

Empirical Studies on Environmental Management of Hotels and Resorts in Japan: The differences between hotels that have and have not acquired ISO14001 certification

Jiro Usugami, Ph.D. Associate Professor

Tokyo Metropolitan University, 1-2-2 Harumi, Chuo-ku, Tokyo 104-0053, Japan
Telephone: 03-3533-5631, Fax: 03-3533-6980, E-mail: usugami@ms.t-tandai.jp

Abstract

ISO14001 certification is one of the major international standards for environmental management systems. This study examines how acquisition of ISO14001 certification influences the hotel and resort sector. Based on a questionnaire survey, we analyze the differences in environmental management issues between hotels and resorts that have and have not acquired ISO14001 certification, and observe the environmental and economical impacts that its acquisition has on hotel and resort management. We specifically investigate: 1) the degree to which hotels and resorts recognize the importance of environmental activities as a management issue; 2) how they regard the balance between environmental protection and improvement of high-quality services to guests; 3) what environmental management issues will be given priority over the next several years; 4) the intensity of disclosure and PR on environmental activities; 5) how they evaluate the impact that acquisition of ISO14001 certification has on the promotion of environmental consciousness of employees, increase in the number of guests, reduction of energy and other resource consumption, improvement of brand image, and total cost-benefit performance; and 6) factors that encourage acquisition of ISO14001 certification.

We conducted a questionnaire survey on 144 hotels and resorts in Japan during June-July 2005. The major findings are as follows:

First, the hotels and resorts that have acquired ISO14001 certification (ISO-acquired) have a sharper recognition of the importance of environmental activities as a management issue than do ones that have not acquired ISO14001 certification (ISO non-acquired).

Secondly, environmental management issues to be given priority by both ISO-acquired and non-acquired hotels and resorts over the next several years are: understanding and cooperation of guests in environmental activities of hotels and resorts, and conservation/efficient use of energy and other resources.

Thirdly, ISO-acquired hotels and resorts find that acquisition of ISO14001 certification has the greatest impact on reduction of energy and other resource consumption.

Fourthly, ISO-acquired hotels and resorts evaluate total benefits as being equal to total costs for acquisition of ISO14001 certification.

And finally, one of the factors that encourage acquisition of ISO14001 certification is the tax incentives.

1. Introduction

ISO14001 certification is an internationally recognized standard for environmental management systems. As of April 2005, the number of Japanese sites that have acquired ISO14001 certification, which has reached a total of 18,104, ranks first in the world.

However, the acquisition rate in Japan for hotels and resorts is much lower than that of manufacturing companies. In spite of this fact, environmental management is obviously a very important issue for hotels and resorts because their business strongly requires maintaining a high quality of services to guests as well as conservation/efficient use of energy and other resources, waste reduction, etc.

This study examines how acquisition of ISO14001 certification influences hotel and resort management both environmentally and economically. Specifically, we conducted a

questionnaire survey on hotels and resorts in Japan to investigate the following: 1) the importance of environmental activities as a management issue; 2) balancing between environmental protection and improvement of high-quality services to guests; 3) environmental management issues to be given priority over the next several years; 4) disclosure and PR on environmental activities; 5) environmental and economical impacts of ISO14001 certification acquisition; and 6) factors that encourage acquisition of ISO14001 certification.

This study has two features. The first one is analyzing the differences in environmental management issues between hotels and resorts that have acquired ISO14001 certification (ISO-acquired) and ones that have not acquired ISO14001 certification (ISO non-acquired). The second feature is examining what impacts the acquisition of ISO14001 certification has on hotel and resort management in both environmental and economical aspects: environmental consciousness of employees, number of guests, energy and other resource consumption, brand image, and ultimately, total cost-benefit performance.

The study comprises a literature review, theoretical framework, hypotheses, survey procedure, survey results, and conclusions.

2. Literature review

Many studies have been conducted on the effectiveness of acquiring ISO14001 certification for Japanese manufacturing industries. For example, Nakamura et al. (2001) examined the determinants for Japanese manufacturers to acquire ISO14001 certification and reported that, “while the costs and benefits of voluntary actions to enhance or protect the environment and the capacity to act are significant determinants of voluntary environmental commitment, so are the environmental values, beliefs, and attitudes of managers.”

