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Unraveling Attendees' Needs: A Comparative Study of Online and On-site Participation in International Conferences in the post-Corona Era

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Abstract

Hybrid conferences, which offer both options, are becoming popular but may present challenges such as inequality of experience and reduced engagement for online participants. This study aims to identify the differences in the needs of attendees who prefer online or onsite participation in international conferences during the post-Corona era. Online questionnaire survey was conducted to attendees at three international conferences. Respondents were asked about reasons for attending conventions and their expected tourism resources. The results of the questionnaire survey are measured on a 5-point Likert scale and analyzed using descriptive statistics, Mann-Whitney's U test, and logistic regression to identify differences in needs among respondents. The results show that online participants prioritize presentations to advance their research and career, while onsite participants put on the values of both career advancement and interaction with other participants.

Keywords: MICE, tourism resources, convention business, questionnaire survey

1 Introduction

The purpose of this study is to clarify the difference in attendees' needs between those who wish to participate online and those who wish to participate on-site at an international conference in the post-corona era. None of those crises and disasters reached the level of the current Covid-19 pandemic [1]. The Covid-19 pandemic has severely affected convention destinations because it has led to many conventions being canceled and postponed.

According to Sox et al [2], technological advancements have provided meeting planners and attendees with alternatives in the form of virtual and hybrid meetings. Due to the Covid-19 pandemic, many international conferences were either canceled or postponed, with some transitioning to virtual or hybrid formats. Covid-19 has accelerated the adoption of virtual and hybrid event formats, so these formats continue to be popular even after the pandemic is gradually converging, but on-site events are also likely to remain important for many types of events and industries. Whether people choose online or onsite participation can vary widely depending on the individual, the type of event, and other factors. Some individuals may prefer virtual events due to the convenience and cost saving, while others may prefer in-person events for networking and social interaction.

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A hybrid conference is an event that combines both online and onsite attendance options, allowing attendees to participate either physically or remotely. The good points of a hybrid conference are that it provides a wider range of options for attendees and also it can increase the overall accessibility and inclusivity of the conference. However, one potential demerit of hybrid conferences is the inequality of experience between online and onsite participation. There is a risk that those attending the conference virtually may feel like second-class citizens, compared to those attending in onsite participation.

In addition, hosting a hybrid conference requires a lot of technical equipment and expertise, and online attendees may face distractions from their everyday environments such as work or family obligations, which could impact their engagement and attention during the events. Hybrid conferences have their good and bad points, but they will continue to do so in terms of giving participants more options. Sox et al [3] point out that due to the novelty of hybrid meetings, there is a dearth of academic research in this field.

The Japanese government and tourism-related industries are working to adapt and find innovative solutions to support the recovery of the MICE industry. The Japan National Tourism Organization (JNTO) has been taking various measures such as promoting hybrid events, implementing safety measures, providing financial support, developing new venues and facilities, and promoting Japan as a safe and attractive destination. As of April 2023, the situation of the MICE industry in Japan remains uncertain. The research will compare the attendees' need for online and onsite participation. The findings of this research provide valuable insights for conference organizers when holding an international conference.

2 Previous Studies

There are not a few previous studies on virtual conferences even before the Covid-19 pandemic, but in recent years, due to the influence of the Covid-19 pandemic, previous research on a hybrid conference has been published.

Kim and Park [4] conducted to identify the patterns of meeting planners' attitudes and adoption of technology based on their organizations, online, and work experience. A mailed survey was sent to Meeting Professionals International members and 616 completed questionnaires were received. The study found that meeting planners' technology adoption varied based on their type, and online experience played a role in the effect of work experience on variables such as usage of online contracts and requests for proposals, and attitudes toward virtual meetings. Rhoads [5] suggests that face-to-face meetings improve attendee satisfaction. However, Rhoads also recommended hybrid meetings as the optimal meeting format.

Dillette and Sun-Ah Ponting [6] suggest that the process of innovation in response to Covid-19 pandemic will be complex and ongoing. It emphasizes the importance of adopting a dynamic mindset that embraces change to ensure survival and success in the new normal, so current research debates the usefulness of hybrid conferences.

Devaraj et al [7] conducted a questionnaire survey to the attendees of a hybrid medical conference. The use of hybrid conferences, which combine technology and live networking, will lead to a more engaging and adaptable medical conference experience. This could ultimately result in a shift in the way scientific meetings are conducted to better meet the needs and pref-

erences of conference delegates. Moreover, Ostler et al [8] analyzed several factors such as the occurrence of adverse events, delays, and no-shows during the conference. Additionally, they distributed a questionnaire to participants after the conference for their feedback and evaluation. The results showed that those who were able to attend the hybrid conference in person on-site benefited the most. Hybrid conferences are seen as a viable option for scientific conferences in the future. In addition, Garg et al [9] researched a 3-day hybrid workshop. Feedback was collected using a structured questionnaire. The majority of respondents found hybrid conferences to be better than online conferences, preferred direct face-to-face interaction over online interaction, and believed that hybrid events will become the new normal due to the current Covid-19 situation.

