Original Article

A study on factors attracting customers to tourist facilities during the COVID-19 pandemic

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Abstract
The coronavirus disease 2019 (COVID-19) pandemic has restricted the movement of people globally and has had a negative economic impact on many industries, such as the restaurant and tourism industries. However, the expansion of the concept of "living with COVID-19" is increasing the number of visitors to restaurants and tourist facilities. The purpose of this study is to derive the tourist awareness factors that attract customers to tourist facilities. This study focused on ski resorts as one of the tourist facilities. The primary awareness factors were investigated using a survey. The factor analysis revealed that tourists outside the prefecture with high anxiety levels concerning COVID-19 showed negative awareness of infection control measures, such as "Social Distancing," "Disinfection," and "Ventilation" in ski resorts.

Keywords
COVID-19 pandemic, attracting customers, ski resort, survey, factor analysis

1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic has restricted the movement of people around the world and has had a negative economic impact on many industries [JTA, 2021; METI, 2020], especially, the restaurant industry, where people gather, and the tourism industry, which involves the movement of people. This has resulted in difficulties in managing companies [MLIT, 2021]. For example, it has been reported that the number of bankruptcies due to the COVID-19 pandemic accounts for 45.5 % of the total number of bankruptcies in the restaurant industry for the period from January to May 2021. Furthermore, in May 2020, it was reported that the number of reservations in the travel industry decreased by 99 % compared to the same month of the previous year [TSR, 2021]. Consequently, the spread of infection control measures against COVID-19 and the expansion of the concept of "with COVID-19" has increased the number of visitors to restaurants and tourist facilities. However, people's anxiety pertaining to being infected with COVID-19 has not subsided; therefore, the infection control measures at each facility have become crucial for visitors. In general, the recommended infection control measures against COVID-19 include "droplet prevention," "alcohol disinfection," and "ventilation" [MHLW, 2022]. Considering "cost-effectiveness" and "time and effort," it is not always possible to take measures against infection. Additionally, although there are studies on surveys of intentions to travel [Furuya, 2021; Japan Travel Bureau Foundation, 2021; 2022], few surveys on COVID-19 countermeasures are available for users when using facilities. Therefore, this study focused on "Awareness of people who have COVID-19 anxiety, but still go to sightseeing areas." It was also assumed that these awareness factors are the factors that attract customers to tourist facilities, and the purpose was to derive the awareness factors using a survey. However, these awareness factors are not necessarily determined by infection control measures. Therefore, in this study, a survey was conducted based on the existing tourism factors of ski resorts, at a resort that is attracting attention from inbound tourists [Nagura, 2017; Yoshizawa, 2019].

2. Outline of the survey

2.1 Creating items for the survey

In this section, the creation procedure of the questionnaire items is derived. The survey items were discussed in a working group focusing on the skier and ski resort staff as follows.

- Brainstorming sections were conducted on the following question: "What is your image associated with a ski resort before and after COVID-19 pandemic?" As a result of brainstorming, 78 question items were selected.
- A fishbone diagram using these question items was created by the working group. As a final result, 17 items were selected as questionnaire items.

The survey in this study was conducted using these items. In the next section, details of the survey items are described.

2.2 Items of the questionnaire

In this section, the questionnaire items are derived. The survey was conducted to collect awareness data of tourists for a ski resort in terms of the COVID-19 pandemic. The questionnaire comprised 24 items: 5 focused on basic information about the tourist (items 1-5), 2 items focused on the anxiety surrounding the COVID-19 pandemic (items 6-7) and 17 items focused on the tourist's awareness in terms of the ski resort due to the COVID-19 pandemic (items 10-17).

First, question items on the basic information of tourists

were shown as follows.

Please provide us with basic information.
- Item 1: Please provide us with your gender
- Item 2: Please provide us with your age
- Item 3: Please provide us with your profession
- Item 4: Please provide us with your number of visits to this ski resort
- Item 5: Please provide us with your place of residence (inside and outside Yamagata Prefecture)

Next, question items on anxiety in terms of the COVID-19 pandemic were as follows.

How do you feel about the COVID-19 pandemic? Please select one of the following: "extremely anxious," "slightly anxious," "neither," "slightly not anxious," or "extremely not anxious.
- Item 6: Are you anxious about being infected with COVID-19?
- Item 7: Are you anxious about being infected with COVID-19 at the ski resorts?

