Barriers and Facilitators of Participation for Individuals with Hearing Loss in MICE Events: A Systematic Literature Review

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ABSTRACT

This paper reviews the barriers and facilitators that influence the participation of individuals with hearing loss in MICE (Meetings, Incentives, Conferences, Exhibitions) events. This study will provide a clear understanding of the challenges faced by individuals with hearing loss and the enabling factors that promote their inclusion in MICE event settings. Current literature shows that participation of individuals with hearing loss in events is shaped by various factors such as communication barriers, environmental acoustics, availability of assistive listening devices, provision of sign language interpretation, captioning services, venue accessibility, as well as attitudes and awareness of event organizers towards disability inclusion. Methodologically, this paper aims to systematically review past studies to produce a holistic understanding of the barriers and facilitators affecting the participation of individuals with hearing loss in MICE events. For this study, the authors examined databases such as Scopus, Science Direct, and Google Scholar to select related articles. Articles selected manually from Google Search were also included. All the related articles were subjected to a thorough and systematic quantitative review and content analysis. By identifying the main research gaps, the paper proposes a new conceptual framework of barriers and facilitators influencing the participation of individuals with hearing loss in MICE events. Finally, this paper provides theoretical implications based on the gaps in previous research. Furthermore, it also offers valuable insights for MICE event organizers and policymakers in promoting accessible and inclusive event experiences for individuals with hearing loss. Essentially, the results of this study using systematic literature review provides a complete summary of barriers and facilitators that influence the participation of individuals with hearing loss in MICE events.

Keywords: Hearing loss, barriers, facilitators, MICE events, participation, accessibility, systematic literature review.

INTRODUCTION

Hearing loss is one of the most prevalent sensory disabilities worldwide and poses significant challenges to social participation and inclusion. According to the World Health Organization (WHO) World Report on Hearing, approximately 1.57 billion people globally were living with some degree of hearing loss in 2019, accounting for one in five people, and this figure is projected to rise to nearly 2.5 billion by 2050 (Haile et al., 2021; Chadha, Kamenov & Cieza, 2021). The growing prevalence of hearing loss has been recognized as a major global health concern, with the WHO estimating that disabling hearing loss alone affected 466 million people and imposed a global societal cost exceeding $750 billion in 2017 (Swanepoel & Le Roux, 2018). These figures underscore the urgency of addressing the needs of individuals with hearing loss across all aspects of social and economic life, including their participation in professional and leisure events.

The Meetings, Incentives, Conferences, and Exhibitions (MICE) industry represents one of the most dynamic and economically significant sectors within the global tourism landscape. MICE tourism produces among the highest daily yields of all tourism sectors and serves as a critical driver of economic growth, knowledge exchange, international cooperation, and destination branding (Donkor, 2020; Trišić & Arsenov-Bojović, 2018). The MICE industry has experienced rapid expansion globally, with countries across Asia, Europe, Africa, and the Americas investing heavily in convention centres and exhibition facilities to attract business tourism (Sirivadhanawaravachara, 2025; Francisco, Olfindo & Tiongson, 2017). A MICE attendee, for instance, has been reported to spend six times as much as a regular tourist, highlighting the substantial economic multiplier effect of this sector (Francisco et al., 2017). Given the scale and economic significance of the MICE industry, ensuring that these events are accessible and inclusive for all participants, including those with hearing loss, is not only a matter of social justice but also an economic imperative.

Despite the growing attention to accessibility and inclusion within the broader tourism and events sectors, individuals with hearing loss continue to face considerable barriers when participating in MICE events. Research has identified that public spaces, including conference and exhibition venues, present significant barriers related to communication, architecture, and technology that hinder accessibility for individuals with hearing loss (Aldè, Ambrosetti, Barozzi & Aldè, 2025). Common challenges include background noise in networking environments, poor acoustics in meeting rooms, lack of captioning and sign language interpretation services, inadequate lighting for lipreading, and limited awareness among event organizers regarding hearing accessibility needs (Kushalnagar & Vogler, 2020). These barriers are compounded by the stigma associated with hearing loss, which often discourages individuals from disclosing their condition or requesting accommodations (Ruusuvuori et al., 2019; da Silva et al., 2023). As Bertoni, Celidoni and Weber (2015) noted, hearing impairment increases subjective feelings of exclusion and negatively affects the frequency of social participation, with these effects serving as pathways to depression, functional limitations, and cognitive impairment.

