Action Research in Management Accounting: A Review of Field-Based Research Methods*

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1. Introduction

There has been growing interest in field-based research of management accounting. It has been strongly suggested that management accounting researchers put themselves in live business settings and find the unexplored and/or hidden practices so that they can develop practice-coherent theories. Three types of field-based research method are focused in this paper; one-shot case study, longitudinal case study, and action research.

The purpose of this paper is to clarify the unexplored features of action research by comparison with the other methods. For this purpose, it is necessary to compare the features of each method and its data characteristics, that is, what kind of research opportunities and data each method brings. Concerning the data characteristics of each method, three dimensions; objectivity, sensitivity, and credibility of data, are recognized in this paper. Three field-based research methods are compared in terms of these dimensions.

The rest of this paper consists of eight sections. In the next section, the dimensions of objectivity, sensitivity, and credibility of the data are explained. The third and fourth sections discuss the features of one-shot case study and its data characteristics. Early field-based research in management accounting will be reviewed briefly in terms of their contributions to management accounting research and limitations. The fifth and the sixth sections discuss the features and data characteristics of longitudinal case studies. This type of study has been increasing in the field of management accounting research. The theme of seventh and the eighth section is the potentials of action research as an emergent method in the management accounting research. Also, the features and data characteristics of action research are made explicit. These sections show that action research provides researchers with unique research opportunities which they can investigate the management accounting theory developed by academics in real organizational settings, and with more credible data to which researchers become sensitized. The final section provides a brief summary of the three methods and our conclusion.

* We wish to thank participants of the European Accounting Association 25th Annual Congress held in Copenhagen, 2002 for their helpful comments.
2. Three Dimensions of Data Collected; Objectivity, Sensitivity, and Credibility of Data

This paper discusses the three types of field-based research methods in with respect to three dimensions of data characteristics, namely, objectivity, sensitivity, and credibility of data. A research method should be selected in terms of the purpose of research. Hence, of importance is knowing the defining features of each method and what it brings to researchers when a research method is selected.

Objectivity means the researchers' ability to achieve a certain degree of distance from the research materials and to represent them fairly; the ability to listen to the words of respondents and to give them a voice independent of that of the researcher [Strauss and Corbin, 1998]. Thus, in order to maintain objectivity, it is important that they do not have an influence on the research site's conditions, or, if they do, a minimal one.

Sensitivity is defined as the ability to perceive subtle nuances and meanings in data [Strauss and Corbin, 1998]. Researchers' involvement in the organizational process enables them to assimilate the subtle meanings in data, which result in making important findings or building theories.

Credibility of data is a necessary condition for any kind of research. Findings or theories derived from more credible data should be strengthened. Thus, assessment of the data credibility of each method is indispensable for the selection of a certain method.

3. One-shot Case Study in Management Accounting; Early Studies

Early field-based studies in management accounting research are characterized as "one-shot case studies". When conducting one-shot case studies, researchers act as interviewers in the research sites and gather data through interviews of the practices being studied. Typically, they retrospectively collect data at a time on what has happened or is happening in the organization.

Much of the effort in a one-shot case study has been devoted to finding "hidden practices" in certain organizations. These "hidden practices" explored encourage researchers to develop the general model of management accounting system so that it can be applicable to other organizations.

As is widely known, the initial ideas of ABC (activity based costing) were found through interviews of practices, and then, they were developed as a general model by academic efforts. For the purpose of developing the general model, the attention of these studies was primarily paid to the technical aspects of the system. Early field-based studies on ABC, for instance, were performed to define the scope of the system, to identify the important activities and an appropriate number of them, to select cost drivers, and to calculate ABC costs [e.g. Foster and Gupta, 1990; Cooper and Turney, 1990].

TCM (target cost management) was also explored through one-shot case studies [Kato, 1990a, 1990b, 1993]. At the early stage of the research on TCM, much effort was devoted to portray the procedure of target cost management, the calculation mechanism of target cost, linkage with profit planning and strategy, and support tools such as VE (value engineering).

