Hindawi
Advances in Human-Computer Interaction
Volume 2019, Article ID 8632892, 10 pages
https://doi.org/10.1155/2019/8632892

Research Article

Exploring the Types of Casinos Preferred in Japan via Conjoint Analysis of Relevant Words

Nozomi Komiya and Jun Nakamura

Shibaura Institute of Technology, 108-8548, 3-9-14 Shibaura, Minato-ku, Tokyo, Japan

Correspondence should be addressed to Nozomi Komiya; pa17005@shibaura-it.ac.jp

Received 24 June 2018; Revised 24 October 2018; Accepted 26 November 2018; Published 1 January 2019

Guest Editor: Akinori Abe

A word can carry different meanings for different people. Conjoint analysis was applied to assess preferences for various words describing integrated resorts (IR) including casinos, to be introduced in Japan in the future. We discuss how the participants understood particular words (e.g., a specific casino's place name or wording regarding restrictions on betting) that define the characteristics of a casino, as well as how casino-related words influenced participants' preferences. Implications for enhancing public understanding of casinos are explored in the conclusion.

1. Introduction

People understand words in a variety of ways, and the same words can be interpreted differently depending on one's knowledge, experience, and sensibility [1]. Errors and problems arise even in everyday circumstances due to differing interpretations of words. On the other hand, understanding can be improved by linking appropriate images with words. For example, consider an integrated resort (IR) that includes legal casinos. IRs contribute to the tourism industry in more than 141 regions worldwide and have produced a large economic effect [2]. For example, Macau has operated casinos as part of its tourism industry since 1847. Macao has turned casinos into entertainment facilities (with accommodation), revitalizing the casino market by transforming casinos to be more like resorts. In 2006, Macao became the most lucrative casino city worldwide, followed by Las Vegas [3].

In Japan, the Act on the Promotional Development of Areas for Specified Integrated Resort Facilities (the IR bill) was passed in 2016. During 2018, the National Assembly is expected to establish an IR implementation law outlining more specific regulations for the introduction of IRs. However, many people opposed to IRs [4]. Despite this resistance, it is noteworthy that the size of the gambling market in Japan (including public gambling and PACHINKO) exceeds 20 trillion yen per year. Therefore, Japan is akin to what may be called a "gambling center" [5].

Why has Japan failed to support casinos thus far, given that many people are familiar with the activities of casinos, such as large-scale public gambling and games of PACHINKO? In view of the abovementioned issues, the authors consider how words related to casinos have influenced people's preferences, i.e., how words may create negative or positive impressions of casinos.

The following chapter provides a review of the literature. The experimental details are discussed in the third chapter. The fourth section presents the results, and the discussion is set out in the fifth chapter. Finally, conclusions are drawn in the final chapter.

2. Literature Review

As part of an effort to rectify the negative image of public works policy in Japan, a follow-up survey of participants' impressions of various words related to public works was conducted [6]. Public works projects were originally conceived as contributing to the nation's relief efforts, safety, and disaster management. However, negative events such as accidents and delays in construction have taken a toll on people's impressions of public works. Tanaka et al. categorized

words used in the context of public works into four categories: (1) words directly describing public works; (2) Words directly related to public works; (3) words influencing public works; and (4) words indirectly related to public works. Tanaka et al. targeted not only words directly expressing public works but also relevant images and the names of political parties and politicians. Thus, perceptions of public works were widely analyzed. Their analysis revealed a change in people's impression of public works when the urgency and necessity of public construction projects were highlighted in the press. In Japan, the introduction of casinos is expected to have positive economic effects [7]. However, many people still have negative impressions of casinos. Gambling has been associated with suicide, unemployment, and productivity declines [8]. When making decisions, people choose the most satisfying option based on the available information [9].

In the context of casinos, decisions seem to be based on both positive and negative factors such as economic impact and social cost. Decision-making methods have also been explored. Of several factors affecting perceptions of casinos, Yan and Chee [10] clarified those that were significant using both the Analytic Hierarchy Process (AHP) and the conjoint analysis; the latter shows that practical decisions are made by combining several factors and is thus more useful than AHP, which simply compares factors. The cited authors compared the two methods, but not in the context of improving casino perceptions or marketing methods. Thus, although our methods are similar to theirs, the works differ in terms of perspective and significance. Conjoint analysis is not confined to casino perceptions; it is used to identify the most important factors involved in choosing a product when multiple possible factors may be in play [11, 12].

One study highlighted the influences of elements of the casino environment (building structure, degree of congestion, sound environment, etc.) on the mental state of people with problematic gambling habits using conjoint analysis [13]. Consumers are trying to select the more desirable option when choosing the most preferable product or service from among several [14, 15]. In such cases, consumers may use multiattribute decision making [16]. However, research that considers marketing elements among the constituent factors pertinent to casinos is limited, even considering research addressing environmental factors such as the structure of the facility [13]. Also, no research has addressed the question of how people understand words related to casinos. Therefore, we began by examining words related to casinos; we extracted such words using conjoint analysis.

Above, we focused principally on analytical methods. The reason why we used conjoint analysis will be given in the Methods section. Japanese casinos have been but poorly researched. Indeed, no keywords identifying casino preferences have been identified; our work is thus meaningful.

3. Experimental Details

3.1. Purpose. In this study, to determine the degree of desirability (hereinafter referred to as "preference") of various levels of casino, a conjoint analysis was conducted on the data obtained from a questionnaire survey. In this section, an outline of the survey and methods for deriving results will be described.