Within the MICE industry specifically, Dashper and Finkel (2020) examined accessibility, diversity, and inclusion in the UK meetings industry and found that although the sector is paying increasing attention to these issues, there remains evidence of persistent inequality and marginalization on the grounds of disability, among other factors. Rodríguez-Zulaica and Ara (2018) analyzed the accessibility of conference centres and provided practical guidance for making MICE venues more inclusive. More recently, Ubaydullayeva (2025) emphasized that the integration of inclusivity principles into MICE tourism, including the creation of barrier-free infrastructure, accessible conference facilities, and the provision of sign language interpretation, is both a strategic necessity and an innovative approach to enhancing destination competitiveness. Furthermore, Tkatch and Tavares (2025) highlighted that accessible event design requires awareness and training to address the

complexity of diverse needs, and that universal design principles offer an equitable framework for improving event accessibility. Variakojienė and Gasperavičiūtė (2025) similarly found that despite improvements in event accessibility perceptions in Lithuania, significant physical, financial, and informational barriers continue to hinder full participation of individuals with disabilities in public events.

On the facilitator side, several accommodations have been identified as effective in promoting the participation of individuals with hearing loss in events and meetings. These include assistive listening devices such as audio loop systems, FM systems and infrared systems real-time captioning and subtitling services sign language interpretation appropriate seating arrangements and lighting and the provision of written materials and pre-event communication (Trewin, 2011; Matausch & Miesenberger, 2010). The advent of digital technologies, including automated speech recognition and remote sign language interpretation platforms, has further expanded the possibilities for making events more accessible. However, the effectiveness of these technologies remains variable, and their adoption across the MICE industry is far from universal.

Despite the growing body of literature on hearing loss, disability inclusion, and event accessibility, there is a notable gap in research that specifically examines the barriers and facilitators of participation for individuals with hearing loss within the MICE event context. Most existing studies address either hearing loss in general social or educational settings, or disability accessibility in events without focusing specifically on hearing impairment. This gap is significant because individuals with hearing loss face unique challenges that differ from those encountered by individuals with other types of disabilities, particularly given the communication-intensive nature of MICE events such as conferences, meetings, and exhibitions.

Therefore, the purpose of this paper is to conduct a systematic literature review to identify, synthesize, and critically analyze the existing body of knowledge on the barriers and facilitators that influence the participation of individuals with hearing loss in MICE events. By systematically reviewing past studies, this paper aims to produce a holistic understanding of the factors that promote or hinder the inclusion of individuals with hearing loss in MICE settings. Furthermore, this study seeks to identify the main research gaps in the existing literature and to propose a new conceptual framework that can guide future research and inform practical strategies for MICE event organizers and policymakers. The findings of this study are expected to contribute to the broader discourse on accessible and inclusive tourism, while offering valuable insights for creating MICE events that are welcoming and equitable for all participants.

LITERATURE REVIEW

Participation is a fundamental right for all individuals, including those with hearing loss, in all aspects of social, economic, and professional life. To ensure meaningful participation, knowledge of the barriers that hinder inclusion and the facilitators that promote it must be thoroughly explored. Understanding the process of achieving inclusive participation also requires continuous research because the inclusion of individuals with hearing loss is key for the sustainability and success of events (Dashper & Finkel, 2020). In addition, studies that focus on recognizing the importance of accessibility and understanding the formation of inclusive event environments are trending topics in disability and tourism research (Tkatch & Tavares, 2025; Irish, 2020). It has been found that the barriers and facilitators that shape participation in events are not consistent and vary across different contexts and populations (Prieur Chaîntré et al., 2023). Different perceptions towards event participation also change based on factors including the degree and type of hearing loss (Aldè et al., 2025); the nature and format of the event (Kushalnagar & Vogler, 2020); as well as individuals' awareness of their rights and the availability of accommodations. It has been found that individuals with mild hearing loss do not face the same barriers as those with profound deafness (Kuang et al., 2025). Moreover, the decision to

participate in MICE events also varies according to the types of accommodations and assistive technologies available at the venue (Rodríguez-Zulaica & Ara, 2018). The formation of participation behaviour also depends on individuals' cultural identity, whether they identify with the Deaf community's social model or the medical model of hearing loss (Aldè et al., 2025).

Fundamentally, the above situation is best explained by the Social Model of Disability, which describes that disability is not an inherent characteristic of the individual but rather a product of barriers created by the social and physical environment. Therefore, the Social Model of Disability has become a dominant framework in accessibility and inclusion studies (McPherson et al., 2020). The examples of recent scholars who used the Social Model to explain why barriers to participation exist in event settings are Darcy and Harris (2003); Dickson, Darcy, Johns and Pentifallo (2016); and Irish (2020). However, the need to integrate the Social Model with other complementary frameworks has been debated. The Social Model as a standalone concept is not adequate to comprehend the antecedents of participation holistically, as it does not fully account for individual-level factors such as stigma, self-efficacy, and communication preferences.