Most respondents reported a preference for hybrid events over online conferences. The authors highlight that hybrid workshops offer unique opportunities for enhancing surgical skills and interactions with experts and may represent the future of neurosurgical training. Ellis et al [10] describe that hybrid meeting can offer many benefits, including cost savings, improved sustainability, increased collaboration, robustness, and flexibility. However, they also have potential pitfalls, such as technical challenges, communication challenges, different meeting dynamics, and human factors, that need to be considered and addressed for successful implementation.

Previous studies have discussed the effectiveness of hybrid meetings. Previous studies have pointed out that on-site meeting participation is the most effective. Online participants will not be able to enjoy all the services of an on-site international conference. Previous studies have not verified the differences in the needs of online and on-site participants in hybrid meetings. Therefore, in this research, the authors investigate the participation needs of online and on-site participants and discuss how to improve services in future hybrid conferences.

3 Method

To clarify the purpose of this research, an online questionnaire survey was conducted to conference attendees at the 12th and 13th International Congress on Advanced Applied Informatics' and 'AIIT/DCS-BINUS International Symposium on Decision Science and Consensus Formation'. The Authors received responses from 61 respondents.

The survey instrument is divided into three parts. In the first part, the questionnaire items include demographic information on the respondents' background (e.g., gender, age, position, and specialty). In the second part, the respondents were asked about preferable formats of conference participation with/post Corona era. As attendees' preferable formats, the respondents were asked to choose either online or onsite participation. In the third part, the respondents were asked about reasons for participating in the convention and the priority of travel destinations. As the reasons for participating in the convention, the questionnaire items include education purpose, presentation, opportunities for networking, job opportunities, interesting program, career development, personal development, association-related activities, visiting friends and relatives, and escape from routine. As the priority of travel destinations, the questionnaire items cover local food, shopping, city walks, nature, museums, hotels, hot springs, theme parks, traditional art shows, and watching sports.

These questionnaire items are measured on a 5-point Likert scale ranging from 1 (less important) to 5 (most important). To clarify the different needs of the respondents, Descriptive statistics are used in the demographic factors and Mann-Whitney's U test and logistic regression are conducted in each respondent's evaluation.

4 Results

Table 1: Demographic information of respondents who selected online and onsite participation

(N = 61)

	Online participation N = 38		Onsite participation N = 23	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Gender				
Female	11	29	3	13
Male	26	68	20	87
Prefer not to say	1	3		
Age				
20s	6	16	4	17
30s	7	18	6	26
40s	12	32	8	35
50s	10	26	5	22
The 60s and more	3	8	0	0
Nationality				
Japanese	13	34	10	43
Foreigner	25	66	13	57
Position				
Honorary Professor	1	3	0	0
Professor	9	24	8	35
Associate professor	1	3	2	9
Lecturer	9	24		
Assistant professor	3	8	1	4
Researcher	3	8	2	9
Company employee	4	11		
Undergraduate and graduate student	8	21	8	35
Others	0	0	2	9
Specialty				
Compound new area	1	3	0	0
Computer sci-	1	3	0	0

ence				
Engineering	6	16	3	13
General area	5	13	1	4
Informatics	15	39	11	48
Mathematics and physics system science	2	5	2	9
Social science	8	21	5	22
Other	0	0	1	4

For those who selected online participation, 11 respondents were female, 26 respondents were male, and 1 did not respond. By age group, 60% were in their 40s and 50s, and the remaining 40% were in their 20s, 30s, and over 60s. In terms of nationality, 13 respondents were Japanese, and 25 respondents were foreign nationals. In terms of job titles, 9 respondents were professors and lecturers. Undergraduate and graduate students were the next most participants. In terms of area of specialization, the largest number of respondents answered information science, followed by the second largest number of respondents who answered social science.

On the other hand, for those who answered onsite participants, there were 3 females and 20 males. By age group, respondents in their 40s accounted for the most, followed by those in their 30s. In terms of nationality, 10 respondents were Japanese, and 13 respondents were foreign nationals. In terms of position, professors and undergraduate/graduate students were the most common, followed by associate professors, researchers, and others. Respondents who answered other were a government official and university staff. In terms of area of specialization, the largest number of respondents answered information science, followed by the second largest number of respondents who answered social science. A respondent who answered other was education.