3.2. Method. Why did we use conjoint analysis to search for words reflecting casino preferences? The AHP mentioned above has much in common with conjoint analysis; both approaches preweight evaluation items (factors). However, we thought it inappropriate and unrealistic to weight combinations of individual evaluation items. When selecting products or services, customers make decisions after comprehensive evaluation of multiple factors at different levels. Additionally, the use of AHP was inappropriate because AHP preweights evaluation items; Japan does not yet have casinos and the casino-associated views of Japanese people remain completely unknown. Thus, it would be premature to use AHP in the present work. We concluded that conjoint analysis, which explicitly derives the influences of various factors, would be appropriate. We performed the following three steps:

(i) Step 1: We derived evaluation scores for all cards presented to subjects.

(ii) Step 2: We derived preferences for each level based on these scores.

(iii) Step 3: We assessed the influence of each factor based on the preferences for these levels.

In terms of Step 1, the evaluation scores of nine cards have already been derived [17]. The present research commences at Step 2. Clarification of preferences at all levels allows interactions among factors to be studied. Step 3 is currently underway.

3.3. Conjoint Analysis. During conjoint analysis, it is necessary to identify casino-specific factors and the levels thereof. First the setting in which factors are derived must be chosen. We extracted words pertaining to casinos and identified four factors based on a marketing mix framework (see Table 1).

In this paper, four factors were considered based on Kotler's marketing mix [18]. The Kotler marketing mix [18] is often used to identify factors affecting product purchase or use of a service. Takeuchi et al. [23] derived a marketing mix to improve service. Text mining was applied in this context.

In this paper, three levels, corresponding to choices within each of the mentioned factors in Table 1, were set. The three levels (casino-related words) for each factor are listed in Table 2. In terms of setting the levels, we referred to an overseas report [2] on casinos commissioned by the Cabinet Secretariat.

Figure 1 shows the four factors and twelve levels (three per factor) used to describe characteristics of casinos.

Nine conjoint cards were prepared by combining the twelve levels shown in Figure 1 based on the design of experiments (DoE) [24]. Each card shows a virtual casino created by combining four of the twelve levels. In this paper, the number of cards was decided with consideration given to minimizing the burden placed on participants answering the questionnaire. Therefore, the L9 orthogonal table was used, resulting in nine cards. Table 3 shows the nine conjoint cards.

Table 1: Extraction of words expressing factors based on the four Ps.

Factor	Extraction protocol
(Place): Location	"Place" of the casino means its location. Here, the relevant term is "Location."
(Price): Restrictions on betting	Words pertaining to money are extracted and regarded as factors corresponding to "Price." Casino money matters include (principally) entrance fees and bets. Entrance fees are controlled by Japanese governmental regulations; visitors cannot choose how much to pay. Also, the casino must charge only the legal fee. Therefore, we targeted words pertaining to betting. The word "Price" can be replaced by "The size of bets." It is necessary to keep in mind that the specific rewards vary by the games played and one's success rate. Thus, it is difficult to extract level-specific words. Many subjects will not know the situation that pertains if a specific level of betting is allowed. Subjects may choose their bets freely.
(Promotion): Atmosphere	This refers to promotion within the marketing mix. The purpose of promotion is to send a message to a target customer that increases the recognition of a product or service, improves its public image, and enhances sales [18]. It is indisputable that promotion directly influences consumption; moreover, promotion can also improve brand equity [19]. Promotion should not be viewed as a short-term approach to increasing sales. Indeed, promotional efforts should enhance brand equity in the long-term [20]. For casinos, brand equity involves awareness and a positive societal image. Given our focus on brand equity, we identified "atmosphere" as being important in terms of casino image.
(Product): Operating organization	As a casino is a single product, we extracted words reflecting reliability and quality. The characteristics of a product include safety, reliability, and suitability. When choosing electrical appliances and clothes, a consumer may focus on the country of origin and the manufacturer; these represent reliability [21]. The organization managing the casino is analogous to a manufacturer. The type of organization will influence whether a prospective customer would prefer to go to a casino or elsewhere.

Table 2: Extraction protocol for words expressing levels.

Factor	Level	Extraction of levels
Location	Odaiba Shinjuku Ginza	How will location affect how local residents value the casino? We extracted words at the level of "Local." All subjects commuted to either school or work; therefore, three distinct words with different characteristics served as the levels. All subjects were familiar with the features of each place. Odaiba, which is coastal, features an exhibition hall, a hotel, and amusement facilities. Many foreign tourists visit; land is available. Shinjuku is a business district in which the Tokyo Metropolitan Government Office and many other office buildings are located. This is one of the largest entertainment districts in Japan; many people come and go around the clock. There are many restaurants, bars, and entertainment facilities. Ginza has many old department stores and modern high-end stores. Although the luxury shopping street still has an old-fashioned atmosphere, many new commercial buildings have been constructed.
Restrictions on betting	Upper limit Without limit Lower limit	We nest set the general rules of Betting. We extracted words equivalent to "Restrictions" when betting money and also words equivalent to "Without limit," indicating that the amount of money that could be bet is not controlled. The word "lower limit" was extracted based on features of overseas casinos [2].
Atmosphere	Luxury Extraordinary Entertaining	For several reasons, we extracted words corresponding to levels of atmosphere, as follows. "Luxury" was extracted given that a casino requires a great deal of investment and commitment [22]. We extracted "extraordinary" because casinos are new ventures in Japan. We extracted "entertaining" because casino visitors can enjoy games and shows.
Operating organization	Domestic companies Overseas companies Local government	Domestic companies were extracted because they seek to enter the casino business, authorized by the IR bill. Overseas companies were extracted if they currently operate casinos overseas. Local government was extracted because it already manages public gambling in Japan.