Usugami (2003, 2004) conducted surveys on the impact of ISO14001 certification acquisition on environmental management of Japanese-affiliated manufacturing companies in China, Canada, and the United States. The results demonstrated that Japanese-affiliated manufacturing companies who have acquired ISO14001 certification have a sharper recognition of the importance of environmental management than those who have not acquired certification. In addition, the results showed that, regardless of having or not having acquired ISO14001 certification, the major environmental management issues of Japanese-affiliated manufacturing companies were “Conservation/efficient use of energy and resources,” “Promotion of environmental consciousness/education of employees,” and “Industrial waste reduction and zero emission,” in China, Canada, and the United States. On the other hand, the results revealed that Japanese-affiliated manufacturing companies who have acquired ISO14001 certification more intensely control “opportunistic behaviors” of local suppliers and contractors than those who have not acquired certification.¹

As for the effectiveness of acquisition of ISO14001 certification in the hotel and resort sector, only a few case studies have been conducted. *Ecology Symphony Magazine* (2000) featured an article on a hotel having acquired ISO14001 certification and reported that acquisition had a specific impact on the reduction of energy and resources, promotion of environmental consciousness of employees, etc. Furthermore, the article pointed out the difficulties of maintaining high-quality services to guests while promoting environmental protection, and the necessity of having guests understand environmental management.

3. Theoretical framework

Figures 1 and 2 show the conceptual models used in our analyses.

The first model (Fig. 1) indicates that environmental management of hotels and resorts is influenced by whether or not ISO14001 certification has been acquired, particularly in the following four aspects:

- Awareness of the importance of environmental activities as a management issue

- Recognition of balancing environmental protection with improvement of high-quality services to guests
- Environmental management issues to be given priority over the next several years
- Disclosure and PR on environmental activities.

The second model (Fig. 2) indicates that acquisition of ISO14001 certification has an impact on hotel and resort management, particularly in the following four aspects:

- Promotion of environmental consciousness of employees
- Increase in the number of guests
- Reduction of energy and other resource consumption
- Improvement of brand image,

and ultimately, on total cost-benefit performance.

Figure 1 ISO14001 - Environmental Management

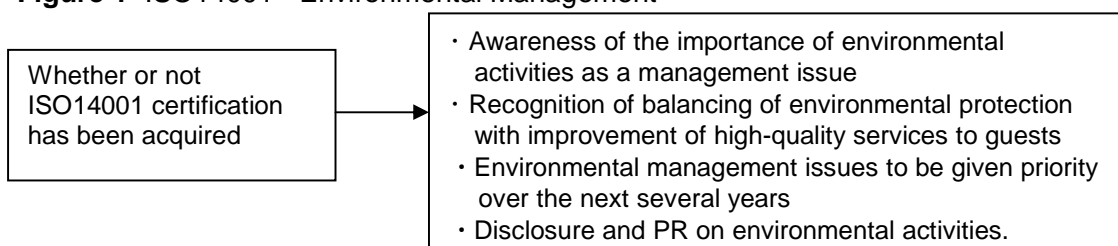
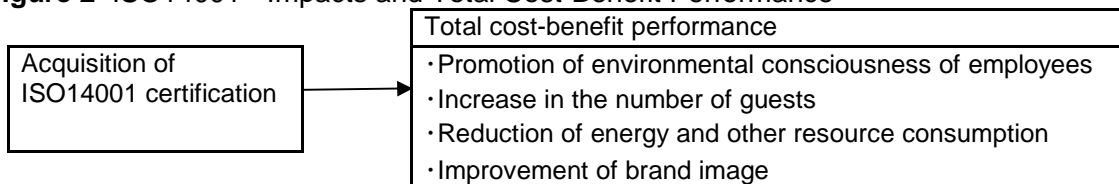


