Comparison between Japanese Tipping Customs, Kokorodzuke, and Western Tipping Customs: Japanese Cultural Uniqueness Making Foreign Tourists Confused

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Abstract

Our research topic is a discovery of Japanese cultures uniqueness making international travelers get confused and disappointed from tipping customs' differences between Japan and western countries. Most people think that there is no tipping custom in Japan, and this is not wrong in most situations. Therefore, many international tourists can enjoy Japan staying without worrying about the tipping problem. However, there has been some specific situations that require people to tip. Staying in Japanese traditional style luxury hotels is one of the most significant situations that people should customarily tip. This is the Japanese untold tipping custom called kokorodzuke. Surprisingly, there is no clear definition of kokorodzuke. Therefore, we conducted text mining on Yahoo chiebukuro (Yahoo Answers). As a result, we found that many Japanese people also got confused and disappointed by this custom when they were going to stay in Japanese traditional style hotels called ryokans. From this result, we thought that international tourists must get confused and disappointed about kokorodzuke as well as the Japanese people, and that some of them might have uncomfortable experiences because of the ignorance of this custom during their staying. We confirmed that from text mining results by wrod2vec. In the paper, we show the text mining results. If it derived from Japanese traditional untold cultures, Japanese people engaging in doing business with international tourists should improve the current status to remove the barrier.

Keywords: *kokorodzuke*, tipping customs, Kyoto *ryokan*, text mining, *tripadvisor*, Yahoo Answers, LDA, word2vec



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Introduction

Since IOC (International Olympic Committee) chose Tokyo as the Olympic Games venue, Japanese government has strived for attracting more international tourists to Japan for foreign currency. Many facilities, sites, services, and so on are have become international-friendly, and this improvement attracts more international tourists. Then, the Japanese government's endeavor seems to have been archiving a quite success. However, there would be many problems that should be improved in future.

We focus on Japanese hotel tipping customs called *kokorozduke*, as one of the problems. First, we shall locate the existence of the problem; whether some international tourists get confused and disappointed with the Japanese hotel tipping customs or not. The analysis method is a topic extraction by text mining. Secondly, we clarify Japanese persons' common sense of *kokorodzuke* by text mining. As a result, we found that even Japanese people are likely to get confused and disappointed when they stay at Japanese style hotels called *ryokans*. From this result, we thought that international tourists must get confused and disappointed about *kokorodzuke* as well as the Japanese people, and we can guess that some of them might have uncomfortable experiences because they have no idea on this custom during their staying. We confirmed the existence of the problem from text mining results by wrod2vec. In the paper, we show the text mining results.

Our Research Method and Data

In this section, we will describe our research method and data we used. The data we used in the analysis are data from *tripadvisor* and Yahoo Answers (Yahoo *chiebukuro*). *tripadvisor*® is the world's largest travel site, enabling travelers to unleash the full potential of every trip. The sites operate in 48 markets worldwide (cited from https://www.tripadvisor.com/PressCenter-c6-About_Us.html). The *tripadvisor* offers advices from millions of travelers and a wide variety of travel choices and planning features with seamless links to booking tools that check hundreds of websites to find the best hotel prices, so that the *tripadvisor* can hold the largest travel community in the world. We shall collect the international travelers' comments from *tripadvisor* which are written in English. On the other hand, when we would like to survey the Japanese common sense, Yahoo Answers is one of the best web sites. Yahoo Answers is a community-driven question-and-answer (Q&A) site that allows users to both submit questions to be answered and answer questions asked by other users (https://en.wikipedia.org/wiki/Yahoo!_Answers). The Q&A sentences are written in Japanese.

Let us explain our research approach. First, we would like to collect international tourists' comments about trips in Kyoto which is the most popular location in Japan. We selected *tripadvisor* as the web site. When we conducted topic extraction on the data, we found that many international tourists get confused with Japanese tipping system *kokorodzuke*. Then we were interested in *the kokorodzuke*. Because we have no idea on *kokorodzuke*, first we started survey on the Japanese common sense on *kokorodzuke*, using Yahoo Answers. From the results, we found that many Japanese have no clear idea on *kokorodzuke*. Therefore, we inferred that it is quite natural for international persons not to understand the complicated customs. Then we again analyzed the *tripadvisor* data so that we can collect the international tourists'

complains on kokorodzuke.