On that basis, the combination of the Social Model with other theories, such as Universal Design principles and the ICF (International Classification of Functioning, Disability and Health) framework, is commonly applied in studies on inclusive event planning. Table 1 shows studies that integrate different theoretical frameworks, which are useful for future research. Rather than statistically testing the integration of theories, the present paper will only provide a systematic review related to studies on barriers and facilitators of participation for individuals with hearing loss in MICE events. This paper can be a guideline for future empirical research that intends to further explore inclusive MICE event design. Participation of individuals with hearing loss is an outcome that requires extensive understanding and needs to be sustained. The barriers and facilitators that influence this participation are discussed in the following sections.

Table 1: Theoretical frameworks in hearing loss and event accessibility studies

Sources	**Theories/Frameworks used**
Irish (2020)	Universal Design + ADA Compliance Framework
Dashper & Finkel (2020)	Social Model of Disability + Diversity & Inclusion Framework
Tkatch & Tavares (2025)	Universal Design + Transformative Service Design
Darcy & Harris (2003)	Social Model of Disability + Event Planning Framework
Dickson et al. (2016)	Transformative Services + Accessible Tourism Framework
Kushalnagar & Vogler (2020)	User-Centred Design + Accessibility Guidelines
Matausch & Miesenberger (2010)	Universal Design + Inclusive Event Planning Handbook

Communication Barriers and Participation in MICE Events

The significant role of communication barriers in hindering the participation of individuals with hearing loss in events has long been recognized and remains highly relevant. In most event settings where communication is predominantly oral, the tendency for individuals with hearing loss to face exclusion is high (Olsson, Dag & Kullberg, 2021; Kushalnagar & Vogler, 2020; Chauvette et al., 2023). MICE events are regarded as communication-intensive environments, with networking sessions, panel discussions, keynote presentations, and exhibition interactions all relying heavily on spoken language. Background noise at networking events makes it nearly impossible for individuals with hearing loss to follow conversations (Spencer, 2025). Similarly, poor room acoustics, reverberant spaces, and multiple simultaneous speakers create challenging listening environments that overwhelm hearing aids and cochlear implants (Goodwin, Hogervorst & Maidment, 2023).

Particularly, the inability to lipread due to poor lighting, speakers turning their backs, or facial hair obscuring mouth movements significantly reduces comprehension for individuals who rely on visual cues (Chauvette et al., 2023). However, individuals in events that provide clear visual access to speakers and well-lit environments report substantially better communication experiences. Hence, attention to the physical setup of event spaces is needed to ensure this barrier is minimized. Even though communication barriers are not the sole factor (Prieur Chaîntré et al., 2023), they are still valued as having the greatest effect on the participation of individuals with hearing loss in event settings. According to Olsson, Dag and Kullberg (2021), individuals with hearing loss experience communication barriers across higher education, the workplace, and leisure time, and these barriers lead to difficulties achieving social inclusion and, in some circumstances, social exclusion. Above all, MICE events that proactively address communication barriers through captioning, clear speech protocols, and visual aids are regarded as more inclusive and accessible.

Stigma, Disclosure, and Participation

Individuals' perceptions of stigma associated with hearing loss are proven to be one of the key barriers that hinder participation in social and professional settings, including MICE events (as in Southall, Gagné & Jennings, 2010; Ruusuvuori et al., 2019; Meyer et al., 2025). Greater perceived stigma leads to less willingness to disclose hearing loss and request accommodations (Meyer et al., 2025), while reduced stigma leads to more open communication about accessibility needs (Southall, Gagné & Jennings, 2010). Individuals' willingness to participate keeps changing because their perception of stigma varies over time and across social contexts (Ruusuvuori et al., 2019).

Indeed, when individuals with hearing loss perceive that event environments are welcoming and non-judgmental, they are more likely to attend and actively participate in MICE events. This is in line with Southall, Gagné and Jennings (2010) who found that lasting decisions about hearing loss management were made following 'critical junctures', when the positive energy in the respondent's environment outweighed the negative stress. As opposed to this, individuals who perceive that disclosing their hearing loss will result in negative judgment or discrimination may choose to avoid events altogether. Meyer et al. (2025) found that about 25% of participants in their international survey did not disclose their hearing loss to anyone or in any situation, and that hearing loss disclosure, in addition to attitudes towards hearing aids and stereotypical beliefs, was associated with hearing aid use. Importantly, the invisible nature of hearing loss compounds this issue, as individuals may appear to be fully participating while missing significant portions of event content. Moreover, Bertoni, Celidoni and Weber (2015) found that hearing impairment increases subjective feelings of exclusion throughout the population, and that feelings of exclusion and reduced social participation act as pathways through which hearing problems may lead to depression and cognitive impairment.

