Tackling the ISO 14000 Maze: Which Firms Adopt and Which Do Not?

Steven A. Melnyk, Michigan State University
Robert Sroufe, Michigan State University
Frank L. Montabon, Michigan State University
Roger Calantone, Michigan State University

Available at: https://works.bepress.com/frank_montabon/8/
ISO 14000 constitutes a major dilemma for most American firms in that they are not sure whether or not to actively pursue this new form of certification. This new standard is attractive as it holds the promise of helping firms become more efficient via better management of waste, yet this new standard deals with environmental performance, a potentially dangerous legal area. Both benefits and cost liabilities are very difficult to quantify and forecast. This leads to great uncertainty as to whether the benefits offered by improving environmental performance are sufficient to outweigh the costs incurred in obtaining certification. This study examines this quandary in detail and attempts to frame the path taken by firms that have made a decision. By drawing on two methodologies (Logit analysis of a large-scale mail survey of American managers and detailed field studies), this study finds that the factors influencing those firms that actively pursue ISO 14000 certification are distinctly different from those that have decided not to pursue certification at this time. For the latter, the decision is economically based; for the former, it is driven by other, more qualitative considerations. The study revealed that many of the factors expected to influence this certification did not, and observed influences differ greatly from those predicted.

ISO 14000 CERTIFICATION: TOWARDS AN ADOPTION/REJECTION MODEL

ISO 14000 certification can be regarded as a voluntary process of communicating, in a structured manner, information about a firm's environmental management system to external parties. It can also be regarded as time-consuming and costly process in which the benefits, while potentially significantly, can be best described at this early stage in the ISO 14000 acceptance process as being potential. This status leads to a simple but critical question — why would a firm and its management seek at actively pursuing such certification? This question can be addressed by assuming that a firm will pursue such certification under certain critical conditions, specifically, when:

- The firm feels compelled to do so by economic and market considerations;
- The firm has access to adequate resources needed for such an undertaking;
- The firm has capabilities and skills to attain such certification efficiently; and,
- The firm has an adequate understanding of the ISO 14000 certification standard and its strategic impacts on the firm (both internally and externally).

Using these ideas, potential significant factors have been identified and drawn tighter in a framework focusing on the ISO 14000 certification decision (Table 1). These factors have been drawn from a comprehensive review of the ISO 14000 literature and conferences and through extensive discussions with experts in the ISO 14000 certification process.

RESEARCH METHODOLOGY

The research questions posed are evaluated using a two-step process. In the first step, data from a large-scale mail survey dealing with the position of American managers towards ISO 14000 certification was analyzed using the logit methodology. The reason for the survey was to allow the research team to quantitatively assess the attitudes of the respondents towards environmentally responsible manufacturing, their environmental management system, and ISO 14000. The survey was also used to identify factors that influence these attitudes and the perceived effectiveness and efficiency of the plant environmental management systems. The survey was appropriate in that its objective was to collect data. In the second step, a field study of eight American manufacturing firms at different stages of the ISO 14000 certification process was carried out. The field study was done for two major reasons. The first was to understand in greater detail the factors influencing a firm's position on ISO 14000. The second was to address some of the unusual and unexpected findings uncovered by the logit analysis.

EMPIRICAL DATA ANALYSIS – LOGIT

For the purposes of this study, the primary unit of analysis was the company. Though the certification can be carried out at the any level (plant, division, corporation, etc.), this was deemed to be the most appropriate level of analysis. As previously indicated, the primary dependent variable of interest to this study was dichotomous in nature. Of the 1453 useful responses that were received, 1,267 respondents (87.2%) indicated that their plants were not actively pursuing ISO 14000 certification during the survey time period. Furthermore, only 77 respondents (5.30%) indicated that ISO 14000 certification was being actively pursued at their plants and the remainder (109 respondents or 7.50%) chose not to respond.
INSIGHTS FROM FIELD STUDIES

The analysis of the mail surveys has revealed a number of interesting and unexpected findings. To explain these results and to better understand the events, motivations, and values behind the ISO 14000 certification decision, the study next turned to a series of qualitative case studies. These studies, when added to the quantitative analysis, serve the dual purposes of data triangulation (through the addition of a different data source) and method triangulation (through relying on both quantitative and qualitative methods).

DISCUSSION OF THE RESULTS AND FINDINGS

When the findings generated from both the logit analysis of the mail surveys and the field studies are combined, the result is an interesting picture of the ISO 14000 implementation process emerges. Within this process, there are two separate groups of plants – those who choose not to actively pursue ISO 14000 certification and those that do actively pursue ISO 14000 certification. These two groups are very different and their positions (and decisions) on ISO 14000 driven by very different considerations.

The first group, those plants not actively pursuing ISO 14000 certification, is driven primarily by economic considerations – by the relative weighing of the costs and benefits associated with being ISO 14000 certified. This assessment strongly indicates that there is no real strong, compelling, quantitatively-based economic reason for actively pursuing ISO 14000 certification. These plants see few, if any, economic reasons for being ISO 14000 certified. Selling primarily (in many cases) to end customers, these plants apparently do not see any real demand from their customers for this form of certification. Furthermore, the management in these firms sees the purported benefits as being potential and not all that certain. On the other hand, if these firms have had prior experience with attaining ISO 9000 certification, then they are very aware of the time, resource and cost implications of getting third-party certification. They know that this is not a minor undertaking.