On *tripadvisor*, we collected text data with the retrieval keyword "Kyoto, Japan" (See Table 1). The total number of collected reviews is 29,030. The data period is from May 23rd, 2004 to October 25th, 2016. We conducted a topic extraction on the 2016 data. The number of the reviews in 2016 is 7,685, the number of words is 720,996, and the period is January 1st to October 25th. We used TreeTagger as the morphological analysis tool for segmentation of the English messages. As a word unit, we use a noun-noun bigram such as "style+room".

Table 1: Collected data's details for topic extraction

	TripAdvisor	Yahoo Answers (chiebukuro)			
Keywords	Kyoto, Ryokan	kokorodzuke			
The Number of Reviews/Q&As	7,685	1,929			
The Number of Words	720,996	174,271			
Period	01/01(2016)-10/25 (2016)	05/28 (2004) - 09/07 (2016)			
Language	English	Japanese			
Tool	TreeTagger	MeCab			
Word Unit	noun-noun bigram	noun-noun bigram			

We constructed, from the text data, the topic extraction using the LDA (Latent Dirichlet Allocation) model. The LDA model is a widely-used multi-topic document model based on Baysian intefrence method (D. M. Blei, A. Y. Ng, and M. I. Jordan., 2003). The Markov chain Monte Carlo methods (MCMC) algorithm we used on the LDA model was Gibbs sampling (D.M. et al., 2003). The Gibbs sampling is widely used. The algorithm is visually explained in (Y. Shirota, T. Hashimoto, and B. Chakraborty., 2016). As the programme of the LDA with the Gibbs sampling, we used the R packaged offered by "The Comprehensive R Archive Network abbreviated as CRAN titled "Ida: Collapsed Gibbs sampling methods for topic models" developed by Jonathan Chang². In LDA model, we have to dcide in advance the number of topics. In this work, we decided the number to be seven after some experimentation, because with the seven topics, the topics clearly appreared. The results are shown in Table 2. There most frequently appearing words per topic are described. The contents of the extracted topics are described in the next section.

In the same way, we collected text data with the retrieval keyword kokorodzuke on Yahoo Answers (See Table 1). The retrieval keyword is "kokoroduke" in Japanese. As the messages are written in Japanese, we used MeCab³ as the morphological analyzer. As a word unit, we use a noun-noun bigram such as " $\sharp \mathcal{F} \mathcal{V} + \mathcal{F} \mathcal{V}$ " which means "hotel tipping" in English. The number of Q&As about kokoroduke we extracted is 1929, the number of Japanese characters is 174,271, and the period is from May 28th, 2004 to September 7th, 2016. Then we conducted topic extraction. Then we found that five was appropriate as the number of topics. The results are shown in Table 3.

¹ http://www.cis.uni-muenchen.de/~schmid/tools/TreeTagger/

² CRAN web page: http://cran.r-project.org/

³ http://taku910.github.io/mecab/

In addition to the LDA model, we also used the word2vec for the analysis (Mikolov et al. 2013). Word2vec, based on the two-layer neural network, makes the word vectors which correspond to principal components so that they can represent words in the vector space. In advance, we make a vector representation model from the input text file. The output of word2vec is the vector representation model (vector space) in which each word is represented as a vector. Let us show you an example in Figure 1. There, the word "Japanese" is expressed as a vector with six element values from V1 to V6.

Figure 1: A vector representation example of the word "Japanese"

Using the vector representation model, we can calculate the similarity level between two words. Given a word, we can extract the similar word list to the word. Then we can get the subset of the vector space of the extracted similar word list. For the subset vector space, we shall conduct visualization using t-SNE (t-Distributed Stochastic Neighbor Embedding) as shown in Figure 2. The t-SNE conducts dimensionality reduction that is particularly well suited for the visualization of high-dimensional datasets (Maaten 2014). In the paper, the number of dimensions are reduced from 100 to two. The two axes are corresponding to the two principal component directions that t-SNE extracted. In the following of the paper, we shall use the same framing of the t-SNE without axis names.

