant, variability in the data, power, cost, convenience, and so on. With large numbers it is relatively easier to reject the null hypothesis (H_0). So long as the researcher's interest centers around the estimation of popular parameters, the larger the N the better.

From this point of view, how big a sample the researcher wants may depend on how big a difference he really wants (Hays, 1973). After a certain stage, however, the law of diminishing returns comes into effect, and an increase in sample size thereafter does not lead to a monotonous increase in the power of the test.

Further, research involving human subjects is by its very nature problematic, and both the researcher and the reader must be on guard concerning a number of issues. Reactivity is a problem inherent in research situations involving human subjects. Various known as Hawthorne effect, Rosenthal effect, experimenter effect, demand characteristics, etc., the problem centers around the seemingly endless capacity of human beings to influence one another. The laboratory setting, weather conditions, time of the day, personality of the interviewer, questionnaire wording, order, length, ease, complexity may all pose a threat to the validity of the findings (Sudman and Bradburn, 1974). The researcher must provide his readers with as much information as they may need to arrive at meaningful conclusions concerning these issues.

Use And Misuse Of Significance Tests

Considerable difference of opinion exists in informed circles concerning the use of significance tests in studies which lack complete control, that is, in non-experimental studies. It is argued that these tests are not applicable to survey data. Labovitz (1970) is of the view that these tests are not useful in social research as a whole. In Selvin's (1957) view, their use should be limited to experimental data only. Others, however, feel that where a sample has been randomly selected, or in cases where a clear assumption of randomness exists, significance tests may be legitimately and gainfully used. Most social scientists agree that significance tests—parametric as well as non-parametric—yield useful and reliable results only in cases where (a) a population has been clearly defined, and (b) where a random sample has been used. This is because probability is at the core of inferential statistics, and the methods for non-probability samples are either too complicated or non-existent (Kish, 1965). Beshers (1958) argues that significance tests are of little value in surveys (a) which ignore the principles of sampling, and (b) which are not guided by theory.

A careful reader must keep some of these pointers in mind

while evaluating the significance of findings arrived at through the use of significance tests.

Conclusion

In the preceding paragraphs some of the problems commonly encountered in published research were discussed. These problems centered around the areas of the title, the theory, the methods and the use of statistical tests. The list is by no means exhaustive, and several other items could be usefully added to it. However, it must be recognized that given the nature of social science (in fact, of scientific measurement in general), omissions and commissions of the kind noted above can be avoided only to a degree. Scientific activity is an unending process of making decisions and judgments from the stage of problem definition to the stage of rejecting (or failing to reject) the null hypothesis and interpreting the findings. At each one of these stages, the scientist—social or otherwise—is confronted with a series of decision points concerning which he must exercise choice. In making these choices, the scientist inevitably renders himself open to error. While it may not be possible for him to avoid making the decisions which he must, he should let his readers be privy to the factors and considerations which led to those decisions. Such candor would satisfy the criterion of imaginative replicability, and make it possible for readers to make certain decisions of their own concerning the nature of the findings and conclusions before them.

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