Finally, question items on the tourist's awareness in terms of a ski resorts during the COVID-19 pandemic were shown as follows.

What are your levels of awareness in terms of a ski resort regarding the following 17 items? Please select one of the following: "Extremely agree," "Slightly agree," "Neither," "Slightly disagree" or "Extremely disagree."
- Item 8: Inexpensive ski entrance fee
- Item 9: Delicious food at the restaurant
- Item 10: Many events are held
- Item 11: The ski resort is safely maintained
- Item 12: Equipment is frequently disinfected
- Item 13: Good snow quality
- Item 14: Payment for ski resort entrance fees and lift fees without contacting staff e.g., through a payment machine
- Item 15: One can maintain a distance from other people as the resting areas
- Item 16: Good hospitality
- Item 17: The weather is stable
- Item 18: Thorough infection control measures for staff
- Item 19: The rest area is well ventilated
- Item 20: Distance skiing possible
- Item 21: The parking lot is close to the slopes
- Item 22: Thorough disinfection and temperature measurement for customers
- Item 23: Good access from major cities
- Item 24: Less contact with the staff

2.3 Survey methods

In this section, survey methods are described. The survey was conducted from February 1 to 28, 2022 for tourists who consented to the survey at a ski resort in Yamagata, Japan. The characteristics of the ski resort at which this study was carried out are as follows:

- Location: Yamagata, Japan
- Staff composition: manager (1), safety management staff (5), customer service staff (6), restaurant staff (5)
- Number of courses: 6 courses (Beginner to advanced)
- Location altitude: 700m to 880m
- Parking lot: 350 spaces

Other features: Suitable for families, night skiing, ski lessons, many events, restaurant and shuttle bus service

3. Results of the survey

3.1 Summary of survey results

In this section, a summary of the survey is described. A total of 190 questionnaires were collected after completion (valid response rate: 92.2 %). Figure 1 shows the residential (inside and outside Yamagata Prefecture) composition of the respondents (item 1). As shown in Figure 1, the respondents included 157 (82.63 %) people inside the prefecture and 33 (17.37 %) people outside the prefecture. Figure 2 shows the aggregate results of anxiety levels in terms of potential infection with COVID-19 of the respondents (item 2). As shown in Figure 2, The respondents included 83 (43.68 %) respondents in Extremely anxious, 77 (40.53 %) respondents in Slightly anxious, 11 (5.79 %) respondents in Neither, 14 (7.37 %) respondents in Slightly not anxious, and 5 (2.63 %) respondents in Extremely not anxious.

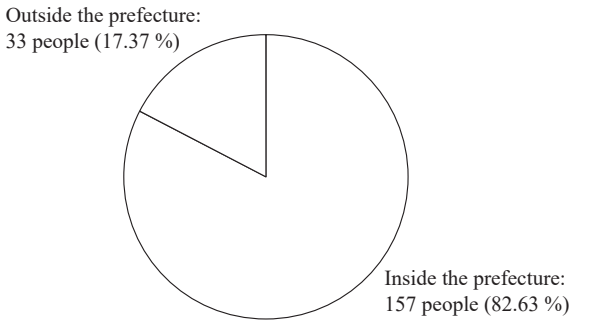


Figure 1: Inside and outside the prefecture distribution of respondents

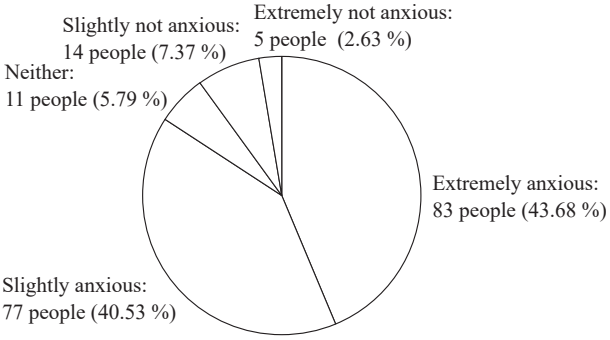


Figure 2: Anxiety level in terms of infection with COVID-19

Table 1: Relationship between inside and outside the prefecture, and anxiety level in terms of infection with COVID-19

	Extremely anxious	Slightly anxious	Neither	Slightly not anxious	Extremely not anxious
Inside the prefecture	70 (36.84 %)	65 (34.21 %)	7 (3.68 %)	10 (5.26 %)	5 (2.63 %)
Outside the prefecture	13 (6.84 %)	12 (6.32 %)	4 (2.11 %)	4 (2.11 %)	0 (0 %)

The relationship between residence and anxiety level in terms of being potentially infected with COVID-19 is shown in Table 1. As shown in Table 1, it was shown that both people inside and outside the prefecture had high anxiety levels in terms of being potentially infected with COVID-19.