One-shot case study has also been used to identify the factors that affect the implementation process of management accounting systems. Anderson [1995], for instance, investigated the ABC implementation
process at General Motors. Research focus of this case study was on which factors were of critical importance to the implementation. She gathered data through ten retrospective interviews. This investigation was performed seven years after the implementation of ABC at General Motors. Based on the previous literature on implementation of MIS (management information system) and her retrospective interviews, she identified several factors that influenced the ABC implementation including competitive environment, pressure of cost reduction, and environmental uncertainty. Besides, she had only conducted participatory observation of an official meeting just once.

4. Data Characteristics of One-Shot Case Study

Objectivity
In one-shot case studies, researchers gather information and data on a single point in time. When interviewing, researchers ask interviewees for information on past phenomena or conditions. In this sense, any one-shot case studies are inevitably likely to be retrospective. In the retrospective case study, by its definition, researchers do not have an influence on the research site’s conditions. Thus, the practice being investigated which consists of individual performances and words, events, and happenings can be viewed from the objective, external perspective of an outsider. This point of view enables researchers to achieve a certain degree of distance from the research materials. Hence it follows a high level of objectivity can be achieved in this type of study.

Furthermore, in the retrospective one-shot case study, if later researchers want to reproduce a case study conducted before and exactly follow the same procedures, they should arrive at the same findings and conclusions as the previous case study did. This also implies that the one-shot case study attains high objectivity.

Sensitivity
In contrast, sensitivity of the research is low. As researchers do not involve themselves in the organizational process, they cannot understand or realize the subtle nuances and meanings of voice or behavior of the people in the organization. This implies that the organizational process cannot be investigated from the insiders’ point of view.

In the context of management accounting research, while the external change such as introduction of a new management accounting system is observable from an external point of view, the internal change such as how the system affect the cost-consciousness of employees may not be perceived from the outsiders’ perspective. It can be said that one-shot case studies retrospectively specify the factors that affect the organizational change, but do not trace the process of how the organization has changed. In Anderson’s study[1995], it is questionable whether her single observation made major contributions to her understanding, because she could not observe longitudinal change derived from the implementation of ABC in the company.

Credibility of data
As Young[1999, p.82] looked back on his experiences of performing one-shot case studies, for instance,
post-study interviews with managers revealed that what some interviewees had told him was important was based on social desirability. That is, they told him what they thought he wanted to hear. His experience reminds the field researcher that he or she is considered as an outsider and what is truly happening in the organization may always be completely masked. Furthermore, it is almost impossible to make sure that the interviewees tell the researchers what truly occurs in the organization. Even if the interviewees tell the truth, they may only talk about a part of it that may mislead the researchers' understandings.

Another danger is not only that the researchers surrender themselves to their own biases, but also they unconsciously accept interviewees' biases. In other words, the phenomena or events are seen through the eyes of the interviewees chosen, and the researchers may take the story as it was told.

The use of participants as key informants also raises the problems of identifying the "best" informants. It is also difficult to ensure that they correctly understand the researchers' queries and provide answers.

The inability in determining cause and effect relationship from reconstructed events is also said to be a significant limitation of one-shot case study[Leonard-Barton, 1990]. Even though the participants in organizational process do not forget key events in these processes, the participant informant in a retrospective study may not have recognized an event as important when it occurred and thus may not recall it afterward.

5. Longitudinal Case Study in Management Accounting: Recent Studies

To overcome such limitations of one-shot case study, longitudinal, real-time study has been advocated. Longitudinal case study can provide more data and opportunities with researchers to track the cause and effect relationship[Leonard-Barton, 1990]. Usually, the purest form of longitudinal case study is not feasible, like in a true ethnographic, participatory observation methodology. Researchers could visit the research site only once or twice a week at most. Therefore, shortly after events occur, most of the data are obtained through retrospective interviews or archives. However, the longitudinal case study with a series of multiple interviews about recent events offers the obvious benefit of access in real time to current events, and thereby increases the likelihood that the researchers can accurately determine the sequence and nature of events. Moreover, there are many opportunities to collect data through personal observation at meeting and training sessions.

