

## A Cognitive Chrono-Ethnography Study of Visitors to a Hot Spring Resort, Kinosaki-onsen

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### ABSTRACT

There are a number of hot spring resorts in Japan. Some do well in gathering tourists. However, there little has been known why. This paper describes a cognitive chrono-ethnography study that has been done at a hot spring resort, Kinosaki-onsen. We assumed that there should be several styles of visit, e.g., some would enjoy hospitality, others would stick to the constituents of hot spring. We assumed also that those who have different styles would show different activities in terms of the kinds of places they visit and the order of visits. 21 groups of tourists with different visiting styles participated in the study. Each group arrived at Kinosaki-onsen early afternoon and was asked to tour Kinosaki-onsen as they liked. They were asked to carry a GPS and a digital cam-era for recording their activities. We conducted an interview on the next day with the recorded behavioral trajectories and photos. By compiling the data, we identified four types of activities, theme-park type, shopping type, hot spring type, and hotel and meals type. Each type has its characteristic behavioral pattern. This is useful for designing ser-vices that match the individual activity patterns.

*Key words:* cognitive chrono-ethnography, hot spring resorts, activity patterns, GPS.

### INTRODUCTION

A sightseeing spot is a place that tourists visit to leave aside their daily lives for pleasure. Memory of their experience may sway them to return in the future.

However, not all tourists enjoy the same site in the same way. For example, at a spa resort, some tourists enjoy the hot springs, some focus on the regional food, some are there for the ac-commodations and amenities, and others enjoy the hospitality, but all of them expect to have good experiences there. Their evaluation is based on how well their expectations are met. This paper introduces a study implemented for the purpose of exploring the characteristics of tourists who visit sightseeing spots. It applies Cognitive Chrono-Ethnography (CCE), a technique that we developed to analyze people's selection of ac-tivities (Kitajima, Toyota 2010). CCE is used to investigate the process by which an individual selects an activity, using an observation study (ethnographic study) at the site where that activity is performed. Activity data are recorded and collected, and retros-pective interviews are conducted to clarify participants' activity selection at the site. Examples of CCE studies can be found in Someya et al. (2009) for spectators behavior of professional baseball games, Kitajima et al. (2009) for human navigators who try to provide useful information for the drivers, and Kitajima et al. (2005) for passengers who try to find their ways at unfamiliar train stations by utilizing signs.

### Description of Kinosaki

We selected Kinosaki, a spa resort in Hyogo Prefecture, as the object of this study. Ki-nosaki dates back to the Heian era, more than 1300 years ago. As Naoya Shiga's novel At Kinosaki indicates, Kinosaki is famous not only in the Kyoto-Osaka-Kobe area but also as a congenial spa town with various forms of amusement. Sea bathing in summer and crab dishes in winter attract many visitors. More than 30 events, including festivals of each season, are held throughout the year. However, what actually attracts visitors remains relatively unknown, and events are currently planned and executed based on intuition and experience. Therefore, it is important to obtain knowledge about the fac-tors that attract new and repeat visitors, in order to enable the efficient and effective management of spa facilities.

### CONTENTS AND STUDY RESULTS

We implemented a CCE study to determine what tourists enjoy about spa resorts. For this study, tourists visited Kinosaki in a manner that was typical of sightseeing trips to spa resorts and recorded their activities during their stay; their records were then re-viewed. It was important that the trip be typical. What activity was selected for the visit depended greatly on the context in which the event was executed. Selection varied with individual cases (e.g.,

traveling alone, with a group, or with family including children). Having all participants act naturally in a typical context for them will hopefully help determine an accurate description of spa resort visitors.