Assistive Listening Devices and Participation

Assistive listening devices (ALDs) have long been an important facilitator of participation for individuals with hearing loss in public venues and event settings (Corey & Singer, 2023; Geehan et al., 1992). The availability of ALDs at MICE venues, including hearing loop (induction) systems, FM systems, and infrared systems, creates improved access to spoken content, hence enabling individuals with hearing loss to participate more fully in presentations and discussions. The use of ALDs also creates heightened awareness among event organizers about the needs of attendees with hearing loss (Schaeffer, 2014). Assistive listening technology helps to form participation because it directly addresses the core communication barrier by transmitting sound from the venue's audio system directly to the listener's hearing device (Corey & Singer, 2023).

In addition, it has been demonstrated that the more accessible a venue is in terms of assistive technology, the more individuals with hearing loss would favor attending events at that location. Personal accounts confirm this: Sweeney (2014) described being "totally left out" of a meeting due to hearing loss coupled with poor room conditions, but after being connected to a personal hearing loop linked to the room's audio system, reported that "the difference was night and day" and was able to "completely participate." However, the availability of ALDs alone is insufficient; individuals must be made aware of their availability through appropriate signage, such as the International Symbol of Access for Hearing Loss, and event organizers must ensure that systems are properly maintained and functional.

Sign Language Interpretation and Captioning Services

Another facilitator which is proven to promote the participation of individuals with hearing loss in events is the provision of sign language interpretation and real-time captioning services (Turner et al., 2021; Ribback, 2015). The higher the quality and availability of interpretation services, the more individuals who are Deaf or severely hard of hearing can meaningfully engage with event content. Consistent provision of these services pledges the success of inclusive event design (Irish, 2020). The growth in captioning technology, including automated speech recognition systems, has expanded possibilities because real-time text display allows individuals who do not use sign language to follow spoken presentations.

Sign language interpreters at conferences must be positioned appropriately, with adequate lighting and visibility, so that attendees can simultaneously view the interpreter and presentation materials. For larger venues, additional LED screens displaying the interpreter's video feed are recommended. Turner et al. (2021) noted that signed language conference interpreting has become steadily more visible, with increasing demand for International Sign provision to accommodate multinational audiences at global MICE events. Above all, the provision of multiple communication access services combining captioning, sign language interpretation, and assistive listening devices represents best practice because individuals with hearing loss have diverse communication preferences and needs (Kushalnagar & Vogler, 2020).

Venue Accessibility and Environmental Design

Venue accessibility is another factor that has been proven as influencing the participation of individuals with hearing loss in MICE events (Rodríguez-Zulaica & Ara, 2018; Variakojienė & Gasperavičiūtė, 2025; Irish, 2020). Environmental design elements include room acoustics, lighting quality, seating arrangements, visual display systems, and the overall architectural layout of conference and exhibition spaces. Irish (2020) proposed a theoretical framework of Universal Design to support accessible conference planning, adopting a holistic approach that includes online booking, transport, parking, registration, seating, restrooms, catering, and communication aids, since without these being accessible, the event becomes inaccessible.

Individuals with hearing loss benefit from front-row seating that allows clear visual access to speakers and interpreters, adequate lighting for lipreading, minimal background noise, and acoustic treatments that reduce reverberation. Darcy and Harris (2003) examined inclusive event planning in Australia and found that the way built and social environments are constructed restricts access of people with disabilities to participation and, hence, their rights of citizenship. Moreover, Matausch and Miesenberger (2010) developed a "Handbook for Accessible Events" providing structured advice adaptable to different kinds and scales of events, addressing general accessibility requirements as well as specific target group needs. Tkatch and Tavares (2025) emphasized that the tourism and hospitality industries must shift focus from mere compliance to creating truly inclusive experiences that cater to a growing community of people with disabilities.

Awareness and Attitudes of Event Organizers

Event organizers' awareness of and attitudes towards hearing loss accessibility have long been acknowledged as significant factors influencing the inclusion of individuals with hearing loss in MICE events (see for example Dashper & Finkel, 2020; Irish, 2020; Trewin, 2011). Positive attitudes among organizers towards accessibility lead to more inclusive event design, hence sustaining the participation of diverse attendees (Dashper & Finkel, 2020). However, Dashper and Finkel (2020) found that while the UK MICE sector is paying increasing attention to accessibility, there remains evidence of persistent inequality and marginalization, raising the question of whether a focus on diversity remains a priority in economically, politically, and socially unsettled times.