In the management accounting research, some recent studies tend to take a form of longitudinal case study. Some researchers conduct participatory observation for months or, sometimes, even years[Briers and Chua, 2001; Lind, 2001], and some, like ethnographers, participate in an organization as a full-time worker for several months[Nandhakumar and Jones, 2001; Uddin and Hopper, 2001]. The research focus that is common to these longitudinal case studies is on the process of organizational change and accounting system implementation.

Briers and Chua[2001], for instance, conducted a seven-year-long longitudinal case study and investigated the process of accounting change, and ABC implementation, in an Australian manufacturing company. On-going data on how participants had thought and acted were longitudinally gathered in an ethnographic way, through 137 days of informal participant observations, 43 attendances at formal
meetings, 91 interviews, internal documents, and public archives. They revealed that, based on the "actor network" theory, the process of accounting change was also driven by some participants' faith in ABC and their network, while previous studies, if anything, had emphasized the rational dimension of accounting change, for example, need for more precise cost calculation. This study shows that the actor network in an organization as the cause can also explain the accounting change as effect.

6. Data Characteristics of Longitudinal Case Study

Objectivity

While performing the longitudinal case study, researchers gather data several times through active fieldwork such as interviews and participatory observations during the research. This method offers researchers more opportunities to directly observe the process of organizational change and its consequences.

This might, however, influence the organizational process being studied. Researchers might be asked for some comments or advice on the process during interview or observation, even though they try to merely be an observer and interviewer in the process being studied.

Especially in the ethnographical approach, researchers' involvement might make it difficult for other researchers to reproduce the case study. Researchers enter into the field, namely, the organizational setting or practice and observe it in respect of their theoretical interest. What researchers think important and worth taking field note during research is not always important to other researchers. Thus, objectivity of the longitudinal case study is reduced compared with that of one-shot case study. Therefore, it can be said that researchers' objective point of view is not always maintained.

Sensitivity

At the sacrifice of a certain degree of objectivity, however, longitudinal case study enables researchers to see practices from subjective, internal perspective of an insider. Especially when researchers conduct participatory observation in the ethnographic way, this method provides researchers with more opportunities to directly observe not only the change of management accounting system but also the change of organizational culture, values, politics, and way of thinking. Thus, sensitivity in longitudinal case study is slightly increased.

Credibility of data

Data credibility is also enhanced in the longitudinal case study. Researchers can directly gather data through real-time participatory observation and interviews shortly after events occur. This enables researchers to ascertain whether an interviewee tells what truly happens in the organization. The data on phenomena or events are not only seen through lenses of interviewees, but through lenses of researchers.

In longitudinal case study, most of the data were obtained through retrospective reports gathered shortly after events occur and real-time participatory observation. A longitudinal case study increases the likelihood that researchers can accurately trace the sequence of events and determine the nature of them. Primarily, more credible data on cause and effect relationship of organizational phenomena can be
obtained through this method.

7. Action Research in Management Accounting Research

The other type of field-based research — "action research" — has been emerging. With this research method, researchers put themselves in an organizational process and act as clinicians or consultants.

Table 1 shows that one action research [Malmi, 1997] is found in the top journal of management accounting research. Malmi [1997] conducted 10-month-long action research and gathered data through participation as a consultant, follow-up visits, informal interviews, archival review, and discussion with managers.