This study was implemented under the following study design. First, a survey for objectively understanding the diversity of spa resort visitors was implemented. Based on the results, we selected 20 groups (hereinafter called monitors) with different attributes of visiting spa resorts, and had them visit Kinosaki in their usual manner for a trip to a spa resort (e.g., as a married couple, parent and child, or group of friends). The study was conducted during crab season in autumn (November) or winter (January), when Kinosaki is most attractive to tourists. However, the weather and the activities in autumn differ considerably from those in winter. Monitors recorded their activities on their first day in Kinosaki and on the next day. After the monitor checked out of the hotel, an interview was conducted using those records. In the interview, the monitors were questioned about their trip to the spa resort: their reason for selecting the hotel, their reservation method, how they spent their time there, where they had gone before visiting Kinosaki, where they were going after leaving Kinosaki, and where they would have gone if they had not come to Kinosaki. They were also asked to describe their lifestyle. The results of the interviews were summarized, an activity movement outline was extracted for each group, these outlines were integrated, and several activity models were configured in order to derive the characteristics of spa resort visitors. Procedures are detailed in the following sections.

### Selection of the Monitors

For this study, it was necessary to select diverse monitors who enjoyed spa resorts in different ways (attributes of visiting spa resorts). Therefore, a Web questionnaire about hot springs was implemented, and the monitors were selected based on a response pattern indicating attributes of visiting spa resorts, as well as the number of companions and the monitor's relationship with them. The Web questionnaire was distributed to 7,000 potential monitors from 8:00 p.m. on Oct. 3, 2008 (Fri.) to 10:00 a.m. on Oct. 8, 2008 (Wed.). The questionnaire included questions about awareness of, degree of interests in, and intention to participate in a wide range of hot springs and was not limited to the spa of Kinosaki. There were 1,649 responses, of which 1,337 were considered valid. The responses of 229 applicants that were considered valid were then analyzed. The applicants who had characteristics typical of spa visitors were then selected as monitors. For selecting monitors, cluster analysis of the responses to

the questions was used to investigate the attributes of visiting. Figure 1 presents the questions that were used for the analysis. What the responders considered when selecting a spa resort (Q13), when selecting a bath and hot spring (Q14), and when selecting a hot spring hotel (Q15) were addressed in general, regardless of whether or not they had ever visited Kinosaki. Those who had visited Kinosaki were asked to specify the places they had visited (Q22) and why they decided to visit Kinosaki (Q23).

Q13 : Considerations in selecting a spa resort	Q14 : Considerations in selecting a bath and hot spring	Q15 : Considerations in selecting a hot spring hotel
Please select up to five things that you consider when choosing a spa resort.	Please select three things that you consider when choosing a hot spring.	Please select three things that you consider when choosing a hot spring hotel.
1) Nothing in particular 2) Good hotel 3) Good hot spring and bath 4) Easy access by public transportation 5) Easy access by private car 6) Rich nature and good natural environment 7) High degree of unexplored area 8) Good air and atmosphere 9) Crowded and lively 10) Sightseeing spots and show-places 11) Sightseeing, leisure, and sports facilities 12) Famous local specialties and products 13) Souvenirs and shopping	1) Nothing in particular 2) Quality of hot spring 3) Effects of hot spring 4) Color of hot spring 5) Natural hot-water spring 6) Large bathtubs 7) Outdoor hot spring 8) Uniqueness of bathtubs 9) Many types of bathtubs	1) Nothing in particular 2) Good meals 3) Atmosphere 4) Room charge 5) History and tradition of the hotel 6) Good service plan 7) Hospitality 8) Enhanced services and facilities

Q13, Q14, and Q15 were answered by all applicants for participation (229).