Within this first category of plants, there are those firms that have well-established environmental management systems. The management of these plants see little additional benefits to be gained from pursuing ISO 14000 certification. The feeling is that their plant's current EMS are more than adequate to meet their (the plant's) current and future needs.

As a result, plants falling into this first category have taken a “wait and see” attitude. Since the assessment of the relative benefits/costs do not favor ISO 14000 certification, then there is little need for the management in these firms to learn more about ISO 14000, its requirements and its implications.

On the other hand, there are those plants that have decided to actively pursue ISO 14000 certification. This group, unlike the preceding group, exhibits a great deal more diversity. There are at least three different reasons for pursuing ISO 14000 certification. As shown in the field studies, the first reason is because it is seen as being the “right” thing to do. These plants are doing so because of their past experiences with environmental management or because of a corporate culture that emphasizes stewardship and environmental responsibility. These plants are willing to make the investment necessary to attain ISO 14000 certification, without necessarily expecting an economic return on their investments.

The second reason for pursuing ISO 14000 certification is that the plant management see this as a way of either implementing a formal EMS or of improving the performance of their current systems. In this latter case, the systems tend to be relatively new. This could explain the reason that the logit analysis generated a situation where PLANTEMS increased the likelihood of pursuing ISO 14000 certification, while the age of the current EMS (particularly if the current system was well established) reduced the likelihood of pursuing certification.

The third reason is pressure from industrial customers. In both the logit analysis and the field studies, this emerged as a driving force for firms to make a commitment to obtaining ISO 14000 certification. Because management see their customers pursuing ISO 14000 certification, they expect that eventually they (the plants) will be required to have similar systems in place and to attain the same type of certification. As noted earlier, previous authors expected that end consumers would demand that firms become ISO 14000 certified. Instead, our results show that it is industrial customer, not end consumers, who are currently driving this trend. Examples of this behavior were encountered when suppliers to Ford began to actively pursue ISO 14000 certification because they saw Ford formally committing itself to have all of its North American manufacturing plants ISO 14000 certified.

Plants falling into the second category tend to make the decision to pursue ISO 14000 certification first and then to learn more about the standards, its requirements and its implications. It is in the process of learning more about ISO 14000 that the management becomes aware of the uncertainty surrounding such a new certification. The result is that the chain of causality runs counter to the one proposed and tested in this study. This initial chain argued that management would first want to learn about ISO 14000 certification, its requirements, and its potential implications before making the decision to pursue ISO 14000 certification. This chain is consistent with informed decision-making. Instead, the findings indicate that the direction of causality should be reversed. It runs from the decision to actively pursue ISO 14000 certification to uncertainty. This explains the negative coefficient assigned by the logit model to operational uncertainty (UNCOPR). This explanation is also consistent with the view that most
non-implementers are relatively ignorant of ISO 14000— a view initially noted by Litsikas (1999) and Hogarth (1999) and reinforced by the evidence generated from the field studies.

ISO 14000 certification is currently in its early stages of adoption. As a result, the data may be interpreted as describing the behavior of innovators, early adopters, and early majority. What this would argue for is the need to repeat this study at a later period in time so that the responses of the early and late majority users are identified and captured.

CONCLUDING COMMENTS

The new ISO 14000 certification standard represents a real management quandary to most American firms. While it promises improved environmental performance combined with the credibility offered by third-party certification, the benefits offered by ISO 14000 are still perceived as more potential than real. While eagerly accepted by firms in Japan, Thailand, South Korea, China, Germany, and the Netherlands, ISO 14000 certification has received limited acceptance in the United States. What this study has tried to do is to address two questions: (1) Why are certain firms actively pursuing ISO 14000 certification? (2) Why other firms not interested in ISO 14000 certification?

By drawing on two complementary methodologies, this study has reinforced the view that there is very limited acceptance of the ISO 14000 certification. For those firms that have decided to pursue attaining this new certification, this decision is based on either non-economic reasons or on the expectation that such certification will eventually become a requirement of doing business with the plant’s industrial customers. It is only after the decision to pursue ISO 14000 certification is taken that the management of these firms learns more about this new standard and its effects. In contrast, those firms that have decided not to become ISO 14000 certified, the decision is based on economic grounds—a comparison of the costs (which they know, especially if they have been ISO 9000 certification) and the benefits which are uncertain. Most of these firms have taken a strong “wait and see” attitude.

ISO 14000 certification is currently at very early stage of acceptance. It is possible that as plants both within and without the United States gain more experience with this standard, these attitudes and positions towards ISO 14000 certification may change. As a result, the results presented in this study should be viewed as representing one point in time. What is needed is further study into this topic—research aimed at determining whether the attitudes, positions and actions taken on ISO 14000 have changed.

References available upon request from Steve Melnyk.