Figure 2 ISO14001 - Impacts and Total Cost-Benefit Performance



4. Hypotheses

- H1: ISO-acquired hotels and resorts have a sharper recognition of the importance of environmental activities as a management issue than do ISO non-acquired hotels and resorts.
- H2: ISO non-acquired hotels and resorts more firmly believe that it is impossible or very difficult to balance the promotion of environmental protection with improvement of high-quality services to guests than do ISO-acquired hotels and resorts.
- H3: There are no differences in the environmental management issues to be given priority over the next several years between ISO-acquired and non-acquired hotels and resorts: promotion of environmental consciousness of employees, conservation/ efficient use of energy and other resources, and waste reduction and promotion of recycling systems.
- H4: ISO-acquired hotels and resorts have more intense disclosure and PR on environmental activities.
- H5: ISO-acquired hotels and resorts find that acquisition of ISO14001 certification has a greater impact on the reduction of energy and other resource consumption than on the three other management activities: promotion of environmental consciousness of employees, increase in the number of guests, and improvement of brand image.
- H6: ISO-acquired hotels and resorts find that acquisition of ISO14001 certification generates total benefits that exceed total costs.

H7: The factor that most strongly encourages hotels and resorts to acquire ISO14001 certification is the tax incentives.

5. Survey procedure

We conducted a questionnaire survey on hotels and resorts in Japan during June-July 2005, regarding acquisition of ISO14001 certification and environmental management. Questionnaire sheets were sent from Tokyo to the environmental section directors of 144 hotels and resorts, to be returned to Tokyo after completion. Questionnaire samples were selected from the Green Purchasing Network that lists environmentally friendly hotels and resorts in Japan.

6. Survey results

The total number of responses was 41 (response rate: 28.5%). Seventeen hotels and resorts have acquired ISO14001 certification, and 24 have not.

6.1 Acquisition rate of ISO14001 certification

First of all, the acquisition rate of ISO14001 certification of the questionnaire samples was 41.5% (Table 1). This rate is much higher than the average since we selected hotels and resorts that are supposed to be comparatively advanced in environmental management.

Table 1 Acquisition rate of ISO14001 certification %

	Total	ISO14001-Acquired	ISO14001 Non-acquired
Number of responses	N = 41	N = 17	N = 24
Rate	100	41.5	58.5
Number of guest rooms (Average)	202	263	159

6.2 Importance of environmental activities as a management issue

We considered the degree to which hotels and resorts recognize the importance of environmental activities as a management issue. For the answers, we presented four choices: 1) Management issue of prime importance; 2) Management issue of comparatively high importance; 3) Management issue of comparatively low importance; and 4) Management issue of low importance.

We observed a significant difference between ISO-acquired and non-acquired hotels and resorts. The rate of ISO-acquired ones that regard environmental activities as a management issue of prime importance is substantially higher than that of ISO non-acquired ones (Table 2). As hypothesized, ISO-acquired hotels and resorts have a sharper recognition of the importance of environmental activities as a management issue than do ISO non-acquired ones.

Table 2 Importance of environmental activities as a management issue %

	Total	ISO14001-Acquired	ISO14001 Non-acquired
Number of responses	N = 41	N = 17	N = 24
Prime importance	43.9 (N = 18)	70.6 (N = 12)	25.0** (N = 6)
Comparatively high importance	48.8 (N = 20)	29.4 (N = 5)	62.5* (N = 15)
Comparatively low importance	7.3 (N = 3)	0.0	12.5 (N = 3)
Low importance	0.0	0.0	0.0
Total	100	100	100

*<0.05 **<0.01

6.3 Recognition of balancing between environmental protection with improved high-quality services to guests

We subsequently investigated how hotels and resorts regard balancing the promotion of environmental protection with improvement of high-quality services to guests. They expressed their awareness from among three choices: 1) It is impossible; 2) It is possible but very difficult; and 3) It is possible.

Table 3 reports the results. ISO non-acquired hotels and resorts do not necessarily regard it as impossible. However, the rate of ISO non-acquired ones that believe it to be very difficult is higher than that of ISO-acquired ones. On the other hand, none of the ISO-acquired hotels and resorts recognizes it as unconditionally possible to balance the promotion of environmental protection with improvement of high-quality services to guests.