Table 3: The nine conjoint cards.

Card No.	Location	Restrictions on betting	Atmosphere	Operating organization
1	Odaiba	Upper limit	Entertaining	Local government
2	Odaiba	Without limit	Luxury	Overseas companies
3	Odaiba	Lower limit	Extraordinary	Domestic companies
4	Shinjuku	Upper limit	Luxury	Domestic companies
5	Shinjuku	Without limit	Extraordinary	Local government
6	Shinjuku	Lower limit	Entertaining	Overseas companies
7	Ginza	Upper limit	Extraordinary	Overseas companies
8	Ginza	Without limit	Entertaining	Domestic companies
9	Ginza	Lower limit	Luxury	Local government

FACTORS	LEVELS
Location	Odaiba
	Shinjuku
	Ginza
Restrictions on Betting	Upper limit
	Without limit
	Lower limit
Atmosphere	Luxury
	Extraordinary
	Entertaining
Operating Organization	Domestic companies
	Overseas companies
	Local government

Figure 1: Factors and levels.

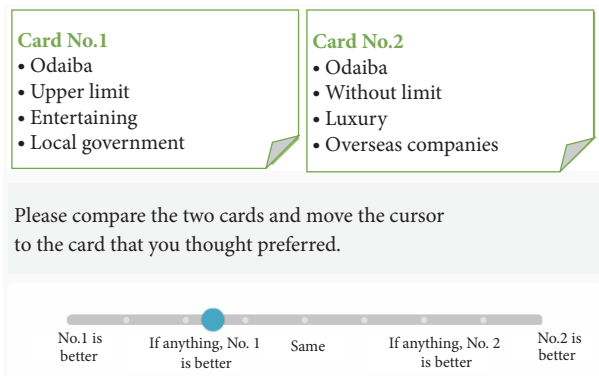

Figure 2: A sample questionnaire screen.

3.4. Survey. A web questionnaire featuring these conjoint cards was completed by 97 participants (71 males and 26 females). Twenty of the 97 reported that they had visited casinos in other countries. The study period ran for 34 days, from October 9 to November 12, 2017. A web questionnaire tool termed "Creative Survey" (https://creativesurvey.com/) was used. The target subjects were those who might visit casinos in future, particularly university undergraduate and graduate students. 20 of the 97 respondents reported experience with casinos in other countries. Thus, we focused on students, social workers, and students who were also working (all over 20 years of age).

The questionnaire survey was designed using a pairwise comparison method [25] that compared each of the nine cards shown in Table 2 with a set of two cards and then evaluated each card. The image shown in Figure 2 is a part of the screen shown as participants answered the questionnaire survey.

Subjects moved the cursor shown at the bottom of the screen to indicate which virtual casino described on the two cards (see Figure 2) was preferable. This procedure was followed for all nine cards. Using the questionnaire survey, pairwise comparisons for each card were performed 36 times by each participant.

3.5. Determining Level Preferences for the Virtual Casino by Pairwise Comparison. The definitions of symbols and equations are as in Table 4.

The evaluation scores for all cards were calculated using

$$\sum_{N=1}^{97} E_N(\alpha) \tag{1}$$

Here, (1) is expressed as

$$E_N(\alpha) = \sum_{i=1}^{9}\sum_{j=1}^{9}\left(\left(0.5 - d_{ij}\right)u\left(C_i\right) + \left(d_{ij} - 0.5\right)v\left(C_j\right)\right) \tag{2}$$

The evaluation values of conjoint cards obtained from the 97 subjects were calculated using (1) and (2), where

$$\begin{aligned} u\left(C_i\right) &= 1 \quad \text{if } 0.5 - d_{ij} > 0 \\ &\quad \text{otherwise } 0 \\ v\left(C_j\right) &= 1 \quad \text{if } d_{ij} - 0.5 > 0 \\ &\quad \text{otherwise } 0 \end{aligned} \tag{3}$$

Table 4: The definitions of symbols.

Symbols	Definition
C_i, C_j	Card i · j(i<j, 1≤i≤9, 1≤j≤9)
C_{ij}	The combination of C_i and C_j
d_{ij}	The psychological value of C_{ij} $(0 \le d_{ij} \le 1)$
N	Number of general subjects
m	Number of factors (1≤m≤4)
n	Number of levels (1≤n≤12)
$\boldsymbol{\alpha}$	Score of C_i or C_j in C_{ij}
K	Number of pairwise comparisons (1≤k≤36)
X	Sample space
x_k	One sample space $(x_k \in C_{ij})$
W	The combination of factor and level selected in X $(w_{mn} \in w(x_k))$
Z_m	Preference within each level for the factor