3.2 Derivation of factors for attracting customers to tourist facilities

In the previous section, the characteristic tendencies of the level of anxiety in terms of being infected with COVID-19 among people inside and outside the prefecture were described.

In this section, the main factors for attracting customers to ski resorts during the COVID-19 pandemic were examined using the results of the survey. The main awareness factors influencing customers to be attracted were derived by applying factor analysis to the results of the survey (items 8-24). As shown in Table 2, a value of 5 was assigned to the answer "Extremely agree." A factor analysis was then performed using these assigned numerical data with, SPSS28.

To classify tourists according to their level of anxiety about being infected, they classified extremely anxious and slightly anxious into an anxiety group. Also, they classified neither, slightly not anxious, and extremely not anxious into a non-anxiety group.

Table 2: Data converted into numerical data

Results	Numerical data
Extremely agree	5
Slightly agree	4
Neither	3
Slightly disagree	2
Extremely disagree	1

3.2.1 Characteristics of the derived factors in all tourists

In this section, characteristics of the derived factors in all tourists are described. We examined the characteristics of the factors derived from the factor analysis using principal axis factoring and varimax rotation. The obtained results and scree plot based on the analysis are shown in Table 3 and Figure 3, respectively. They reveal that four factors were estimated from this analysis that attract customers to tourist facilities. The number of factors was estimated by focusing on the flat points of the scree plot with reference to a previous study [Kozu, 2020]. Also, the four factors derived from all tourists were named. The results of the factor scores' coefficient matrix for all tourists are shown in Table 4. As shown in Table 4, factor 1 affected items 12, 13, 16, 18, 19, 20, and 22. These question items included keywords such as "snow quality" and "disinfection of equipment and ventilation in rest areas." Therefore, factor 1 was named "Safety and Disinfection/Ventilation" in this study. Factor 2 affected items 8, 9, 10, 11, and 17. These question items included keywords such as "many events" and

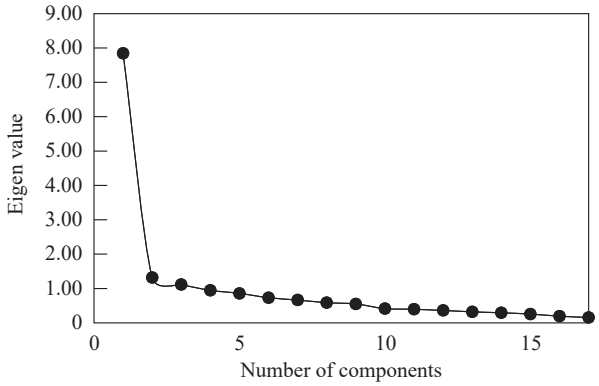


Figure 3: Scree plot obtained by a factor analysis

Table 3: Results of a factor analysis

Conponents	Eigenvalue	Variance (%)	Cumulative variance (%)	Commonality
1	7.842	46.129	46.129	0.801
2	1.317	7.750	53.878	0.705
3	1.114	6.550	60.429	0.753
4	0.947	5.570	65.999	0.619
5	0.858	5.045	71.044	0.565
6	0.732	4.304	75.348	0.531
⋮	⋮	⋮	⋮	⋮
17	0.154	0.908	100.000	0.606