Table 3 Balancing of environmental protection with improved high-quality services %

	Total	ISO14001-Acquired	ISO14001 Non-acquired
Number of responses	N = 41	N = 17	N = 24
Impossible	7.3 (N = 3)	11.8 (N = 2)	4.2 (N = 1)
Possible but very difficult	51.2 (N = 21)	41.2 (N = 7)	58.3 (N = 14)
Possible	41.5 (N = 17)	47.0 (N = 8)	37.5 (N = 9)
Total	100	100	100

*<0.05 **<0.01

6.4 Environmental management issues to be given priority over the next several years

What environmental management issues will hotels and resorts give priority to over the next several years? Questionnaire sample hotels and resorts selected the top three issues from among ten choices: Acquisition of ISO14001 certification; Promotion of environmental consciousness of employees; Understanding and cooperation of guests in environmental activities of hotels and resorts; Conservation/efficient use of energy and other resources; Promotion of green purchasing/procurement; Waste reduction and promotion of recycling systems; Reducing use/emission of hazardous chemical substances; Improvement of disclosure and PR on environmental activities at each site; Cooperation / information sharing with business partners in environmental activities; and Others (free answer).

The results that we obtained differed slightly from the hypothesis (Table 4). The first environmental management issue of ISO-acquired hotels and resorts is "Understanding and cooperation of guests in environmental activities of hotels and resorts." This was also selected by ISO non-acquired hotels and resorts as one of the top three issues. The first issue of ISO non-acquired hotels and resorts is "Promotion of environmental consciousness of employees." "Conservation / efficient use of energy and other resources" is the second environmental management issue for both ISO-acquired and non-acquired hotels and resorts, and "Waste reduction and promotion of recycling systems" is also the second issue for ISO-acquired ones.

We found that understanding and cooperation of guests is quite a high hurdle for hotels and resorts in conducting environmental activities. Particularly, the rate of ISO-acquired hotels and resorts that regard "Understanding and cooperation of guests in environmental activities" as the primary issue is higher than that of ISO non-acquired hotels and resorts. We assume that the reason stems from difficulties experienced in this area during efforts to acquire ISO14001 certification. On the other hand, the rate of ISO-acquired hotels and resorts that selected "Promotion of environmental consciousness of employees" is much lower than that of ISO non-acquired ones. This is probably why environmental consciousness of employees has been promoted in the process of acquisition of ISO14001 certification.

Table 4 Environmental management issues to be given priority over the next several years %

	Total	ISO14001-Acquired	ISO14001 Non-acquired
Number of responses	N = 41	N = 17	N = 24
Acquisition of ISO14001 certification	0.0 (N = 0)	0.0 (N = 0)	0.0 (N = 0)
Promotion of environmental consciousness of employees	68.3 (N = 28)	47.1 (N = 8)	83.3* (N = 20)
Understanding and cooperation of guests in environmental activities of hotels and resorts	61.0 (N = 25)	70.6 (N = 12)	54.2 (N = 13)
Conservation/efficient use of energy and resources	58.5 (N = 24)	52.9 (N = 9)	62.5 (N = 15)
Promotion of green purchasing/procurement	17.1 (N = 7)	17.6 (N = 3)	16.7 (N = 4)
Waste reduction and promotion of recycling systems	48.8 (N = 20)	52.9 (N = 9)	45.8 (N = 11)
Reducing use/emissions of hazardous chemical substances	7.3 (N = 3)	0.0 (N = 0)	12.5 (N = 3)
Disclosure and PR of environmental activities	14.6 (N = 6)	17.6 (N = 3)	12.5 (N = 3)
Cooperation/information sharing with business partners in environmental activities	19.5 (N = 8)	29.4 (N = 5)	12.5 (N = 3)
Others (free answer)	2.4 (N = 1)	5.9 (N = 1)	0.0 (N = 0)

*<0.05 **<0.01

6.5 Disclosure and PR on environmental activities

We analyzed the hotels and resorts regarding intensity of disclosure (homepages, brochures, etc.) and PR on their environmental activities at individual sites. Questionnaire samples evaluated their activities from among three choices: 1) We have more intense disclosure and PR than other hotels and resorts; 2) We have as intense disclosure and PR as other hotels and resorts; and 3) We do not have as intense disclosure and PR as other hotels and resorts.