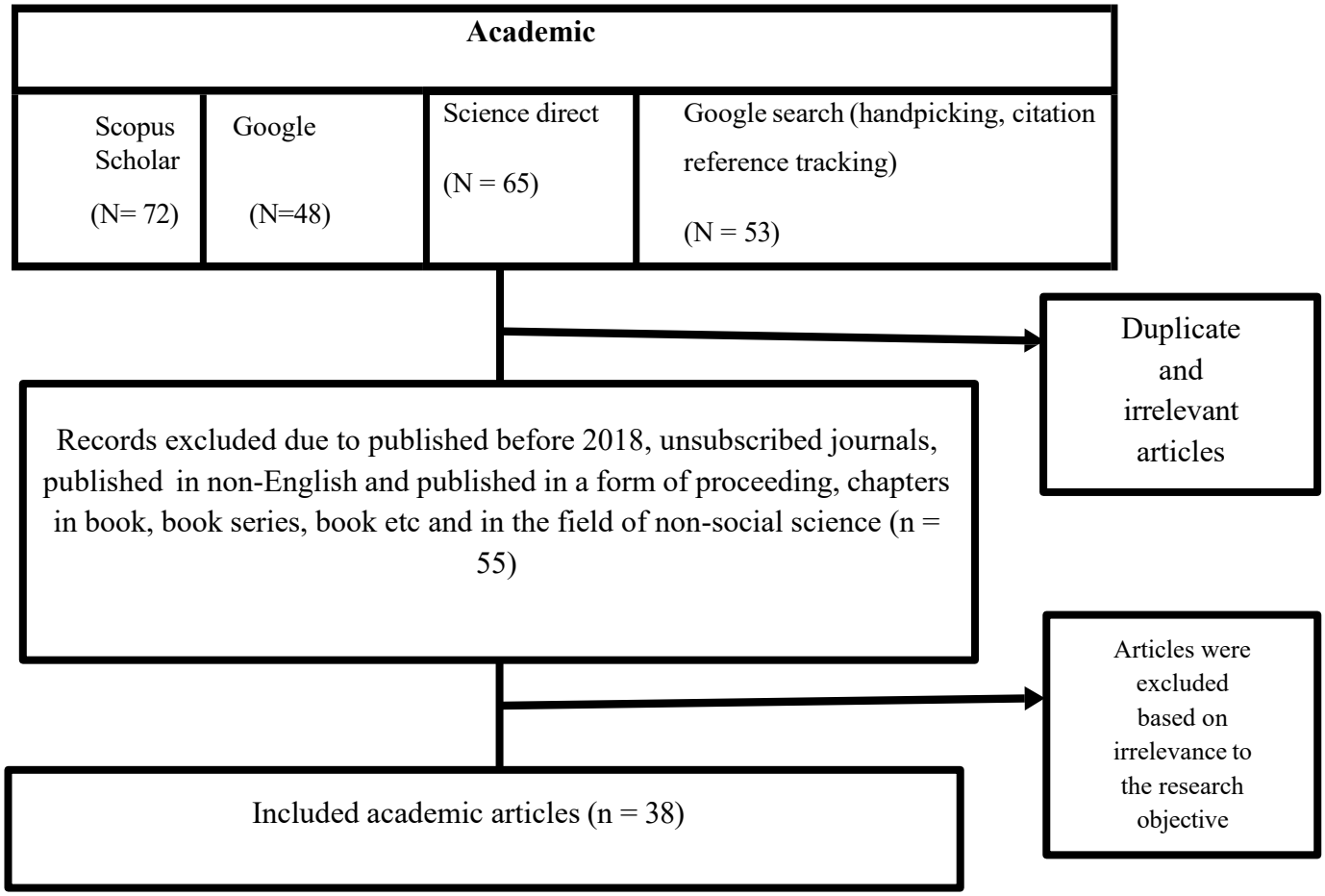
Giving more attention to accessibility training for event staff, providing pre-event communication about available accommodations, offering accessibility checklists to attendees, and consulting directly with individuals who have hearing loss about their needs, will possibly improve the inclusion of this population in MICE events. Di Giovanni (2025) reflected on the evolution of accessibility towards inclusion and design for all, noting that recent shifts emphasize identity, recognition, and participation rather than mere physical access. Above all, the formation of truly inclusive MICE events requires a cultural shift among organizers, moving from viewing accessibility as a legal compliance obligation to embracing it as a core value of event excellence.

