This article identifies the methodological characteristics of high-quality case studies, when case studies are used as a research tool. The findings are based on an analysis of 53 case studies of organizational innovation, which identified the characteristics leading to high global ratings of the cases. The findings suggest that investigators doing case study research in the future should delineate five components of their studies: problem definition, research design, data collection, data analysis, and report presentation. Second, an important consideration is whether the research is aimed at contributing to knowledge about practice or about theory, as different characteristics appear related to these outcomes. Finally, among all the characteristics, the definition of the innovation process being studied, in clear operational terms, appears to be related to high-quality case studies, regardless of their purpose.

**Case Studies and Organizational Innovation**

*Strengthening the Connection*

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Case studies remain one of the most common tools for doing public administration and related research (see, for example, Hoaglin et al., 1982). As opposed to their use as a teaching tool (see Windsor and Greanias, 1983), case study research attempts to explore, describe, or explain events as they actually happened. (A teaching case may deviate from actual events in order to provoke student discussion).

Unfortunately, a gap in current knowledge still exists as to how to conduct high-quality case studies for research purposes. Some highly regarded case studies do exist, such as


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Allison's (1971) case on the Cuban missile crisis; Lipset, et al.'s (1956) *Union Democracy*; or Neustadt and Fineberg's (1983) swine flu affair. But there are few guidelines for emulating these examples or for designing and doing methodologically sound cases. Most of the existing texts only emphasize the data collection aspects of doing case studies, and do not cover other equally important phases of the research process.

Information to fill this gap can itself be based on empirical inquiry. We designed a project to identify the methodological characteristics leading to high ratings among published case studies on one frequent topic of inquiry in public administration—organizational innovation. Our inquiry therefore represented a meta-analysis of previous case study research.\(^1\) Our assumption was that any methodological characteristics, identified through such a process, could be used by future investigators to improve their case studies on organizational innovation.

*Analytic Framework and Procedure*

A group of 53 studies was identified through an exhaustive search process, focusing on studies of organizational innovation in seven public services: police, fire services, sanitation, public works, transportation, education, and planning. Of these 53 studies, 22 (41%) contained only one case; 31 (59%) had multiple cases. (In a multiple-case study, the same inquiry may have examined two or more cases in order to develop findings and conclusions.) The acceptable studies were limited to final reports or manuscripts published after 1969. Discarded were interim reports, working papers, conference papers, dissertations and theses, and any publications prior to 1969. Thus, the final collection of case studies was intended to reflect the most recent and best state-of-the-art in case studies of innovation in public organizations. Table 1 lists many of the innovations covered by these case studies.
**TABLE 1**
Illustrative List of Innovations Covered by Case Studies

*Communications*

- Remote sensing information system for Michigan highways
- Installation of a coordinated information network in the New York State Department of Education
- Cable television in Cincinnati
- Dial-access instructional television in Evanston High School

*Management and decision making*

- Educational performance contracting in school districts
- Community involvement in school administration and planning in New Jersey
- Use of monetary incentives and work standards in five cities
- Productivity programs for public services in New York
- Managerial performance appraisal system in New York
- Productivity improvement programs (PIP's) in eight cities
- Creation of district managers for local/district services in New York
- Use of student achievement information in school system management in Atlanta

*Systems analysis and computers*

- Community renewal simulation models in San Francisco
- Fire station location programs in five cities
- Computer simulation of alarm rates and manpower deployment in New York City Fire Department
- Application of systems analysis to urban problem-solving in three cities
- Installation of a metropolitan, computerized data system in San Diego
- Computerized geographic location codes for local data files (GBF/DIME) in seven regions

*Personnel deployment*

- Neighborhood team policing in New York City
- Assignment of patrolmen to high-crime shifts in New York City
- Team policing in seven cities
- Innovative teacher-pupil relationships in public schools
- Vocational educational development programs
- Use of organizational specialists in elementary school districts

*(continued)*
TABLE 1 (Continued)

Other

- Development of new, planned communities in six cities
- Personal rapid transit system in Morgantown, PA
- The Oakland Project—a new city-university working relationship
- State participation in direct, federal grant-in-aid programs in New York
- Catalytic role models for elementary school teachers
- NEDA Title III implementation in California schools
- ESEA Title VI (bilingual education) implementation in six school districts

Based on a review of previous studies of research methodologies (see Bernstein and Freeman, 1975; McTavish et al., 1977; and DiMaggio et al., 1978), as well as suggestions from interviews with 22 senior investigators in the field of organizational innovation, these case studies were examined in the following manner. First, global ratings for each case study were made by a group of experts, covering the degrees to which the case study appeared to contribute to knowledge about practice and knowledge about theory, in addition to the overall quality of the case. The ratings represented the dependent variables for all subsequent analysis and are shown in Table 2.

Second, each case study was coded for numerous methodological characteristics divided among the following five groups: (1) its problem definition; (2) its design; (3) the nature of the evidence used; (4) its analysis and interpretation; and (5) its manner of presentation. The coding of these characteristics, done by analysts blind to the results of the global ratings, represented the independent variables for all subsequent analysis. Because the methodological characteristics of each study clearly predated the global ratings, the framework was considered a causal and not merely a correlational framework.