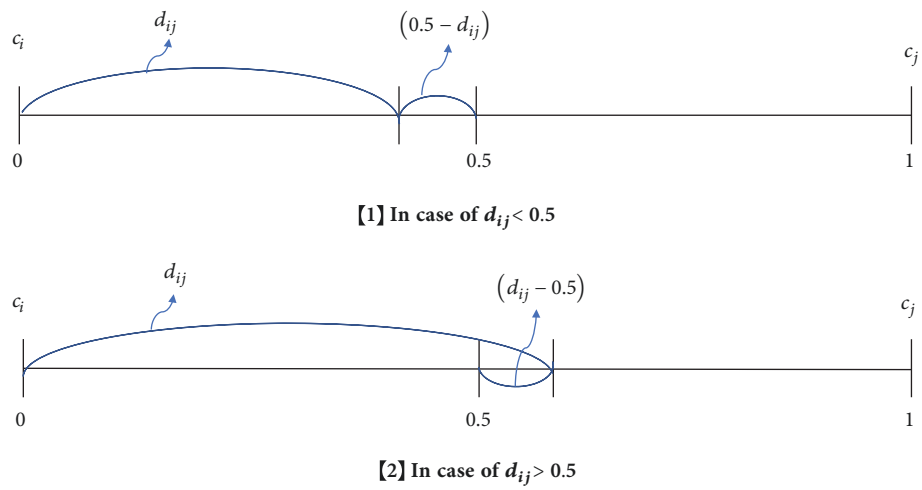

Figure 3: Process for evaluating each card by pairwise comparison.

$u(C_i)$ and $v(C_j)$ are classification functions that add scores to either C_i or C_j depending on the evaluation. The function can be described as follows (Figure 2 shows the questionnaire screen). In Figure 2, a subject moves the cursor from the center of the straight line ($d_{ij} = 0.5$) to the preferred side. For example, suppose that the subject considers Card C_j more favorable than Card C_i. In such a case, the cursor is moved from the center (same weights) to the right. Then, the d_{ij} value is the score of C_j. At this time C_i will not earn any points. Therefore, $d_{ij} = 0.5$ serves as the standard (Figure 3). We thus derived $E_N(\alpha)$.

If C_i and C_j fit into the sample space X by the *L9* orthogonal table based on the experimental design method, then one of them is $x_k \in C_{ij}$. Here, the combination of factors/levels that C_i and C_j can take is

$$\mathrm{W} = \begin{pmatrix} w_{11} & w_{12} & \cdots & w_{1\mathrm{n}} \\ w_{21} & w_{22} & \cdots & w_{2\mathrm{n}} \\ \vdots & \vdots & \ddots & w_{3\mathrm{n}} \\ w_{\mathrm{m}1} & w_{\mathrm{m}2} & \cdots & w_{\mathrm{mn}} \end{pmatrix} = w_{mn} \quad (0 \text{ or } 1), \quad (4)$$

and the preference for each level of the factor is shown below:

$$Z(x_k, w_{mn}) = \sum_{k=1}^{36} \sum_{m=1}^{4} \sum_{n=1}^{3} r w_{mn}(x_k) \quad (5)$$

In (5), "r" is a constant ($r > 0, r \in N$).

4. Results

Table 5 and Figure 4 show the results of conjoint analysis of the data obtained from the questionnaire. Ones' preference of all levels is depicted in both Table 5 and Figure 4 in a different way of expression. It is to be noted that the detailed values of ones' preference level calculated by (1), (2), and (5) are shown in Table 5, while the values of ones' preference level that are sorted in descending order is shown in Figure 4. It is supported to grasp at a glance on which level is the most popular among all the levels or which level is unpopular in Figure 4, which might be also referred to ones' preference order of the levels in the following chapter of discussion. Here, the preference for a given level of the virtual casino on each card was calculated in accordance with the

Table 5: Total level preferences for each factor.

Odaiba	**Shinjuku**	**Ginza**
338.4686	271.3594	252.3474
Upper limit	**Without limit**	**Lower limit**
330.7007	284.4942	241.9833
Luxury	**Extraordinary**	**Entertaining**
315.3692	296.2845	259.6396
Domestic companies	**Overseas companies**	**Local government**
311.3518	295.8827	264.0589

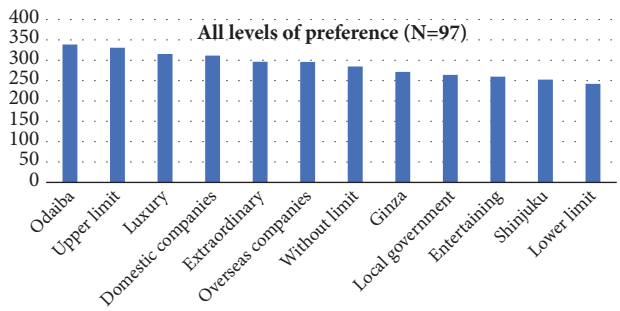

Figure 4: All levels of preference (N = 97).

procedure described in the fifth section of the third chapter (Experimental details; Determining level preferences for the virtual casino by pairwise comparison).

We now briefly summarize the results. Of the 12 levels, "Odaiba" was most favored. The, preferences for Shinjuku and Ginza were lower (Figure 4). "Location" significantly affected the level preferences as shown by the large variations in preferences among factors. Thus, location would greatly affect the decision to visit a casino. Also, levels allowing facile visualization of what is to be expected (such as "upper limit" and "luxury") were strongly preferred. We will discuss this in detail in the next chapter.

5. Discussion

This section addresses the question of how words expressing the level described on a highly rated card (i.e., the concept of a casino preferred by people) influenced casino preferences. Card X, which is thought to be the most preferred among the nine cards, was prepared by extracting the highest preference level for each factor one by one (see Figure 4). To assess the preference for all cards covering each of the three levels with respect to the four factors, 81 (= 34) cards must be compared one by one. However, in this paper, as cards were prepared based on DoE, the preference for all levels was assessed with only nine cards [24]. Therefore, Card X, which was not shown in the questionnaire, was prepared in this section. Figure 5 shows the procedure for preparing Card X, which incorporated the most preferred levels for each of the factors.