Table 4: Results of factor scores coefficient matrix

Items questioned		Factors			
		1	2	3	4
Item 19:	The rest area is well ventilated	0.775	0.307	0.236	0.225
Item 12:	Equipment is frequently disinfected	0.697	0.391	0.177	0.189
Item 18:	Thorough infection control measures for staff	0.627	0.354	0.345	0.340
Item 13:	Good snow quality	0.602	0.436	0.117	0.231
Item 22:	Thorough disinfection and temperature measurement for customers	0.523	0.259	0.387	0.274
Item 20:	Distance skiing possible	0.502	0.252	0.126	0.446
Item 16:	Good hospitality	0.471	0.388	0.303	0.367
Item 10:	Many events are held	0.286	0.720	0.212	0.017
Item 17:	The weather is stable	0.251	0.587	0.176	0.295
Item 9:	Delicious food at the restaurant	0.350	0.556	0.111	0.203
Item 11:	The ski resort is safely maintained	0.408	0.503	–0.053	0.389
Item 8:	Inexpensive ski entrance fee	0.157	0.231	0.113	0.219
Item 15:	One can maintain a distance from other people as the resting areas	0.522	0.226	0.562	–0.087
Item 14:	Payment for ski resort entrance fees and lift fees without contacting staff e.g., through a payment machine"	0.456	0.245	0.555	–0.067
Item 21:	The parking lot is close to the slopes	0.110	0.255	0.492	0.244
Item 23:	Good access from major cities	0.040	–0.013	0.390	0.129
Item 24:	Less contact with the staff	0.147	0.152	0.194	0.723

Note: Cronbach's alpha = factor 1: 0.92, facotor 2: 0.75, facotor3: 0.68.

Table 5: Named component

	Named
Factor 1	Safety and Disinfection/Ventilation
Factor 2	Additional Services
Factor 3	Social Distancing
Factor 4	Convenience

"delicious food." Therefore, factor 2 was named "Additional Services." Factor 3 affected items 14, 15, 21, and 23. These question items included keywords such as "distance from other people" and "less contact." Therefore, factor 3 was named "Social Distancing" in this study. The last factor, Factor 4 affected items 24. These question items included keywords such as "Proximity to parking lot." Therefore, factor 4 was named "Convenience." The named factors are summarized in Table 5. In the next section, the characteristics of the derived factors at anxiety level of infection with COVID-19 are described.

3.2.2 Characteristics of the derived factors anxiety level related to infection with COVID-19

In this section, characteristics of the derived factors at anxiety level related to infection with COVID-19 are derived. As described in the previous section, the number of factors was estimated, and the factors were named. Four factors derived in an anxiety group were named. Factors 1, 2, 3 and 4 were named "Social Distancing and Disinfection/Ventilation," "Safety," "Additional Services" and "Convenience." Also, four factors derived a non-anxiety group were named. Factors 1, 2 and 3 were named "Additional services and Disinfection/Ventilation," "Safety and Convenience" and "Social Distancing." The named factors are summarized in Table 6.

Table 6: Named component at anxiety level pertaining to infection with COVID-19

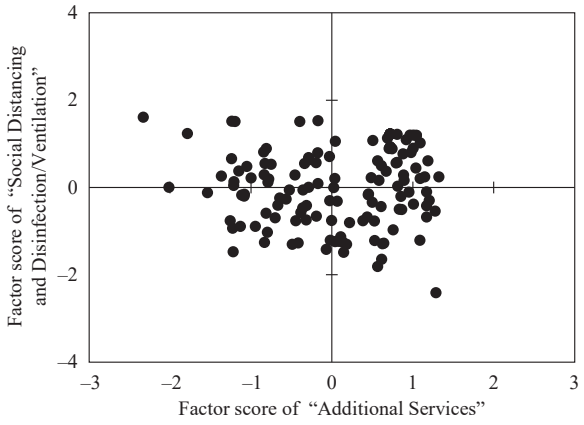
	A group concerned about infection	A group that doesn't care about infection
Factor 1	Social Distancing and Disinfection/Ventilation	Additional services and Disinfection/Ventilation
Factor 2	Safety	Safety and Convenience
Factor 3	Additional Services	Social Distancing
Factor 4	Convenience	–