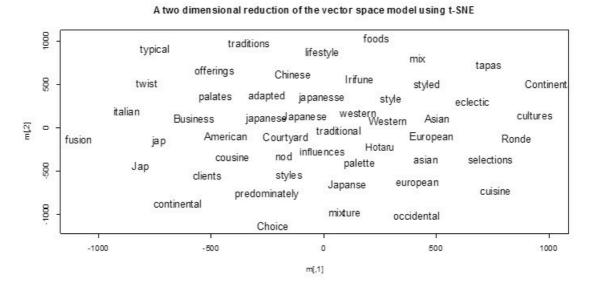


Figure 2: A two dimensional reduction of the vector space model using t-SNE

The Result of Topic Extraction

In the section, we shall describe the results of the topic extraction. The first purpose of the text mining from *tripadvisor* is that we should understand the current status of the

international tourists. We set the number of topics seven and extracted the topics. Let us explain the topic extraction results (See Table 2). We interpret the topic titles as following: (1) sightseeing, (2) transportation, (3) popular things, (4) room preference, (5) train station, (6) bamboo, monkey park (*Arashiyama*), and (7) Kyoto station.

Table 2. Extracted topics and its most frequently appeared words

#	1	#	2	#	3
Golden+Pavilion	78	train+station	179	ice+cream	71
entrance+fee 75		Kyoto+station 138		*blossom+season	31
souvenir+shop		Kyoto+Station	76	guest+house	29 27 26
		bus+stop	75	Chao+Chao	
		subway+station	66	tour+bus	
Golden+Temple	39	bus+station	49	tea+house	22
Kiyomizu-dera+Temple	34	breakfast+buffet	43	Golden+Pavillion	22
Buddhist+temple		tourist+attraction	42	*Gion+area	18
Maruyama+Park	31	convenience+store	42	dining+experience	18
blossom+season	30	minute+walk	41	tea+ceremony	17
#	4	#	5	#	6
style+room		train+station	-	bamboo+forest	397
*tatami+mat	44	Kyoto+station	189	bamboo+grove	148
Hotel+Mume		Kyoto+Station		monkey+park	66
ryokan+experience		subway+station		ice+cream	49
*kaiseki+dinner		minute+walk	88	Bamboo+Forest	43
capsule+hotel	36	hotel+room	72	bamboo+tree	41
taxi+driver	31	Kyoto+train	71	day+trip	39
dining+room		bus+stop		train+station	36
garden+view	28	smoking+room	63	train+ride	35
boutique+hotel		breakfast+buffet	53	Bamboo+forest	26
#	7				
Kyoto+station	153				
Kyoto+Station	129				
train+station	61				
minute+walk	47				
Kyoto+Tower	39				
subway+station	29				
air+conditioner	25				
bus+stop	24				
taxi+ride	22				
convenience+store	21				

^{*}Gion area: a popular area in Kyoto, Japan

^{*}tatami: a type of rice straw made mat used as a flooring material in traditional Japanese-style rooms

^{*}kaiseki: a traditional multi-course Japanese dinner

^{*}capsule hotel: a type of hotel developed in Japan that features a large number of extremely small "rooms" (capsules) intended to provide cheap, basic overnight accommodation for guests who do not require the services offered by more conventional hotels.

The topic (1) includes many popular spot names in Kyoto. Although we have no idea of the topic (6), we found that the topic corresponds to the *Arashiyama* area and that the bamboo forests and the monkey park got popular. In these results, we were interested in the fourth topic "room preference" in which they talked about *ryokans* and the Japanese style rooms. The topic mainly talks on the advantages of *ryokans* which are made of Japanese style housing (wooden dwells), *tatami* mats, *kaiseki* dinner, garden views and so forth. There is no explicit complain about *kokorozuke*. We, however, found two complaints in the original review sentences as follows:

- Furthermore, their billing practices, itemizing every single tea, bottle of water, snack or cup of tea and, to top it off, charging an outrageous 15% service charge on everything including the already expensive room rates is just infuriating. I wish I would have read another *tripadvisor* review mentioning the same thing before I booked that hotel.
- My problem with the inn was the lack of English speaking staff and understanding and added extras on the bill. We knew that there was an added 15% service charge to the bill along with a 5% tax. We were surprised that the inn had adopted a western tradition of service charge as that is unheard of everywhere else in Japan. We expected better service and English.