<table>
<thead>
<tr>
<th>Year of Issue</th>
<th>Journal</th>
<th>Author(s)</th>
<th>No. of sites</th>
<th>Data source(s)</th>
<th>Type of research (Period)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>AOS</td>
<td>Covaleski &amp; Dirschm</td>
<td>1</td>
<td>In-depth interviews with staffs of various functions, archival records</td>
<td>One shot</td>
</tr>
<tr>
<td>1988</td>
<td>AOS</td>
<td>Lukka</td>
<td>1</td>
<td>Semi-structured interviews at different level of management and direct observation</td>
<td>One shot</td>
</tr>
<tr>
<td>1990</td>
<td>AOS</td>
<td>Simons</td>
<td>16</td>
<td>Over 70 interviews, document review, observations</td>
<td>Longitudinal (2 years)</td>
</tr>
<tr>
<td>1993</td>
<td>JMAR</td>
<td>Bruns &amp; McKinnon</td>
<td>12</td>
<td>73 interviews, plant tours</td>
<td>One shot</td>
</tr>
<tr>
<td>1993</td>
<td>JMAR</td>
<td>Gosse</td>
<td>8</td>
<td>Over 40 interviews</td>
<td>One shot</td>
</tr>
<tr>
<td>1994</td>
<td>JMAR</td>
<td>Foster &amp; Gupta</td>
<td>N/A</td>
<td>Over 40 interviews, questionnaire survey</td>
<td>One shot</td>
</tr>
<tr>
<td>1995</td>
<td>JMAR</td>
<td>Anderson</td>
<td>1</td>
<td>Long interviews with 10 employees, archival records, direct observation of one formal meeting</td>
<td>One shot</td>
</tr>
</tbody>
</table>

1 Kemmis and McTaggart [2000] distinguish several types of action research. This paper discusses one of them; what they call industrial action research. This type of action research has been conducted in a business setting with an extended history and typically takes a form of consultancy, with strong advocacies for collaboration between social scientists and members of different levels of an organization. It is said that common are emphasis on social systems in organizations, such as improving organizational effectiveness and employee relations. Its main theme is to learn from trying to bring about change.
<table>
<thead>
<tr>
<th>Year</th>
<th>Journal</th>
<th>Authors</th>
<th>N</th>
<th>Data Description</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>MAR</td>
<td>Cooper</td>
<td>19</td>
<td>Simultaneous interviews with numerous managers in one room in each firm, in-depth interviews with 3-5 managers in each firm</td>
<td>One shot</td>
</tr>
<tr>
<td>1997</td>
<td>MAR</td>
<td>Malmi</td>
<td>1</td>
<td>Participation as a consultant, follow-up visits, informal interviews, archival review, discussion with managers</td>
<td>Action research (10 months)</td>
</tr>
<tr>
<td>1999</td>
<td>AOS</td>
<td>Anderson &amp; Young</td>
<td>2</td>
<td>Survey, 236 interviews (for content analysis)</td>
<td>One shot</td>
</tr>
<tr>
<td>2001</td>
<td>AOS</td>
<td>Briers &amp; Chua</td>
<td>1</td>
<td>91 interviews, attending 43 formal meetings, 137 days of informal participant observations, internal documents, public archives</td>
<td>Longitudinal (6 years)</td>
</tr>
<tr>
<td>2001</td>
<td>AOS</td>
<td>Nandhakumar &amp; Jones</td>
<td>1</td>
<td>Participatory observation as a full-time employee, notes of team meetings and discussions</td>
<td>Longitudinal (6 months)</td>
</tr>
<tr>
<td>2001</td>
<td>AOS</td>
<td>Johanson et al.</td>
<td>3</td>
<td>43 Interviews, documents</td>
<td>One shot</td>
</tr>
<tr>
<td>2001</td>
<td>AOS</td>
<td>Uddin &amp; Hopper</td>
<td>1</td>
<td>Interviews, Participatory observations as a worker, documents, newspapers</td>
<td>Longitudinal (7 months)</td>
</tr>
<tr>
<td>2001</td>
<td>MAR</td>
<td>Lind</td>
<td>1</td>
<td>76 Interviews, observations, attending meetings, discussion with operators, documentations</td>
<td>Longitudinal (30 months)</td>
</tr>
</tbody>
</table>