Of immediate interest was identification of the characteristics that led to the variations in global ratings. By
TABLE 2
Distribution of Global Ratings

<table>
<thead>
<tr>
<th>Modal Rating</th>
<th>Three Global Ratings</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contribution To Practice</td>
<td>Contribution to Theory</td>
<td>Contribution to Quality</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (low)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of studies</td>
<td>53</td>
<td>53</td>
<td>53</td>
</tr>
</tbody>
</table>

definition, such variation alone suggested that the characteristics could be controlled by future investigators and therefore represented potential ways in which case studies could be improved. By comparison, characteristics occurring in most or all of the case studies—or alternatively in few or none of the cases—also were identified, but their lack of variance suggested less promise for future changes.

The remainder of this article therefore focuses on the characteristics that varied with the global ratings.

**Findings**

The potential characteristics were drawn from the five general categories previously mentioned: problem definition, research design, data collection, data analysis, and manner of presentation. Those characteristics related to high global ratings are shown in Figures 1-3, for each different global
Figure 1: Correlates of High Rating for Practice
Figure 2: Correlates of High Rating for Theory

- **Problem Definition**
  - Discusses previous implementation or innovation theory
  - Relates theory to issues to be investigated

- **Design**
  - Describes potential universe of eligible cases
  - Uses operational procedures for case or respondent selection
  - Consists of multiple-case design

- **Nature of Evidence**
  - None

- **Analysis & Interpretation**
  - (Inverse) Presents quantitative tabulations

- **Manner of Presentation**
  - Contains over nine references
  - Has citations in conclusions or recommendations

- **High Ratings for Theory**
Figure 3: Correlates of High Rating for Quality
rating separately. (The characteristics are those that were significantly related at the $p < .05$ level or less, using chi-square tests.)

Of the five groups of characteristics, the figures portray one group—the manner of presentation—in dotted lines, because this group also can be manipulated in undesirable ways. For instance, if a study is well designed and conducted, certain presentation characteristics also may help to increase its overall rating; however, in the absence of such design and conduct, simple manipulation of the manner of presentation will only artificially reflect the true, substantive characteristic of a case study. Thus, the dotted lines are a reminder of this caveat.

Among the other four groups of characteristics, the results do offer concrete advice to investigators—for instance, to use multiple- rather than single-case designs, to use operational procedures to select the cases, and to relate previous theory to the issues to be investigated. However, no single characteristic was related to higher scores on all three global ratings. This lack of overlap suggests a potentially important conclusion: Investigators may first need to identify more clearly the purpose of future case studies. In particular (and not surprisingly), case studies that rate highly on contribution to practice share only one characteristic with those that rate highly on contribution to theory, and different approaches to case study planning, design, and execution appear desirable, depending upon the objective of a case study—such as whether to contribute to practice or to contribute to theory.

The single characteristics also were examined for interaction effects, using log-linear models (Goodman, 1978), to determine whether collinearities would alter the list of relevant characteristics. The results did not substantially change the interpretation of the findings, except for some redundancy among the characteristics of high ratings on contribution to theory. This interactive analysis did, however, reveal another interest-
ing finding. A new, single characteristic—the use of operational definitions for the innovation *process* and its outcomes (as opposed to the outcomes of the innovation itself)—was significantly related to at least one of the characteristics found in each of Figures 1-3 (though it was not significantly related to any of the global ratings directly). In this sense, this single characteristic may be an antecedent condition to high ratings of all three types, following a *two-stage* sequence: (a) for high ratings of any type, investigators should operationally define the innovation *process*, and (b) for each specific type of rating, they then also should adopt the characteristics found in Figures 1-3, depending upon the type of rating most relevant to a study’s objectives.

**Conclusions**

These findings provide concrete guidelines for conducting future case studies. If followed, the outcome could be improved case studies of organizational innovation.⁴

First, case study methodologies should reflect at least five concerns—problem definition, research design, nature of the evidence, analysis and interpretation, and manner of presentation. For each category, different methodological characteristics—as enumerated in Table 2—are relevant.

Second, an investigator or funding agency should clearly establish whether the purpose of a case study is to contribute to knowledge about practice or about theory (or both). Depending upon such a choice, the preferred methodological characteristics ought to be different, reflecting the different correlates among our findings, as shown in Figures 1-3.

Third, an important prior step, regardless of the purpose of a case study, is to define the innovation process being studied in clear, operational terms.

Fourth, by inference, peer reviews of case studies should consider using these guidelines as criteria for judging case study research, whether as part of new proposals to be funded or completed work to be published.
Notes

1. For a description of various approaches to this overall type of meta- and secondary analysis, see Glass et al., 1981, and Rogers, 1981.

2. The characteristics covering all five groups in operational detail were developed from previous meta-analysis of other kinds of social science research—(see for example, Bernstein and Freeman, 1975; McTavish, 1977; White and Krislov, 1977; DiMaggio et al., 1978; Weiss and Bucuvalas, 1980; and Rothman, 1980).

3. These results, as well as further detail about the procedures used in the study, are reported in a full report under the same title and authors as this article (COSMOS Corporation, September 1983), funded under National Science Foundation grant ISL-7920580.

4. See Yin, 1984, for a comprehensive discussion of these points.

References


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