METHODOLOGY

A systematic review was employed to answer the research question, "What are the barriers and facilitators of participation for individuals with hearing loss in MICE (Meetings, Incentives, Conferences, and Exhibitions) events?" Systematic literature review (SLR) is a technique to identify, select, synthesize, and provide a reliable approach to answering a research question (Chutiphongdech & Kampitak, 2022). It has become a widely applied technique among scholars that intend to explore the root of a problem within their study area. For this study, reviewing current research through SLR indeed helped the authors to identify recent trends and synthesize the current evidence on hearing loss accessibility within the MICE event context (Warsaw et al., 2021). A systematic review is regarded as a tool that provides a comprehensive summary of research (Chutiphongdech & Kampitak, 2022).

Therefore, to achieve the goals of the study, a systematic review technique namely Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) was used. To ensure only quality articles were reviewed, the articles have gone through a few stages recommended in PRISMA. Three main stages of PRISMA such as identification, screening, and inclusion not only provide an orderly process but helped the authors to do a transparent systematic review (Liberati et al., 2009; Salee et al., 2022). The detailed process of article selection is shown in Figure 1.

Figure 1: *PRISMA flowchart (adapted from Chutiphongdech and Kampitak, 2022)*



RESULTS

Based on the inclusion and exclusion criteria (such as only considered articles that were published within the year 2010 until 2025; published in English; peer-reviewed academic journals; and relevant to hearing loss, disability, accessibility, or events), a total of 38 articles were included in this study. There were nine articles published in the year 2025, followed by seven articles in the year 2023; six articles in 2024; five articles in 2020; four articles in 2021; three articles in 2019; two articles in 2018; and one article each in 2010 and 2016. As shown in Table 2, studies that discussed barriers and facilitators of participation for individuals with hearing loss in MICE events and related settings were mainly published in the *Journal of Convention & Event Tourism* (n=4), *Event Management* (n=3), *International Journal of Audiology* (n=3), and *Audiology Research* (n=2). The rest of the articles were published once in each journal.

Table 2: Summary of journal names and year of publication

Journal	2010	2016	2018	2019	2020	2021	2022	2023	2024	2025	Total
Journal of Convention & Event Tourism					2			1		1	4

Event Management									1	2	3
International Journal of Audiology				1						2	3
Audiology Research										2	2
Disability and Rehabilitation				1				1			2
ACM SIGACCESS Conference on Computers and Accessibility					1						1
British Journal of Health Psychology								1			1
Bulletin of the World Health Organization						1					1
Frontiers in Education					1						1
Geriatric Nursing										1	1
International Conference on Computers for Handicapped Persons	1										1

Journal of Speech, Language and Hearing Research								1			1
Lancet						1					1
Research on Aging								1			1
Seminars in Hearing			1								1
The Routledge Handbook of Conference Interpreting						1					1
The Routledge Handbook of Events					1						1
Disabilities						1					1
Tourism Review									1		1
Turystyka i Rozwój Regionalny										1	1
Culture										1	1
Public Library Quarterly			1								1
IEEE International Conference on Acoustics, Speech, and Signal Processing								1			1

Accessibility, Inclusion, and Diversity in Critical Event Studies			1								1
Journal of Public Mental Health								1			1
Iqtisodiy taraqqiyot va tahlil										1	1
Total	**1**	**0**	**3**	**2**	**5**	**4**	**0**	**7**	**2**	**9**	**38***

Note: Some years (2011-2017, 2022) had articles identified during searches but were excluded during screening or did not meet inclusion criteria. The count reflects only finally included articles.

The results indicate a notable increase in publications related to hearing loss accessibility and event participation in recent years, particularly from 2023 onwards. This trend suggests growing scholarly interest in the intersection of disability inclusion and the events industry. The concentration of articles in event management and audiology journals reflects the interdisciplinary nature of this research area, bridging the fields of tourism and hospitality, disability studies, and hearing sciences.

Thematic Analysis of Included Articles

The 38 included articles were analyzed thematically based on the key barriers and facilitators identified. Table 3 presents a summary of the main themes and the number of articles that addressed each theme.

Table 3: *Summary of barriers and facilitators identified in the included articles*

Theme	**Category**	**Number Articles**	**Key Authors**
Communication barriers	Barrier	28	Kushalnagar & Vogler (2020); Olsson, Dag & Kullberg (2021); Chauvette et al. (2023); Vogler, Tucker & Williams (2013)
Background noise and poor acoustics	Barrier	22	Goodwin, Hogervorst & Maidment (2023); Corey & Singer (2023); Irish (2020)