AOS: Accounting, Organizations and Society  
JMAR: Journal of Management Accounting Research  
MAR: Management Accounting Research

Kato[1997, 1999], for another instance, conducted the action research at an Italian auto parts manufacturing company. He and his colleagues participated in the organization as consultants for over four years and collaborated with the company on launching company-wide TCM implementation project. Kato[1999] found that the implementation of TCM was affected by some factors; organizational history of M&A and divisional autonomy which had stemmed from the M&A history. The others reported that implementation of TCM facilitated the organizational learning[Iwabuchi, 1999] and knowledge creation[Ito, 1999]. These studies indicate the dynamics that an accounting system works in the organizational context and an implementation of new accounting system affects it.

Generally speaking, researchers' profound participation in the organizational program is indispensable in action research. They often are expected to act as clinicians or consultants to a certain degree to solve the problem the organization is suffering from. In this sense, researchers' role in action research is defined as clinicians or consultants. It follows that the researchers are deeply involved in the implementation process.
of management accounting systems.

Once researchers are recognized as clinicians in the organization, there is great possibility that they curry out the action research in an experimental way especially when they desire to test their tentative ideas or hypotheses that may solve the problem. This implies that the action research proceeds in the way that researchers directly influence the organizational process and then observe the consequences, while the longitudinal case study proceeds in the way that researchers wait until what is worth being observed occurs and then observe it. In short, data gathering in action research is intentionally, and artificially planned, but data gathering in longitudinal case study is not.

It is unique to action research that researchers can take an initiative in implementing the management accounting system and directly observe what is happening before the implementation. Therefore, only this type of research brings to researchers the opportunities to compare the organizational conditions before and after the implementation of management accounting system. This comparability contributes to increase the opportunities to study cause and effect relationship. It can be observable how the implementation of management accounting systems affects the organizational change following.

This method also lets researchers have an access to what no one but the person concerned sees, feels, experiences, understands, and realize, since they are deeply committed to the organizational process. Many aspects of organizational context are assimilated into researchers through their commitment to the organizational program. They could directly see conflicts or power politics in the organization. There is even some possibility that researchers get involved in them. This would be a great surprise and opportunity for researchers to find which dimension of the organizational context is of critical significance in which management accounting system actually works.

As a logical consequence, commitment to the organizational program brings researchers more opportunities to study management accounting systems in actual organizational settings.

8. Data characteristics of action research

Objectivity

Action research is a research method in which researchers are committed to solving the organizational problem. Acting like clinicians or consultants, they intentionally or artificially influence the organizational settings. However, if different researchers with different academic knowledge were engaged in the same organizational program, they would influence the organizational process in different ways. The same results or findings would hardly be obtained. In this sense, this results in low objectivity of study.

Sensitivity

Deep involvement in the organizational process, however, brings the high sensitivity to the research. The action research is said to be a form of "insider research"[Kemmis and McTaggart, 2000, p.590]. Researchers see themselves, their understandings, their practices, and the organizational settings in which they practice from the perspective of insiders, who see these things in an intimate, even "natural" way that may be subject to the insider perspective. Because only insiders have an access to insider knowledge, getting involved in the organizational process through action research is the only way to be an insider.
Researchers as insiders become sensitized to the data such as words and behaviors of organizational members in collaboration with them. Researchers' experience and knowledge of the organizational culture, values, and politics are what sensitizes the researchers to significant problems and issues in the data and allows him or her to alternatively explain and to recognize properties and dimensions of emergent concepts from the field work [Strauss and Corbin, 1998, p.58].

Credibility of data

Data credibility could also be enhanced in the action research. Being deliberately planned by researchers, the implementation process of an accounting system is observed from the beginning of project launching. What they observe, namely, data are the processes and consequences of their action. Factors are clarified that facilitate or obstruct the implementation process.