Q22: Places you have visited at Kinosaki	Q23 : Why you decided to visit Kinosaki
Please cite all facilities you used and sightseeing spots you visited during your stay or day trip in Kinosaki.	Please cite the five things that were especially important to you when you decided to visit Kinosaki.
1) Public baths 2) Foot baths 3) Restaurants and coffee shops 4) Souvenir shops 5) Fresh fish shops 6) Kiyamachi Street 7) Recreation halls (e.g., target shooting, smart ball, or pachinko) 8) Snacks and bars 9) Karaoke shops 10) Galleries 11) Craft goods (e.g., straw work), craft demonstrations 12) Shrines and temples 13) Museums and exhibitions 14) Monuments of literature and music, noted places in connection with writers 15) Parks 16) Ropeway 17) Hiking courses 18) Hotel information office and Tourist Information Center 19) Maruyama River 20) Kinosaki Marine Ward 21) Genbudo Cave 22) Takenohama seaside resort	1) Quality, effects, and ingredients of hot spring 2) Attraction of spa resorts, such as allowing a tour of public baths 3) Strolling in a yukata 4) A hotel where you wanted to stay 5) Convenience of transportation (e.g., easy access to the spa resort and hot spring streets) 6) Easy access by car 7) Local specialties and products (e.g., crab) 8) Traditional crafts 9) Atmosphere and scenery in the town (e.g., willow trees along the river, peacefulness) 10) Good service and hospitality 11) History and reputation as a spa resort 12) Literary history (e.g., setting for novels and popular place among writers) 13) The area's natural environment and show-places 14) The area's leisure spots 15) Proximity to the sea, allowing sea bathing 16) Local entertainment (e.g., events and festivals)

Q22 and Q23 were answered by only those who had visited Kinosaki (111).

Figure 1. Questions to Classify the Ways Respondents Enjoy Spa Resorts

Questions for analysis	Main elements in each cluster	Description of each cluster	Appearance rate (%)
Q13 : Selection of spa resort	A Hot spring/baths, air/atmosphere, hotel, dishes/special products, rich nature/environment	Standard/major	66.8
	B Sightseeing/leisure/sports, easy access by public transportation, tourist spots	Others as well as hot spring	4.8
	C Rich nature/environment, hot spring/baths, unexplored areas	Unexplored area/nature	21.8
	D Hot spring/baths, air/atmosphere, hotel, souvenirs/shopping, dishes/special products, events	Shopping/festivals	6.6
Q14 : Selection of hot spring and bath	A Type of bath, outdoor bath, size of bathtubs, unique bathtubs	Appearance/facilities	36.7
	B Color of hot spring, quality of hot spring	Stereotype/image of hot spring	7.9
	C natural hot-water spring, quality and effects of hot spring, outdoor baths	Genuine hot spring	55.4
Q15 : Selection of hot spring hotel	A Meals, room rates, atmosphere, service	Cost and quality of service	85.1
	B History/tradition, atmosphere, meals, service plan	History/tradition and air	6.6
	C Meals, enhanced equipment, atmosphere	Meals and facilities	8.3
Q22 : Places visited at Kinosaki spa	A Public baths, souvenir shops, Kinosaki Marine, Takenohama, Genbudo Cave	Usual course outside Kinosaki	56.8
	B Public baths, souvenir shops, monuments of literature and music, shrines and temples, Genbudo Cave, Maruyama River, Ropeway	Full course inside and outside Kinosaki	35.1
	C Public baths, souvenir shops, snack bars, Kiyamachi Street, recreation halls, galleries, craft goods, karaoke	Nightlife and nearby offerings	5.4
	D Arts, monuments of literature and music, souvenir shops	Arts and literature	2.7
Q23 : Reasons for deciding to visit Kinosaki spa	A Public baths, dishes, special products, quality and effect of hot spring, atmosphere/air, strolling in a yukata	Image of Kinosaki	37.9
	B Easy access/convenience, public baths, dishes and special products	Easy access by train	17.1
	C History/reputation, near the sea, easy access by car, nature/showplaces, leisure	Sightseeing/showplaces	14.4
	D Public baths, easy access by car, history/reputation	Famous place that can be assessed by car	27.9
	E Quality and effects of hot spring, service/hospitality, hotel, leisure	Relaxing stay at the hot spring	2.7

Figure 2. Cluster Analysis of Responses Used For Selection of Candidates

Figure 2 presents the results of cluster analysis of 229 applicants' responses to Q13, Q14, Q15, Q22, and Q23. Four clusters for Q13, three clusters for Q14, and four clusters for Q15 were identified for all participants. Four additional clusters for Q22 and five additional clusters for Q23 were identified for those

who had visited Kinosaki. The total number of combination patterns of clusters was 756 ( $4 \times 3 \times 3 + 4 \times 3 \times 3 \times 4 \times 5$ ), of which 79 patterns were actually analyzed.