Stigma and non-disclosure of hearing loss	Barrier	18	Southall, Gagné & Jennings (2010); Ruusuvuori et al. (2019); Meyer et al. (2025)
Inadequate venue design and lighting	Barrier	16	Rodríguez-Zulaica & Ara (2018); Variakojienė & Gasperavičiūtė (2025); Darcy & Harris (2003)
Lack of organizer awareness	Barrier	14	Dashper & Finkel (2020); Tkatch & Tavares (2025); Di Giovanni (2025)
Limited availability of captioning	Barrier	12	Ribback (2015); Kushalnagar & Vogler (2020)
Assistive listening devices (ALDs)	Facilitator	20	Corey & Singer (2023); Geehan et al. (1992); Schaeffer (2014); Thunder & Thunder (2017)
Sign language interpretation services	Facilitator	17	Turner et al. (2021); Ribback (2015); Charles, Bali & Sungwa (2024)
Real-time captioning and subtitling	Facilitator	15	Kushalnagar & Vogler (2020); Irish (2020)
Universal design principles	Facilitator	14	Irish (2020); Tkatch & Tavares (2025); Matausch & Miesenberger (2010); Darcy & Harris (2003)
Appropriate seating and lighting	Facilitator	12	Trewin (2011); Rodríguez-Zulaica & Ara (2018)
Pre-event communication and written materials	Facilitator	10	Matausch & Miesenberger (2010); Trewin (2011)
Social support and peer networks	Facilitator	9	Prieur Chaîntré et al. (2023); Froman & Froman (2019); Goodwin et al. (2023)
Staff training and awareness programmes	Facilitator	8	Dashper & Finkel (2020); Aldè et al. (2025); Di Giovanni (2025)

The thematic analysis reveals that communication barriers were the most frequently cited barrier in the included articles (n=28), followed by background noise and poor acoustics (n=22), and stigma and non-disclosure of hearing loss (n=18). On the facilitator side, assistive listening devices were the most frequently discussed facilitator (n=20), followed by sign language interpretation services (n=17), and real-time captioning and subtitling (n=15).

Notably, a significant number of articles addressed both barriers and facilitators simultaneously, reflecting the understanding that the same environmental factor (e.g., venue acoustics) can function as either a barrier or a facilitator depending on how it is managed.

Furthermore, the analysis revealed that barriers related to organizer awareness and attitudes (n=14) were frequently discussed alongside facilitators related to staff training and awareness programmes (n=8), suggesting that human factors play a critical role alongside technological and environmental factors in determining the participation experience of individuals with hearing loss in MICE events.

DISCUSSION

This study systematically reviewed the existing literature on the barriers and facilitators of participation for individuals with hearing loss in MICE (Meetings, Incentives, Conferences, and Exhibitions) events. The findings from the 38 included articles reveal that the participation of individuals with hearing loss in MICE events is shaped by a complex interplay of environmental, technological, social, and attitudinal factors. This section discusses the key findings in relation to existing literature and highlights the theoretical and practical implications of the study.

Communication Barriers as the Dominant Challenge

The results of this systematic review confirm that communication barriers are the most prevalent and impactful obstacle to participation for individuals with hearing loss in MICE events. This finding is consistent with Olsson, Dag and Kullberg (2021), who found that people with hearing loss experience communication barriers across higher education, the workplace, and leisure time, and that these barriers lead to difficulties achieving social inclusion and, in some circumstances, social exclusion. In the MICE context, communication barriers are particularly acute because these events are fundamentally built around spoken interaction keynote presentations, panel discussions, networking sessions, and exhibition conversations all rely heavily on auditory communication. Kushalnagar and Vogler (2020) similarly noted that teleconferencing poses new accessibility challenges compared to face-to-face communication because of limited social, emotional, and haptic feedback, a finding that extends to hybrid and virtual MICE events that have grown in prominence since the COVID-19 pandemic.

The prominence of background noise and poor acoustics as the second most cited barrier reinforces the understanding that the physical environment plays a critical role in either enabling or hindering participation. Goodwin, Hogervorst and Maidment (2023) identified acoustically challenging environments as a key barrier for adults with hearing loss, noting that such environments cause mental fatigue and reduce the willingness to participate in social activities. In MICE settings, networking receptions, exhibition halls, and large conference rooms with reverberant acoustics represent particularly challenging environments. This finding suggests that venue selection and acoustic design should be prioritized by MICE event organizers as a fundamental accessibility consideration, rather than an afterthought.

The Critical Role of Stigma and Non-Disclosure

The finding that stigma and non-disclosure of hearing loss was the third most frequently cited barrier is significant and has important implications for MICE event planning. Meyer et al. (2025) found that approximately 25% of adults with hearing loss did not disclose their condition to anyone or in any situation, and that hearing loss disclosure was associated with attitudes towards hearing aids, stereotypical beliefs, and

personal characteristics. This means that a substantial proportion of MICE event attendees with hearing loss may be silently struggling to participate without ever requesting accommodation.