Furthermore, we extracted the lowest preference level of each factor to create Card Y. Figure 5 shows how we extracted highly preferred factors from each level. Using the same procedure, we extracted the least preferable level for each factor. Figure 6 shows card Y^1.

Based on cards X and Y described in Figures 5 and 6, we now focus on three points. First, we compare X, which features the highest standards for all factors, and card 2^1.

We next discuss card X per se, created on the basis of our results (see fourth chapter; the Result and Figure 5). We explain why four standards (Odaiba, upper limit, luxury, and domestic companies) were preferred; we refer to the nature of human decision-making described in the second section of this chapter.

Finally, to support the decision-making of subjects mentioned in the second section of this chapter, two new pairs of cards are compared with the aid of card Y. We then discuss words that should be employed in casino marketing strategies.

5.1. A Comparison between Two Cards with High Ratings. Figure 7 shows a comparison between Card X, configured with high preference levels, and Card No. 2, which had the highest evaluation rank in a previous study [17]. Calculation of the evaluation score for Card No. 2 was based on (1) and (2) and Figure 3 in the fifth section of third chapter (Experimental Details).

First, when comparing each level between the two cards shown in Figure 7, the levels of the location/atmosphere factors are common to both cards, i.e., Odaiba/luxury. Regarding the location, Odaiba is located on the waterfront alongside features of the coastal area, such as exhibition halls and large accommodation facilities. Therefore, Odaiba is preferred because it appears to be a suitable place for a casino. As a result, a positive impression, as expressed in language such as "gorgeous" and "similar to an overseas resort including a casino," is implied by the phrase "a casino in Odaiba" and it is therefore thought to be preferable.

Regarding the atmosphere, we considered that many participants judged that a feeling of luxury, related to the casino's roots [22], was the most preferable atmosphere. Even without knowing the historical background of a particular casino, the impression "casino = luxury" may have been created among participants. The word "luxury" appeared to imply a strong positive impression when compared to the other levels. For example, if the word "extraordinary" space gave the impression of a facility that small children would enjoy, such as the Tokyo Disney Resort, this may have been regarded as incompatible with a casino. The word "entertaining" was also seen as potentially carrying a wide

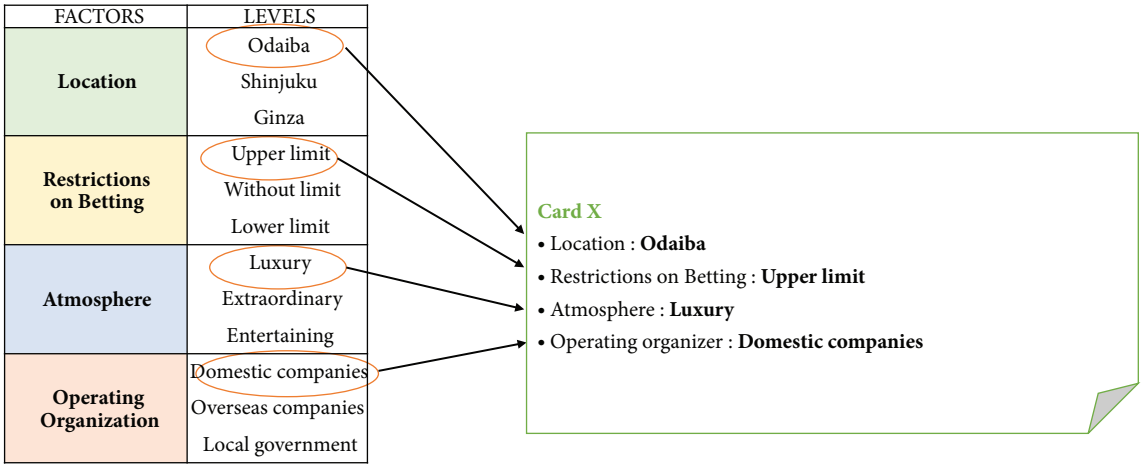

Figure 5: Preference for each factor based on the highest preference scores (Card X).

Figure 6: Preference for each factor based on the lowest preference scores (Card Y).

range of meanings. If the word "entertaining" were linked to the casino, the resulting impression may have been a negative one, associated with a place that is noisy or not elegant. Based on these results, it is speculated that it would be necessary to design a casino that offered a high-class atmosphere and high-quality hospitality if it were to become a preferred casino with a sense of luxury in Japan. In addition, it would be necessary to attract overseas luxury hotel chains to Japan and to share service know-how so as to provide high-quality customer service and a high level of service generally. This would make it possible to develop management strategies for the casino that would maintain a feeling of luxury. In any case, these considerations suggest that, by designing "a special place with a high-class feeling," such a casino would be preferred on the part of many Japanese people.

Second, these results indicated preferences for operating organizers who were well established as private enterprises, whereas casinos operated by local governments were not preferred. We considered that local governments were not favored as operating organizers because the pairing of the word "casino" with "local government" might invoke negative impressions of existing public gambling operations in Japan. In fact, some have pointed out that profits derived from public sporting events in Japan have peaked and are now in decline; these events no longer make major contributions to the exchequer [26]. Recently, many local governments have expressed concern about their financial situations; some are already bankrupt. In other words, Japanese public sports, originally viewed as social events enriching municipalities, are now driving municipalities into deficit. Thus, municipalities may not be trusted to run gambling facilities efficiently. In this context, casinos could be regarded negatively due to their association with images of existing public gambling features such as aging facilities, deficits, and gambling dependence. Thus, the results indicate that, to operate the casino most preferred by people in Japan, it will be necessary for companies that already operate overseas casinos to cooperate with companies aggressively entering this new market in Japan. Specifically, it will be necessary to formulate alliances between casinos operated in Japan and overseas casinos and to create a network of cooperation with casinos already in operation abroad. In this way, it would be possible to connect Japanese casinos to the peace of mind and pleasure of playing found in overseas casinos.