For responses to Q13, Q14, and Q15 by those who had never visited Kinosaki (118), the top three patterns are ACA (35.30%), AAA (22.19%), and CCA (20.17%), accounting for 65% of the total. The fourth pattern is ACC (5.4%). The top pattern, ACA, represents those who select standard or major spa resorts; they place importance on hot spring/bath, air/atmosphere, accommodations, dishes/special products, and richness of nature/environment (A); prefer genuine hot springs and natural hot-water spring, quality and effects of the hot spring, and outdoor baths (C); and select a hotel based on cost and service (A). The second pattern, AAA, represents those who focus on facilities (e.g., the type of bath, outdoor bath, size of bathtubs, and unique bathtubs) rather than genuine hot springs. The third pattern, CCA, represents those who prefer unexplored areas/nature rather than major facilities when selecting a spa resort.

Using the results of this cluster analysis, monitors were selected on the basis of the following points.

- (1) They could attend on the specified study day and interview day.
- (2) They could participate in the study in a group of two or more persons, including companions.
- (3) The combined clusters were balanced.
- (4) Age group, gender, type of companions, experience of visiting Kinosaki spa, and place of residence were balanced.

Although 24 groups were selected, three groups cancelled; therefore, the final number of groups participating in the study was 21. Among the participants, twelve groups had visited Kinosaki before, while nine groups were visiting for the first time.

### Tourist Activity Study

Two sessions of the study were implemented. The first session was from Nov. 19, 2008 (Wed.) to Nov. 22 (Sat.), and the second session was from Jan. 9, 2009 (Fri.) to Jan. 12 (Mon., holiday). Figure 3 outlines the study process. Each monitor received a briefing of the study after arriving at Kinosaki and then went sightseeing, carrying a digital camera and a GPS. The investigator retrieved these devices at 9:00 p.m. at the monitor's location, plotted the GPS data on a map, and printed the digital photos in preparation for the interviews. Each monitor participated in a 90-minute interview on the following day at a speci-

fied place (Kinosaki Literature Museum for the autumn study and the hotel information office of the Kinosaki Tourist Association for the winter study). Monitors answered the questions while looking at records (GPS data and photos) of their activities, and prepared their own activity movement outlines from their arrival at Kinosaki until their arrival at the interview site, in collaboration with the investigator. This collaboration helped to clarify the tracks, reasons, and background of each monitor's activity selection. Figure 4 presents an example of a monitor's movement outline, drawn by summarizing the results of the interview.