There we found that a few persons complain on *kokorozuke*. We think that the complaints stem from their ignorance of the *kokorozuke* system owing to lack of the explanation of *kokorozuke* system by *ryokan* staffs. As described in the above two cases, when the guests do not pay *kokorozuke*, then the *ryokan* would take that as additional service charge without explaining that. The Japanese tour business persons should tell the *kokorozuke*. However, it may be quite difficult for us to explain that because it is related to the Japanese mindfulness. To translate *kokorozuke* definitely or clearly, we will first have to know the Japanese people's common sense on *kokorozuke*. Therefore, we analyzed *kokorodzuke* from the Yahoo Answers Q&As. In this topic extraction, we set the number of topics to be five after some experimentation. We interpret the topics in the following ways (See Table 3):

- (1) accommodation charge including service charge,
- (2) onsen ryokan,
- (3) tip occasion,
- (4) kokorozuke amount, and
- (5) manners on service charge.

From the topic (1), it is clear that most Japanese people think that they do not have to tip because accommodation charges already include service charges. There we found the Japanese words that mean "no need" or "included charge". The topic (2) talks about *kokorozuke* at *onsen ryokans* which are Japanese style hotels with nice hot spring bathing facilities.

Table 3. Topic extraction results on kokorodzuke on Yahoo Answers

	1		2		3		4		5
service charge	410	thousand dollar	59	thousand dollar	39	meal in room	85	a thousand JPY	276
basic	101	two people	42	100,000	14	1,000JPY*	76	service charge	106
employee	61	onsen ryokan	41	best man	13	pochibukuro	64	pochibukuro	75
included charge	46	service charge	34	birthday	12	showing room	62	3,000	56
accomodation charge	46	meal in the room	32	questioner	12	2,000JPY*	57	about yen	54
hotel charge	42	moming	25	hair salon	12	3,000JPY*	51	showing room	50
charge-service	39	30,000JPY	20	hotel charge	11	5,000JPY*	51	ten thousand yen	48
accomodation	35	need kokorodzuke	17	year ago	11	service charge	37	luxury ryokan	41
general	33	personal	17	host	11	about yen	34	~3	40
service charge	33	japan tip	17	nishimura-ya	11	yen~	34	yen~	33
no need tip	29	onsen inn	16	person in charge	10	questioner	29	receipt	33
personal	29	living cost	16	staying for 2 or more days	10	roughly yen	28	meal in room	32
showing room	27	staing in ryokan	14	hair make	10	driver	26	with room	32
room charge	27	a few years	14	tour company	9	luxury ryokan	24	basic	31
eed tip	25	non-regulated	13	bed make	9	basic	23	accomodation charge	29
no need kokorodzuke	25	need tip	12	how many people	8	tour company	22	employee	27
what special	24	questioner	12	we	8	check out	21	in room	25
luxury ryokan	23	theater side	12	times	8	general	21	3,000	24
bellboy	22	inn side	11	bride side	8	onsen ryokan	19	roughly yen	21
ryokan survice	21	dinner time	11	the Spanish	8	charge of room	19	hotel charge	17
						*1,000JPY as tip equalls one 10 dollar bill			

^{*}onsen: a Japanese hot spring and the bathing facilities and inns frequently situated around them

The topic (3) is informative as it is talking about some special occasions in which *kokorozuke* is needed. In this topic, there are some words that could relate to wedding ceremonies such as a best man, a hair salon, a host, and so on. From these, in a Japanese common sense, kokorrozuke is needed first at *onsen ryokans* and secondly at wedding parties. Although we did not first expect comments concerning *kokorodzuke* in wedding ceremonies, however, it becomes clear that *kokorodzuke* in wedding ceremonies is a common rule for many Japanese. From the text mining results, it becomes difficult to insist that there is no tipping system in *ryokans*.

The topic (4) is some various opinions on an amount of *kokorodzuke*. Although the amount depends on each case, the standard level when you stay at *ryokans* is discussed mainly there. From the comments, we can know that many people feel that 1,000 JPY (about 10 dollars) is enough. However, 2,000 JPY, 3,000 JPY, and 5.000 JPY are also described as frequently answers. The reason why there is no 4,000 JPY may be that many Japanese think the figure four 4 is an abominable figure. Therefore, we Japanese are likely to avoid the four related figures such as 4000.