Finally, consideration was given to restrictions on betting, focusing on the presence or absence of an upper limit. Regarding restrictions on betting, preferences varied widely among participants. However, it can be inferred that language indicating that there is an upper limit may have evoked a sense of security. The following is an example of how a visitor might participate in gambling while maintaining a certain sense of security. When the casino has an upper limit, this limit indicates the amount of funds owned by the casino. In some cases, such a limit may increase anxiety about betting using IT technology, if, for example a comprehensible warning about excessive betting is issued. Moreover, although betting is not restricted, IT is now applied in casinos. For example, RFID tags have been inserted into genuine chips to distinguish them from fakes at the cashier's desk [27]. Casino visitors will appreciate such security, realizing that casinos deal with large amounts of money and must implement strict security checks. Even non-visitors may feel that IT usage renders the casino safer; perhaps they will then visit. Alternatively, it may be reasonable to consider a mechanism that restricts betting based on the participant's own financial margins and betting habits. For example, the upper limit might be divided into several stages, and the return can be considered based on an amount commensurate with

Figure 7: Comparison between two cards with high rating scores.

the upper limit. In any case, the word "upper limit" as an expression of restrictions on betting probably increases people's preference for a casino.

5.2. Consideration of the Four Most Favorable Levels. People make decisions within the framework of limited rationality [28]. People seek to be maximally rational, but their capacity to consider everything relevant may be compromised. Therefore, all decisions are partly irrational [29]. The lack of rationality is explained by the availability heuristic [30] and the representative heuristic [31]. The availability heuristic, in particular, features recall of familiar matters (because of physical closeness or via reports), impacting decision-making, as is evident in the preferences that we found. Card X reported the following data: location: Odaiba, restrictions on betting: upper limit, atmosphere: luxury, and operating organization: domestic companies. For each factor, it appeared that these four levels were selected because the availability heuristic was in play when subjects expressed their preferences.

Odaiba was the preferred location. In Japan, the casino bill was submitted to the Diet in 2013, and the government then implemented the "Improvement of the Base for International Tourism in a Near-Tokyo Seaside Sub-City (Odaiba Area)." In addition, some media reported that very large Japanese real estate enterprises and construction companies would participate in the project, creating the Odaiba Casino [32]. Although the bill introduced in 2013 was later abandoned, many news reports on the bill raised the level of public interest. Simply put, the idea that "Japanese mega-companies will build casinos in Odaiba" entered peoples' minds. Then, based on the availability heuristic, which commences with familiar objects, it became more likely that location: Odaiba and operating organization: domestic companies would be chosen.

The same pattern can be seen in terms of betting restrictions and "atmosphere". An upper limit on betting was favored. Many may be of the view that betting restrictions would prevent continuous betting. If gambling were in fact to be compulsorily halted, gamblers cannot continue. However, what if the maximum bet is so high that it is seldom attained? Perhaps some gamblers will continue because they simply have not reached the limit. Thus, a lower limit may be preferable; this would attract tourists who want to try some games just for fun. Therefore, the betting system will depend on what individuals actually want. Imposing a bet limit was favored partly because of frequent reports on casino rules overseas, such as limitations on entry and maximum withdrawals from teller machines [2]. Rather than winning percentages, or how much must be spent to improve the chances of winning, regulations [31] and standards described using familiar words [30] were the foci of attention of most subjects.

5.3. Supporting the Level Evaluation Process. In the first section of this chapter, we compared two cards featuring high preference levels. In addition, in the second section of this chapter, we discussed why four levels (Odaiba, Upper limit, Luxury, and Domestic companies) were highly preferred. We mentioned that a natural heuristic was in play. Here, we compare two new pairs of cards to amplify the discussion of the previous chapter. We first compare cards No. 6[2] and card Y. Figure 6 refers to card Y.

We next compare cards X and Y, which were created by reference to the level selection order. When we compare these two pairs, we discuss the optimal words of casino marketing proposals.

Figure 8 compares card No. 6, which was least evaluate and card Y (featuring low preference levels).

The cards shown in Figure 8 are identical except for the operating organization. This shows that casino evaluations were made at three levels, Shinjuku, entertainment, and the lower limit of betting. As Table 2 indicated earlier, Shinjuku has two aspects; safety is of concern because Shinjuku has a large red-light district. Also, an illegal casino discovered in Shinjuku was reported in the media; thus, the phrase "Casino located in Shinjuku" might have negative connotations. Also, the combination "Shinjuku" and "entertaining" may have created negative images. Of course, Shinjuku is not the only place where public safety is of concern. However, Shinjuku is a famous red-light district, and illegal casinos and restaurants are sometimes reported in the media. Thus, the combinations of words on cards Y and No. 6 created a poor impression. We expect that subjects associated illegal casinos with these cards and that availability heuristics [30] affected the preferences.

Cards No. 2 and X were in terms of desirable (Figure 7) and unwanted casinos. Cards No. 6 and X have also been compared (Figure 8). Here we compare cards X and Y, given our outcomes. By comparing conflicting cards, we can discover how society views casinos. Figure 9 shows cards X and Y.