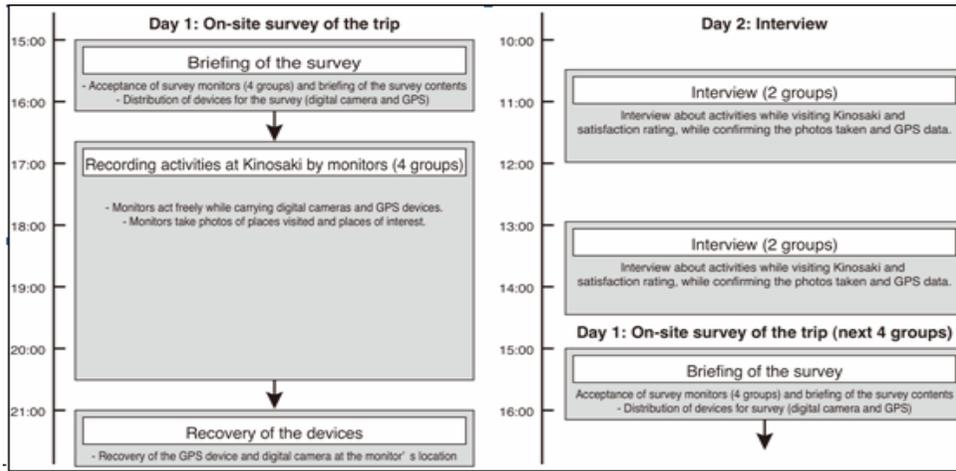


Figure 3. Study Process

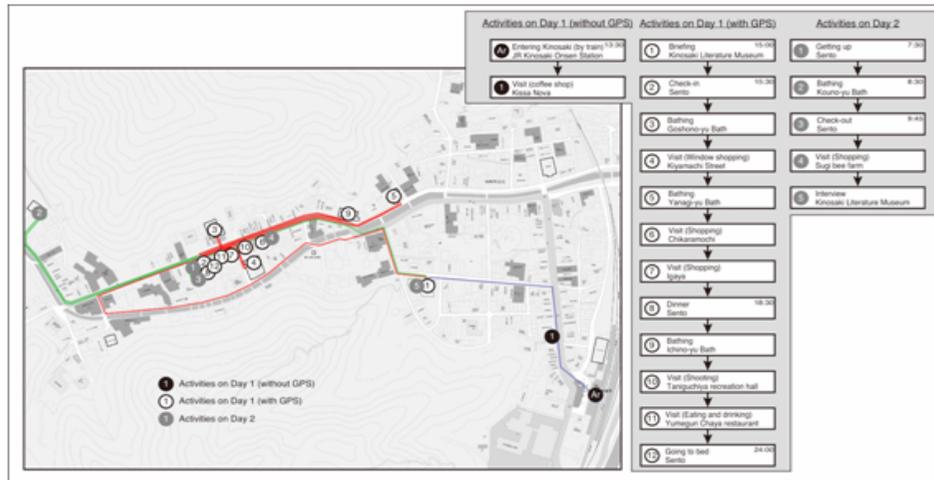


Figure 4. Example of a Monitor's Activity Movement Outline

### Characteristics of Spa Resort Visitors

By examining the monitors' activities collected through the interviews, we found that the following six activity categories would be useful to characterize each monitor's characteristics as spa resort visitors:

- *Hot spring activity:* Taking public baths frequently
- *Hotel activity:* Having a lot of interest in hotel selection; enjoying indoor bathing at the hotel
- *Eating activity:* Having a lot of interest in dining at the hotel; enjoying dining out
- *Strolling activity:* Strolling the streets; high interest in streets
- *Entertainment activity:* Use of service facilities/tour areas outside Kinosaki
- *Shopping activity:* Visiting souvenir shops, purchasing souvenirs, eating at various restaurants.

A matrix that represents the differences among the six activities was created and analyzed by means of the Hayashi's quantification method, type III. The results indicated that the differences could be explained by two-dimensional coordinates, with the first axis representing "Static vs. Dynamic" and the second axis representing "Shopping-Oriented vs. Bathing-oriented" and the monitors would be classified into four categories. The results are plotted in Figure 5.