The topic (5) discusses manners on service charges. The *pochibukuro* is a small envelop used for giving gratuities. The excellent manner says that the tip money should be handed over, being wrapped in the envelope. We think that the *pochibukuro* expresses Japanese mindfulness, thoughtfulness, and care for the hotel staff members. In Japan for New Year's older people give an allowance to younger people and in general the New Year's allowance is what people give to those below them (Takanori Shintani, Andrew P. Bourdelais, 2009). Then, the *pochibukuro* is used. For a wedding, there are different special ceremonial envelopes, not *pochibukuro*, for giving money

^{*}nishimura-ya: a famous Japanese style hotel (ryokan) with hot springs located in Hyogo prefecture

^{*}pochibukuro: a small envelope used for giving gratuities

as gifts to the bride groom. The envelope is in form of ceremonial folded paper and colored paper strings. For a funeral, there are another special sympathy envelopes with black strings. The Japanese take care when handing money. The manners must have concerned others in society.

In conclusion, from these many comments on Yahoo Answers, we found that many Japanese must have got confused and disappointed with the tip problem at *ryokans*. The most frequently asked questions were an appropriate tip amount. In addition, we found that there is no widely shared common rule about the amount.

The Result of word2vec

In the section, we shall describe the results by word2vec and t-SNE. Let us explain the input data of the word2vec. They are the text data from *tripadvisor* with the retrieval keyword "Kyoto, *ryokan*". The total number of collected reviews is 29,030. The data period is from May 23rd, 2004 to October 25th, 2016. The word2vec makes the vector model from the text data. Then on the vector model, we shall get similar words to the word "service charge." This is because we think that "service charge" is a similar word of *kokorodzuke*. Some concepts concerning *kokorodzuke* would appear around "service charge."

Figure 3 shows words similar to the word "service charge." There is no *kokoroduke* around the word "service charge", which means the reviewers must have no idea of the tipping system name. However, we found the two interesting results.

(1) Wi-Fi Free

As shown in Figure 3, we can see "Wi-Fi" in the neighborhood of "free" of "FREE". These words are frequently used with Wi-Fi, internet, PCs, and so on. Reading the original reviews, we found that Wi-Fi, internet, or PCs were offered with free charge in almost all *ryokans*. They are co-occurrence words.

(2) Tacit service charge

There are some emotional words such as abysmal, downer, poor, ridiculous and lousy. These words express negative emotions. Reading the original reviews, we found that the writers used these words when they were talking about ryokans' service, food, accommodation, and the service charge. One unexpected interesting finding is that some (or even many) ryokans take a 15%~18% service charge in addition to the accommodation fees. The problem is that the charge is conducted without guests' permissions. From their reviews, they complain that ryokans did not tell their guests about the service charge, in advance. And when guests left ryokans and looked at their receipts, they found that 15%~18% service charge was automatically charged together with the accommodation fees. If the international tourists were explained the additional service charge, they must have rejected the charge. Then, the ryokan staffs could not persuade them. There are two reasons why they could not persuade that. The first one is that the staffs in many cases would not have good command of English, so that they can explain the meaning of additional charge. In addition, we do not think that the *ryokan* staffs get used to debating; they would not be able to explain the charge logically. The second reason is that the international tourists would not accept the additional charge, because they take it as a unilateral change after contracting once. The ryokan staffs would have expected their tacit approval of the additional charge. However, they would not accepted that and get cross when they saw the receipts.

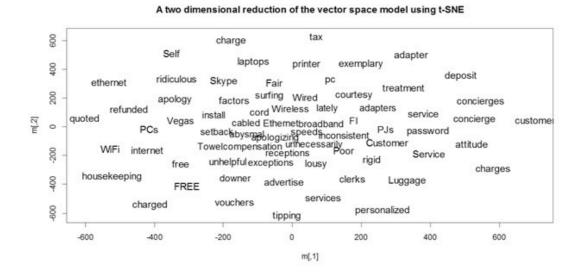


Figure 3: The similar words to "service charge" in the vector model

The word2vec results exposed the fact that there were *ryokans that* charged the additional 15%~18% amount as a service charge. In other words, in Japanese *ryokans* there is surely a tipping custom, although they say their *ryokan* has no tipping custom. Then, how should the *ryokan* staffs explain *kokorodzuke*? That is our next theme.

Three Types of Tipping Situations in Japan and Problems of Kokorodzuke

In this section, we will analyze handing *kokorodzuke* situations and consider problems on *kokorodzuke*. From the topic extraction results, we think that handing tipping situations can be divided into the following three cases:

(Case 1) Standard level *ryokans* without extra services. In the Japanese standards, accommodation expenses in many *ryokans* include service charges. If they do not pay some money, there would be no problem.