As shown in Figure 9, cards X and Y differ markedly in their combinations of levels.

Card X features the most favorable levels and Card Y the least favorable levels. Heuristics markedly influence

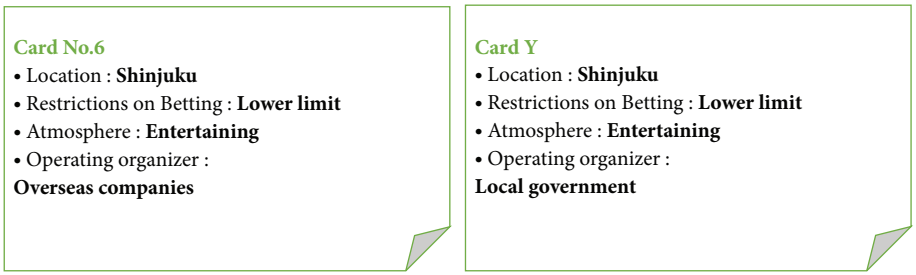

Figure 8: A comparison between two cards with low rating scores.

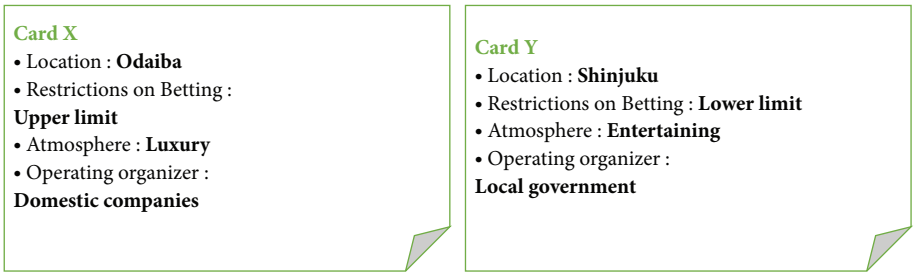

Figure 9: A comparison of two conflicting cards.

evaluation, regardless of the cards per se. Decision making may thus be based on heuristics. As shown in Figure 9, the words on Card X were familiar casino-related words. Especially, "Luxury," which described the atmosphere, imparted a positive impression. In contrast, we assume that the words on Card Y were less acceptable, given earlier widely reported negative incidents. On Card Y, furthermore, the combination of "entertaining" and "Shinjuku" created an image of an unsafe red-light district. Thus, even words that do not express emotions (such as place words and words imparting restrictions) in fact create emotions, depending on their combinations. Therefore, we conclude that outcomes will differ even among evaluations based on the same heuristics. If so, it is necessary, initially, to increase casino awareness in Japan by using familiar casino-related words that subjects associate with positive feelings.

As shown in Figure 9, "Atmosphere" was readily reflected by "Luxury", given the history of casinos [22]. Thus, it will be possible to improve casino recognition in Japan by optimizing the human decision-making process, by familiarizing people with casino-related words. Casinos will gradually become more accepted, as will their business enterprises (well-known casino organizers); media reports will increasingly use words emphasizing the high standards to which casinos are held. Matsui [33] studied the interactions between words and marketing. Marketing generates new words; the spread of trending keywords enhances marketing. More particularly, "keyword of generation" created by a marketer can logically fill the needs of consumers, eventually strengthening the new word-based trend. Japan currently lacks casinos, and few people are familiar with overseas casinos. It is important to improve casino recognition; marketers must create the trend by using terms associated with casinos in an environment where people will be likely to hear those terms.

6. Conclusion

In this paper, 97 participants evaluated virtual casinos using conjoint cards, providing information on their preferences in relation to various characteristics of casinos. In addition, we considered qualities associated with high levels of preference and the manner in which words depicting those qualities may have influenced participants' impressions of the casino.

This study has several limitations. First, only 97 participants were included, making it a small-scale survey. The participant characteristics were also limited, and it is understood that the results obtained from this questionnaire survey are only applicable to a very limited situation. The numbers of factors and their levels were also limited to reduce the burden on the participants, so not all casino and IR facilities were covered. In the future, it will be necessary to consider ways to evaluate further people's impressions of casinos by setting more factors and levels and, thereby, evaluating more words related to casinos.

Data Availability

The .xlsx data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

The authors would like to express their sincere gratitude to all 97 individuals who participated in the survey.

Endnotes

1. Card No. 2 of the nine cards received the most evaluations [17].
2. Card No. 6 of the nine cards received the least evaluations [17].

References

[1] K. Kitagawa, T. Naito, and K. Terada, "POlysemy of light in text description of buildings," *Journal of Architecture and Planning (Transactions of AIJ)*, vol. 77, no. 680, pp. 2345–2353, 2012.

[2] KPMG AZSA LLC, Overseas case study report on Specified Integrated Resort Facilities, 2015.

[3] Y. Masuko, "Structural change in the Macau casino industry -In reference of open-door policy to unvested capital from abroad," *Journal of Japan Society for Global Social and Cultural studies*, vol. 13, no. 1, pp. 26–36, 2016.

[4] I. Tanioka, *Attitude toward the legalization of casino gaming in Japan: The difference in regions, urbanization levels, and by socio-economic background*, vol. 3, Institute of Social Science University of Tokyo, 2014.

[5] Japan Productivity Center, *Leisure Hakusho 2017*, vol. 2, 2017.