Researchers' role as clinicians or consultants contributes to the credibility of data. Once intimate collaborative relationship is established, researchers gain more opportunities to have an access to the internal archives or documents, or what actually happens in the organization which will always be concealed from outsiders.

9. Summary and Conclusion

This paper has focused on the three types of field-based research method and discussed the data characteristics of each method. Table 2 shows the summary of data characteristics. Action research provides the highest sensitivity among three methods due to researchers' deep involvement in the organizational process. The credibility of data could be enhanced in the action research depending upon the collaborative relationship between researchers and organizational members. The objectivity of the action research is the lowest because of researchers' involvement in the organizational process and the inability to achieve a certain degree of distance from the research material.

<table>
<thead>
<tr>
<th></th>
<th>One-shot case study</th>
<th>Longitudinal case study</th>
<th>Action research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectivity</strong></td>
<td>High</td>
<td>Moderate to high</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>Low</td>
<td>Moderate to high</td>
<td>High</td>
</tr>
<tr>
<td><strong>Credibility of data</strong></td>
<td>Low</td>
<td>Moderate</td>
<td>Low to high</td>
</tr>
</tbody>
</table>

The difference of data characteristics of each method mainly stems from the researchers' role in the organizations. A researcher's role is quite different in action research compared with that in the other methods. Researchers conducting action research are characterized as clinicians or consultants in organizations, while those who perform one-shot case study or longitudinal case study are recognized as interviewers or observers. This researchers' role as a clinician brings the opportunities to experiment the tentative ideas that may solve the organizational problem in the form of consultation. Thus, researchers are
deeply involved in the organizational issue in process. This also provides the opportunities for real-time observation of the implementation process. Table 3 summarizes the features of each method.

<table>
<thead>
<tr>
<th></th>
<th>One-shot case study</th>
<th>Longitudinal case study</th>
<th>Action research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researchers' role</td>
<td>Interviewer</td>
<td>Interviewer and</td>
<td>Clinician</td>
</tr>
<tr>
<td></td>
<td></td>
<td>participatory observer</td>
<td></td>
</tr>
<tr>
<td>Real-time</td>
<td>Extremely low to low</td>
<td>Moderate to high</td>
<td>High</td>
</tr>
<tr>
<td>Observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Researchers'</td>
<td>Extremely low to low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>involvement in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>implementation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity of</td>
<td>Extremely low to low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>experiment (do</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>the change)</td>
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</tr>
</tbody>
</table>

Action research has not been a major research method in management accounting research. This is probably because the objectivity cannot be attained; researchers have difficulty in entering the research site as a clinician; they have to make much more efforts to implement a management accounting system than just to observe it.

In either one-shot case studies or longitudinal case studies, researchers do not engage themselves in the implementation of management accounting system. However, studies of this kind do not inform researchers well on the organizational settings in which the management accounting systems actually work.

In the action research, researchers put themselves in the organizational process as clinicians or consultants. There is great possibility that it provides researchers with a wealth of opportunities to directly observe the organizational phenomena. What is more, this method enables them to carry out some experiments on the real organization with their ideas or hypotheses. It is indispensable that researchers can affect the management accounting systems used in the organization and observe the consequences as a result of their action.

Thus, action research seems to be a prospective research method especially when researchers desire to clarify the dynamic aspect of implementation of management accounting systems; how organizational settings affect the implementation process and how implementation affects the organizational settings. It enables researchers to position themselves in the organizational phenomena and directly observe them.

This paper emphasizes on the potentials of action research. However, the actual benefits of action research are still unclear. To emphasize the benefit of action research, it is necessary to indicate the unique research findings derived from action research. Not to mention that we ourselves have to prove action research to be beneficial by using this research method and making unique findings which cannot be obtained through other methods.
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