3.2.3 Results of the relationship between each factor and people inside and outside the prefecture in an anxiety group

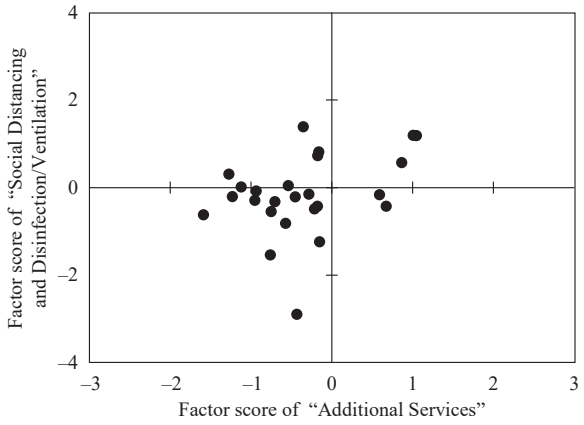
This section contains results of the relationship between each factor, and people inside and outside the prefecture in an anxiety group. The factor scores, and background of tourists according to which they were classified corresponding to their survey responses are shown in Table 7. The relationship between each factor and people inside and outside the prefecture was examined using the factor score of the respondents. The characteristic contents are shown in Figure 4. As shown in Figure 4, although there is a difference in sample size, the characteristic tendencies of respondents in the internal group are not revealed, and they were revealed for respondents in people outside the prefecture. As shown in Figure 4 (b), 16 out

Table 7: An excerpt of the relationship factor scores of each response and number of visits

Answer No.	Factor 1	⋯	Factor 5	Number of visits
1	1.0286	⋯	0.6428	second time or more
2	1.1353	⋯	–0.0072	first time
3	0.8286	⋯	0.1009	second time or more
4	0.2081	⋯	0.1858	second time or more
5	–0.2055	⋯	0.2061	second time or more
⋮	⋮	⋮	⋮	⋮
190	1.6010	⋯	0.5815	under 30 min



(a) People inside the prefecture



(b) People outside the prefecture

Figure 4: Relationship between "Social Distancing and Disinfection/Ventilation" and "Additional Services" in the anxiety group

of 25 respondents in people outside the prefecture of an anxiety group showed negative factor scores for "Social Distancing and Disinfection/Ventilation." Also, 21 out of 25 respondents in people outside the prefecture of an anxiety group showed negative factor scores for "Additional Services."

4. Conclusion

In this study, in order to improve the number of visitors to tourist facilities during the COVID-19 pandemic, the main factors for tourists' awareness of tourist facilities were estimated, targeting ski resorts. Also, the characteristics of factors for tourists' awareness of tourist facilities were derived and tourists classified into an anxiety group and a non-anxiety group. A total of 190 questionnaires were collected after completion (valid response rate: 92.2 %). In the case of all tourists, factor analysis estimated four factors such as Safety and Disinfection/Ventilation (factor 1), Additional services (factor 2), Social Distancing (factor 3) and Convenience (factor 4). These results reveal that tourists tended to have a high awareness level of infection control such as "Safety and Disinfection/Ventilation," but a low awareness level of infection control such as "Social Distancing." It can be considered that this is influenced by the fact that the ski resort is outdoors. Moreover, in the case of the tourists in the anxiety group, "Social Distancing and Disinfection/Ventilation" was the top factor. Furthermore, in the case of tourists in the non-anxiety group, "Additional services and Disinfection/Ventilation" was the top factor. It can be considered that tourists who are worried about infection are emphasizing thorough infection control, including social distancing. On the other hand, it can be seen that tourists who are not worried about infection have a high awareness of enjoying skiing, although they take infection control measures such as "Disinfection/Ventilation" into consideration. However, deriving this consideration has a sample size issue. Because this survey was conducted during the COVID-19 pandemic, it was difficult to obtain responses from tourists who were not worried about infection; thus, continued investigation is necessary. Respondents in the anxiety group containing people outside the prefecture showed negative factor scores for "Social Distancing and Disinfection/Ventilation" and "additional services." It can be considered that tourists are cautious about moving across prefectures because the government announced a state of emergency to restrict the movement of people outside the prefectures. Also, since meals are included in value-added factors, it can be considered that tourists are worried about the risk of infection.

A summary of this study and our proposals are as follows:

- The tourists classified as part of the anxiety group emphasizes infection control measures such as "Social Distancing and Disinfection/Ventilation."
- People outside the prefecture placed more emphasis on infection control than people inside the prefecture.

To improve the attraction of tourists during the COVID-19 pandemic, we propose thorough management of "Social Distancing," "Disinfection," and "Ventilation" for ski resort operations. In particular, there is a possibility that the measures will affect the acceptance of tourists from outside the prefecture.

The negative impact of COVID-19 on the tourism industry is thought to be ameliorated by coexistence with COVID-19, but there is a possibility that new infectious diseases will spread in the near future. In that case, effective use of this knowledge is expected.

In the future, we will investigate tourism industries that is crowded with people.

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