As Table 5 shows, there is no significant difference between ISO-acquired and non-acquired hotels and resorts. Both fully recognize that they have as or more intense disclosure and PR on their environmental activities as other hotels and resorts.

Table 5 Disclosure and PR on environmental activities %

	Total	ISO14001-Acquired	ISO14001 Non-Acquired
Number of responses	N = 41	N = 17	N = 24
More intense disclosure and PR than other hotels and resorts	43.9 (N = 18)	47.1 (N = 8)	41.7 (N = 10)
As intense disclosure and PR as other hotels and resorts	41.5 (N = 17)	41.1 (N = 7)	41.7 (N = 10)
Not as intense disclosure and PR as other hotels and resorts	14.6 (N = 6)	11.8 (N = 2)	16.6 (N = 4)
Total	100	100	100

*<0.05 *<0.01

6.6 Impact of ISO14001 certification acquisition on hotel and resort management

We asked only ISO-acquired hotels and resorts whether or not they found that acquisition of ISO14001 certification was effective in the following management activities: Promotion of environmental consciousness of employees; Increase in the number of guests; Reduction of energy and other resource consumption; and Improvement of brand image. This question considered what impacts the acquisition of ISO14001 certification has on the hotel and resort sector both environmentally and economically. For the answers, we presented four choices: 1)

Extremely effective; 2) Somewhat effective; 3) Not effective; and 4) Others (free answer).

For analyses, we scored “extremely effective” as two points, “somewhat effective” as one point, and “not effective” as zero point, and compared the average scores for each activity above.

Table 6 reports the results. The average score for promotion of environmental consciousness of employees is 1.65, increase in the number of guests is 0.64, reduction of energy and other resource consumption is 1.70, and improvement of brand image is 1.35.

As hypothesized, ISO-acquired hotels and resorts find that acquisition of ISO14001 certification has the greatest impact on reduction of energy and other resource consumption. Furthermore, it also has a certain impact on the promotion of environmental consciousness of employees and improvement of brand image.

Table 6 Impacts of ISO14001 certification acquisition (N=17) %

Score	Average	+2	+1	±0	Others
Promotion of environmental consciousness of employees	1.65	70.6 (N = 12)	23.5 (N = 4)	0.0 (N = 0)	5.9 (N = 1)
Increase in the number of Guests	0.64	0.0 (N = 0)	64.7 (N = 11)	17.6 (N = 3)	17.6 (N = 3)
Reduction of energy and other resource consumption	1.70	70.6 (N = 12)	29.4 (N = 5)	0.0 (N = 0)	0.0 (N = 0)
Improvement of brand image	1.35	35.3 (N = 6)	64.7 (N = 11)	0.0 (N = 0)	0.0 (N = 0)

6.7 Total cost-benefit performance for acquisition of ISO14001 certification

How did ISO14001-acquired hotels and resorts evaluate total cost-benefit performance for acquisition of ISO14001 certification? They expressed their evaluation from among four choices: 1) Total benefits exceed total costs; 2) Total benefits are equal to total costs; 3) Total costs exceed total benefits; 4) It is impossible to give an evaluation.

The majority of ISO-acquired hotels and resorts evaluated total benefits as being equal to total costs for acquisition of ISO14001 certification, or they found it impossible to give an evaluation (Table 7). This result revealed that acquisition of ISO14001 certification hardly generates a distinct impact of one in which total benefits and total costs considerably exceeds the other.

Table 7 Total cost-benefit performance %

Evaluation	Total	B > C	B = C	B < C	Non evaluation
Number of responses	17	2	7	2	6
Rate	100	11.7	41.2	11.7	35.3

6.8 Factors that encourage hotels and resorts to acquire ISO14001 certification

We asked all questionnaire sample hotels and resorts about factors that encourage acquisition of ISO14001 certification. For the answers, we presented five choices: 1) Subsidy for acquisition of ISO14001 certification; 2) Tax incentives to ISO-acquired hotels and resorts; 3) Consultation by government/industrial association; 4) Campaign by government/industrial association to provide information on ISO14001 certification for the public; and 5) Others (free answer).