[6] K. Tanaka and Y. Kanda, "Reserch of people's image changing towards public works," *Journal of Japan Society of Civil Engineers, Ser. F4 (Construction and Management)*, vol. 69, no. 4, pp. 1–7, 2013.

[7] A. Daswani and G. Choi, "Global gaming rising sun to outshine Vegas: Japan set to launch casinos," *Citi Research Global Gaming*, pp. 3–35, 2013.

[8] E. L. Grinols, *Gambling in America: Costs and Benefits*, CBG: Cambridge University Press, 2016.

[9] H. A. Simon, *Administrative behavior: A study of the decision-making process in administrative organization*, The Free Press, New York, NY, USA, 1997.

[10] K. H. Yen and K. L. Che, "Empirical examination of AHP and conjoint analysis on casino attributes in Macau," in *Proceedings of an International Conference on Public Welfare and Gaming Industry, Beijing*, pp. 327–350, 2010.

[11] K. Fujiwara, A. Yagahara, G. Inoue, T. Kitagawa, and K. Ogasawara, "Investigation of Preferences in Working Environment of Radiological Technologists Using Conjoint Analysis," *Japanese Journal of Radiological Technology*, vol. 73, no. 8, pp. 626–635, 2017.

[12] M. Matsushita, K. Harada, and T. Arao, "Incentive program to strengthen motivation for increasing physical activity via conjoint analysis," *Japanese Journal of Public Health*, vol. 64, no. 4, pp. 197–206, 2017.

[13] K. F. Gough, "The influence of casino architecture and structure on problem gambling behavior," in *Proceedings of the ECRM2015-Proceedings of the 14th European Conference on Research Methods for Business and Management Studies*, pp. 66–73, 2015.

[14] S. Iyengar, *The art of choosing*, Grand Central Publishing, New York, NY, USA, 2011.

[15] T. Kan, *Excel ensyu de manabu tahennryou kaiseki - kaiki bunnsekihannbetsu bunnsekiconjoint bunnseki henn- [Multivariate analysis learned by Excel exercises-Regression analysis-discriminant analysis-conjoint analysis] , Tokyo: Ohmsha*, Ohmsha, Tokyo, 2016.

[16] K. Takemura, R. Higurashi, and Y. Tamari, "Cognitive effort accuracy of decision strategies in multi-attribute decision-making process: A behavioral decision theoretic approach using computer simulation technique," *Cognitive Studies*, vol. 22, no. 3, pp. 368–387, 2015.

[17] N. Komiya and J. Nakamura, "A study on cognitive improvement and evaluation of casinos in Japan using conjoint cards," *Technical Report of IEICE*, vol. 117, no. 440, pp. 21–26, 2018.

[18] P. Kotler, *Kotler on Marketing: How to create, win and dominate markets*, The Free Press, New York, NY, USA, 1999.

[19] D. A. Arker, *Managing Brand Equity*, The Free Press, New York, NY, USA, 1991.

[20] T. Kobayashi, "Brand-based marketing: the effect of a hidden marketing system," *The Business Review*, vol. 49, no. 4, pp. 113–133, 1999.

[21] K. I. Al-Sulaiti and M. J. Baker, "Country of origin effects: A literature review," *Marketing Intelligence & Planning*, vol. 16, no. 3, pp. 150–199, 1998.

[22] J. R. Strauss, *Challenging Corporate Social Responsibility*, Routledge, 2015.

[23] H. Takeuchi, Y. Sugiyama, C. Ota, and T. Yamaguchi, "Marketing analysis using marketing mixture and text mining," in *Proceedings of the The 24th Annual Conference of the Japanese Society for Artificial Intelligence*, pp. 1–4, 2010.

[24] M. Sueyoshi, *Excel business toukei bunnseki[Excel business statistical analysis]*, Shyoeisya, Tokyo, 2017.

[25] H. Takagi, "Practical statistical tests: machine learning (3) Significance tests for human subjective tests Systems," *Control and Information*, vol. 58, no. 12, pp. 514–520, 2014.

[26] H. Fukui, "Formation and prospects of public competition: Focusing on motorboat races," *Hosei University Repository Public Policy and Social Governance*, vol. 5, pp. 149–163, 2017.

[27] M. Takahashi, "RFID Tag Antennas," *IEICE Communications Society Magazine*, vol. 2008, no. 7, pp. 7_51–7_58, 2008.

[28] H. A. Simon, *A Behavioral Model of Rational Choice*, Wiley, New York, NY, USA, 1957.

[29] M. H. Bazerman and D. A. Moore, *Judgment in Management Decision Making*, Wiley, New York, NY, USA, 2008.

[30] A. Tversky and D. Kahneman, "Availability: a heuristic for judging frequency and probability," *Cognitive Psychology*, vol. 5, no. 2, pp. 207–232, 1973.

[31] A. Tversky and D. Kahneman, "Judgment under uncertainty: heuristics and biases. Biases in judgments reveal some heuristics of thinking under uncertainty," *Science*, vol. 185, no. 4157, pp. 1124–1131, 1974.

[32] J. Fujita and N. Lane, "Mitsui-fudosan Fuji-television Kajima, Daiba de casino kensetsua teian Mitsui fudosan Fuji-television Kajima, casino construction proposal in Daiba," *Reuters*, 2013.

[33] T. Matsui, "Language and marketing: A text analysis of the dynamic change of the shared cognition on "healing" in Japan between 1998–2007," *Organizational Science*, vol. 46, no. 3, Article ID 19982007, pp. 87–99, 2013.