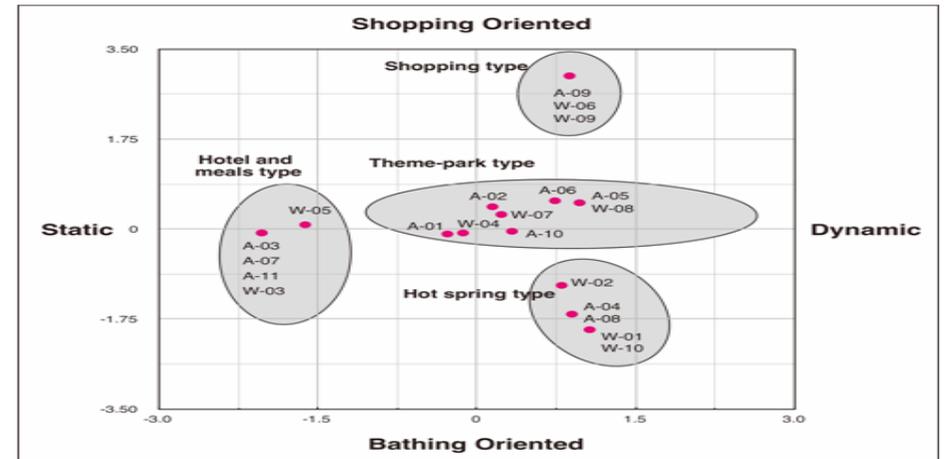


Figure 5. Two-Dimensional Plot of Ways to Enjoy Spa Resorts

*Theme-park type:* People in this category fully enjoy a well-balanced hot spring trip (e.g., eating, shopping, and bathing). Their activities are diverse, with some

groups (A-01, A-05, and A-06) enjoying relaxation and others (A-02, A-10, W-04, W-07, and W-08) preferring to move about. These tourists feel that a two-day trip with an overnight stay is insufficient because of the shortage of time. Many arrive at Kinosaki early, before check-in, and depart late, after the check-out. When traveling by car, they enjoy sightseeing. Furthermore, because of these tourists' comparatively vigorous desire for consumption and experience, their feeling of satisfaction may be improved by introducing ways to help them enjoy the whole day fully and/or by providing services that make them want to return.

*Shopping type:* Tourists in this category spend more time shopping than taking public baths. The main purpose for some may be to look for souvenirs; however, analysis of the study results also indicated some passive reasons for shopping, such as bad weather (W-06), long lines or crowds at the public baths (W-09), and "more enjoyable than bathing because it will not cause any trouble if we are taking children" (W-09). While these tourists may not buy many souvenirs, they may be dissatisfied with the spa resort if they find few attractive special products or only a few souvenir shops or goods.

*Hot spring type:* Tourists in this category spend more time taking public baths than shopping or dining at local restaurants. Although they do stroll the streets and go sightseeing, their main purpose during their stay after check-in until check-out is taking public baths. The sole purpose of some tourists (W-01 and W-10) is bathing in the hot spring. They may have time to buy souvenirs after check-out, but they may spend this time having lunch at a restaurant, due to limited time. They may be dissatisfied with charges for public baths after check-out (A-08 and W-01).

*Hotel and meals type:* Tourists in this category are not as active in taking public baths but do enjoy indoor baths and dinner at the hotel. Some may visit Kinosaki before or after check-in on their way into or out of the prefecture (A-07 and A-11). Therefore, they do not engage in activities for full enjoyment of the Kinosaki spa (e.g., public baths), but they do enjoy spending quiet time at the hotel (A-03 and A-07) or strolling the streets (A-11, W-03, and W-05). This category includes tourists who are accustomed to traveling (A-03, A-07, and A-11) and those who return to Kinosaki spa (W-03 and W-05). Because the cost of an overnight stay accounts for nearly the entire cost of the trip, these tourists tend to evaluate meals and services severely and are highly aware of the cost. Furthermore, tourists in this category tend to use such high-class hotels as Nishimuraya (A-07 and W-03) or were considering it this time (A-11).

## CONCLUSION

Kinosaki organizes various events and successfully attracts tourists. However, how visitors perceive these services has not been analyzed. The plan-do of a plan-do-check-act (PDCA) cycle has been performed without the check-act process. Results of the CCE studies in this study indicate that visitors to Kinosaki spa can be classified into four types, based on their expectations. Thus, it is finally possible to complete the PDCA cycle, and we can examine whether or not the currently provided services meet visitors' needs and expectations. Quantitative analysis of participants is necessary to estimate how many belonged to each of the four types. Such analysis allowed quantitative prediction of the effect of the services provided. We have used CCE studies to configure activity models of people who accept each type of customer service not only at spa resorts but also at baseball stadiums (Someya et al. 2009) and movie festivals (not available in English). We do not stop here. We have been conducting projects for designing innovative services based on the activity models of service receptors. They should improve the productivity of services because they are targeted to heterogeneous individual customers. We believe that CCE is a powerful device for effectively carrying out the PDCA cycle.

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