Table 2: Differences in respondents' reasons for participating in international conferences

(N = 61)

	Online participation N = 38		Onsite participation N = 23		
	Mean (M)	Standard Deviation (SD)	Mean (M)	Standard Deviation (SD)	P-value
Education purpose	4.08	0.85	3.91	1.24	0.94
Presentation	4.11	0.76	3.65	1.27	0.25
Opportunities for networking	4.00	0.87	4.00	1.13	0.73
Job opportunities	3.13	1.09	3.09	1.20	0.93
Interesting program	4.29	0.65	3.83	1.07	0.11
Career development	3.63	0.94	3.00	1.13	0.03
Personal development	3.89	0.89	3.78	0.80	0.58
Association related activities	3.45	1.16	3.39	1.20	0.87
Visiting friends and relatives	3.03	1.10	3.39	1.31	0.16
Escape from routine	2.87	1.12	3.39	1.08	0.11

In the results of table 2, the P-value of .03 indicates that there is a statistically significant difference between the means of online and onsite participation in career development, with a 95% confidence level. The means of the two groups in career development are 3.63 and 3.00, respectively. The mean score of online participation is 3.63 and the mean score of onsite participation is 3.00. This suggests that those who answered online participation had a higher mean score compared to those who answered onsite participation. Therefore, based on the statistical analysis using Mann-Whitney's U test, it can be concluded that there is a significant difference in the responses of the two groups to the questionnaire, and online participation has a more important outlook on the dimensions measured by the questionnaire compared to onsite participation. No significant differences were found for other items in the questionnaire.

Table 3: Differences in the respondents' degree of expectation toward tourism resources

(N = 61)

	B	S.E	Wald	Sig.	Exp(B)
Local Food	0.99	0.64	2.38	0.12	2.68
Shopping	0.80	0.48	2.74	0.10	2.23
City walk	0.19	0.72	0.07	0.79	1.21
Nature	-3.04	1.18	6.59	0.01	0.05
Beautiful scene	1.85	1.14	2.65	0.10	6.35
Museum	-0.57	0.61	0.87	0.35	0.57
Hotel	0.61	0.60	1.03	0.31	1.84
Hot spring bath	-0.21	0.43	0.24	0.63	0.81
History	0.70	0.65	1.15	0.28	2.01
Theme Park	-0.52	0.74	0.50	0.48	0.59
Traditional art show	0.04	0.72	0.00	0.96	1.04
Event	-0.47	0.63	0.56	0.45	0.62
Watching sports	0.95	0.54	3.10	0.08	2.58
Manga/Anime	-0.10	0.61	0.03	0.87	0.90
Special products and souvenirs	-0.34	0.69	0.24	0.62	0.71

Note: Online participation = 0 and Onsite participation = 1

Table 3 presents the results of the binary logistic regression where the p-values are below .05 in fifteen items and show a difference between online and onsite participation. Those who answered online participation considered 'nature' to be more interesting than those who answered onsite participation did. On the other hand, those who answered onsite participation considered 'watching sports' to be more interesting than those who answered online participation.

5 Discussion

Overall, those who answered online participation had higher average scores than those who answered on-site participation. As a result of the comparison by statistical analysis, there was a difference between the two groups only in career development. In career development, those who answered online participation are rated as having more important reasons to participate than those who answered onsite participation. The results show that online participants prioritized

increasing their careers. Online participants do not make site visits and have very limited contact with other participants. Listening to presentations from other sessions may be easier if you participate online. For this reason, it is thought that online participants tend to be highly conscious of increasing their careers, leading to reductions in staying time and costs. On the other hand, on-site participants have the advantage of being able to enjoy the content that can only be obtained face-to-face in addition to their backgrounds.

In addition, as a result of comparing those who answered online and onsite participation in terms of expected tourism resources, there was a difference in one question item. Logistic regression analysis shows that online participants tend to be more important than onsite participation in nature, one of the questionnaire items. Online participants do not visit the site, so the scope of enjoying tourism resources is quite limited. For example, if it is a tourist resource such as a souvenir, it may be possible to enjoy it, but it is difficult to have the opportunity to enjoy natural resources, etc., unless they are on-site. Therefore, offering online tours related to natural resources may also increase satisfaction among online participants. To increase tourism demand in the future, it is important to introduce the tourism resources of the host region, even if it is online participation. In addition, as a result of performing logistic regression analysis, no differences were observed between groups in other items.

6 Conclusion

In this study, the authors examined the differences in the needs of participants who wish to participate in international conferences, either online or on-site. According to the questionnaire survey results, online-in participants have higher average values than on-site participants. Online participants seem to give priority only to presentations to accumulate research achievements because they value their career advancement. On the other hand, it is thought that on-site participants tend to desire their career advancement and interaction with other participants. As for expected tourism resources, it became clear that online participants need to enjoy nature as a tourism resource. Therefore, it is thought that even online participants will be able to enjoy the international conference by implementing a service that conveys the natural resources around the venue.

As a limitation of this paper, there are more foreign respondents than Japanese respondents in this study, but the nationality is extremely limited. In addition, the number of respondents to the questionnaire was very small, so it is difficult to generalize the results of this research. Therefore, the survey results of this study do not represent the responses of all foreigners and Japanese. Further research is required to analyze attendees' needs.

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