(Case 2) Standard level *ryokans* with extra services. Even though there is no tipping custom in Japan, there are some situations that people should tip to show their gratitude when they receive extra services. For example, the services are changing a room, asking special assists to *ryokans* for physically challenged people, and so on.

(Case 3) High-rated *ryokans*. At high-rated *ryokans* like five star hotels, customarily the *kokorodzuke* system remains. Contrary to the former two cases, in this case a guest usually hands over to a *nakai* when the *nakai* goes to the guest room to prepare a Japanese-style afternoon tea set. Usually, the amount would be from 10 to 30 US dollars and the tip would be handed over in a small envelope, *pochibukuro*, in many cases, a *nakai* politely refuses *kokorodzuke* at least once because ostensibly and officially the guests do not have to hand over *kokorodzuke*. Because receiving the

kokorozuke may be illegal, the *nakai* refuses being given the *kokorozuke*. However, the refusal does not mean "no thank you" and it implies a tacit approval "yes." For international tourists, it is difficult to understand the connotation.

The implication of the gratuities called *kokorozuke* means greetings and expectations so that they can be given still higher level services from the *nakai* during their stays. *Kokorozuke* illustrates Japanese traditional untold cultural features. In western countries, people give service providers some coins or bills directly, and service providers usually receive tips. Moreover, service providers may demand some money as a tip when they offer extra services. In addition, as above mentioned, there is a Japanese tradition of *pochibukuro*. The *pochibukuro* would express Japanese mindfulness

Another difficult point for foreigners may be when they should give *kokorozuke*. The *ryokan* guests should give a tip to a *nakai* at the very beginning of their stay, because *kokorozuke* means the expectations. However, in western countries, people tip only when they are given services. If the services are not enough well, they will not tip. The custom is widely known around the world. Therefore, the service providers work as much as they can to obtain more tips. On the other hand, *kokorodzuke* seems like a prepaid tip. *Kokorozuke* usually implies a demand of good service to a *nakai*. The *kokorozuke* custom is quite different from a tip in western countries and complicated psychological interactions with a *nakai* would be needed. *Kokorozduke* is originally written "心忡'' in Japanese, and "心" means "heart." People, especially guests staying *ryokans* would like to stay more comfortably during their staying. During their staying, *ryokan* staffs are working for them as their own butlers and maids to make their *ryokan* experiences wonderful. Therefore, the guests tip a *nakai* with their hearts to express a greeting, expectations, and gratitude, in advance.

Kokorozuke is not stated but when you stay at an upper level ryokan, kokorozuke may be required. If the tourists will not hand in that, it might result in customers' dissatisfaction. The ryokan staffs have to understand the current situation and consider an improvement approach. We think that the ryokan should not take the additional charges once they contract no service charge.

Conclusion

In the paper, we describe differences between Japanese tipping customs and Western tipping customs. Using text mining techniques, we analyzed reviews of international tourists on Kyoto *ryokans*. We used the website *tripadvisor* reviews which are written in English. As a result, we found that the international tourists in Kyoto *ryokans* were confused and disappointed on the tipping system in *ryokans*. To solve the troubles of the international tourists, we surveyed the current common sense of Japanese concerning the *ryokan* tipping system. For the analysis, we collected the data from the Q&A comments by Japanese persons on Yahoo *Chiebukuro (Answers)*. However, we could not find the clear definition of *kokorozuke*, which means many Japanese also get confused and disappointed on the *kokoroduke*. Then we conducted again topic extraction on the international visitors' comments on tripadvisors and visualized the similar words to the word "service charge" by using word2vec. The word2vec results exposed the fact that there were *ryokans that* charged the additional 15%~18% amount as a service charge. In other words, in Japanese *ryokans* there is surely a tipping custom, although they say their *ryokan* has no tipping custom.

Then, we analysed the comments, so that we could categorize the tipping situations. The important thing is that the custom *kokoroduke* is supposed to be conducted only in a high class *ryokan*. Therefore, the tourists will have to ask in advance whether *kokorozuke* is needed or not at the *ryokan* when the *ryokan* may be a high class one. However, we think that the procedure is irksome for the guests. Instead of that, the *ryokan* should offer a clear charge system and definition for international tourists.

The website of foreigners' reviews such as *tripadvisor* offers much information concerning international visitors complains. We will continue to find such kinds of complaints on the web via text mining for the improvement.

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