Table 8 shows the results. Actually, the rate of questionnaire samples that selected “Tax incentives to ISO-acquired hotels and resorts” is the highest, as hypothesized. Particularly, ISO-acquired hotels and resorts had higher expectations of this than did ISO non-acquired ones. In addition, “Campaign by government/industrial association to provide information on ISO14001 certification for the public” is also recognized as an important factor that encourages acquisition of ISO14001 certification.

In addition, there was a free answer that pointed out the necessity of the hotel rating based on environmental activities.

Table 8 Factors that encourage acquisition of ISO14001 certification %

	Total	ISO14001-Acquired	ISO14001 Non-acquired
Number of responses	N = 41	N = 17	N = 24
Subsidy for acquisition of ISO14001 certification	9.8 (N = 4)	0.0 (N = 0)	16.7 (N = 4)
Tax incentives to ISO-acquired hotels and resorts	29.3 (N= 12)	41.2 (N = 7)	20.8 (N = 5)
Consultation by government/industrial association	12.2 (N = 5)	5.9 (N = 1)	16.7 (N = 4)
Campaign by government/industrial association provide information on ISO14001 certification	24.4 (N =10)	23.5 (N = 4)	25.0 (N = 6)
Others (free answer)	24.4 (N =10)	29.4 (N = 5)	20.8 (N = 5)

*<0.05 **<0.01

7. Conclusions

Based on a questionnaire survey, we reviewed how acquisition of ISO14001 certification influences the hotel and resort sector. The survey was conducted on 144 hotels and resorts in Japan during June-July 2005. We analyzed the differences between hotels and resorts that have and have not acquired ISO14001 certification, and the environmental and economical impacts that its acquisition has on hotel and resort management. We obtained the following results.

First, ISO-acquired hotels and resorts have a sharper recognition of the importance of environmental activities as a management issue than do ISO non-acquired ones, as hypothesized. The rate of questionnaire samples that regard environmental activities as a management issue of prime importance differed significantly between ISO-acquired (70%) and non-acquired (25%) hotels and resorts.

Second, ISO non-acquired hotels and resorts do not necessarily believe that it is impossible to balance environmental protection with improvement of high-quality services to guests, but the majority of them regard it as being very difficult.

Third, as environmental management issues to be given priority, both ISO-acquired and non-acquired hotels and resorts selected "Understanding and cooperation of guests in environmental activities of hotels and resorts" and "Conservation / efficient use of energy and other resources." Besides those, ISO-acquired hotel selected "Waste reduction and promotion of recycling systems," and ISO non-acquired ones selected "Promotion of environmental consciousness of employees." Our hypothesis was verified except for the issue of "Understanding and cooperation of guests."

Fourth, both ISO-acquired and non-acquired hotels and resorts recognize that they have as or more intense disclosure and PR on their environmental activities as other hotels and resorts.

Fifth, ISO-acquired hotels and resorts find that acquisition of ISO14001 certification has the greatest impact on "Reduction of energy and other resource consumption," as hypothesized. Furthermore, they see a significant impact on "Promotion of environmental consciousness of employees" and "Improvement of brand image."

Sixth, the majority of ISO-acquired hotels and resorts evaluate total benefits as being equal to total costs for acquisition of ISO14001 certification, or are not able to give an evaluation. Our hypothesis that total benefits exceed total costs was not verified.

And last, factors that encourage hotels and resorts to acquire ISO14001 certification are "Campaign by government/industrial association to provide information on ISO14001 certification for the public" as well as "Tax incentives to ISO-acquired hotels and resorts."

Notes

¹ According to Williamson (1996), Opportunistic behavior refers to “the self-interest seeking with guile, to include calculated efforts to mislead, deceive, obfuscate, and otherwise confuse.”

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