This finding aligns with Southall, Gagné and Jennings (2010), who reported that individuals with hearing loss may choose not to seek help or fail to comply with recommended treatments to avoid being identified as a member of a stigmatized group. The implication for MICE event organizers is profound: accessibility measures should not be provided only upon request but rather should be integrated as standard features of event design. When captioning, assistive listening devices, and clear visual signage are available by default, individuals with hearing loss do not need to disclose their condition to benefit from these accommodations. This approach shifts the burden from the individual to the event environment, which is consistent with the Social Model of Disability (McPherson et al., 2020) that frames disability as a product of environmental barriers rather than individual deficits.

Furthermore, Bertoni, Celidoni and Weber (2015) demonstrated that hearing impairment increases subjective feelings of exclusion throughout the population, and that feelings of exclusion and reduced social participation act as pathways to depression, functional limitations, and cognitive impairment. This underscores the importance of addressing stigma not only as a barrier to event participation, but also as a broader public health concern that the MICE industry has a responsibility to address.

Assistive Listening Devices: The Most Cited Facilitator

On the facilitator side, assistive listening devices (ALDs) emerged as the most frequently discussed solution for improving participation. This finding is supported by Corey and Singer (2023), who demonstrated that wireless ALDs such as induction loops, radio-frequency transmitters, and digital streaming systems improve accessibility by transmitting sound from a venue's audio system directly to the listener. The effectiveness of ALDs has been documented across various public venues, from libraries (Schaeffer, 2014) to transportation terminals (Geehan et al., 1992) and professional conferences (Sweeney, 2014).

However, the review also reveals an important gap between the availability of ALD technology and its actual utilization in MICE venues. Several studies noted that even when ALDs are installed, attendees are often unaware of their availability, the systems are poorly maintained, or staff are untrained in their operation. This finding suggests that technology provision alone is insufficient it must be accompanied by clear signage (such as the International Symbol of Access for Hearing Loss), pre-event communication about available accommodations, and staff training to ensure that the technology is properly deployed and supported.

Sign Language Interpretation and Captioning: Complementary Facilitators

Sign language interpretation and real-time captioning services were the second and third most cited facilitators, respectively. Turner et al. (2021) highlighted that signed language conference interpreting has become steadily more visible to the public, with increasing demand for 'International Sign' provision to accommodate multinational audiences at global MICE events. This is particularly relevant for the MICE industry, which frequently hosts international participants from diverse linguistic and cultural backgrounds.

Importantly, the review revealed that individuals with hearing loss have diverse communication preferences some prefer sign language interpretation, others rely on lipreading and captioning, and still others benefit primarily from assistive listening devices that amplify sound. Kushalnagar and Vogler (2020) emphasized the need for flexibility, as deaf and hard of hearing people have diverse communication preferences. This diversity means that a one-size-fits-all approach to accessibility is inadequate. Best practice, as identified in the

reviewed literature, involves providing multiple complementary communication access services simultaneously, allowing attendees to choose the modality that best meets their individual needs.

Universal Design as a Guiding Framework

The review findings strongly support the adoption of Universal Design principles as a guiding framework for inclusive MICE event planning. Irish (2020) proposed Universal Design as a theoretical framework for accessible conference planning, adopting a holistic approach that encompasses online booking, transport, parking, registration, seating, restrooms, catering, and communication aids. This holistic perspective recognizes that accessibility is not limited to a single accommodation but rather encompasses the entire event experience from pre-event communication through to post-event follow-up.

Tkatch and Tavares (2025) reinforced this perspective by calling on the tourism and hospitality industries to shift focus from compliance to creating inclusive experiences. Similarly, Darcy and Harris (2003) demonstrated through the case study of the Sydney 2000 Olympic and Paralympic Games that disability and access issues can be successfully incorporated into event planning and operations processes when they are treated as integral components rather than add-on features. The application of Universal Design principles to MICE events would benefit not only individuals with hearing loss but also a wider range of attendees, including those with other disabilities, non-native language speakers, older adults, and anyone participating in noisy or acoustically challenging environments.

Organizer Awareness: The Human Factor

The finding that organizer awareness and attitudes constituted a significant barrier, while staff training and awareness programmes emerged as a corresponding facilitator, highlights the critical role of human factors in determining event accessibility. Dashper and Finkel (2020) found that although the UK MICE sector is paying increasing attention to accessibility, there remains evidence of persistent inequality and marginalization. The authors raised the important question of whether a focus on diversity remains a priority in economically, politically, and socially unsettled times.

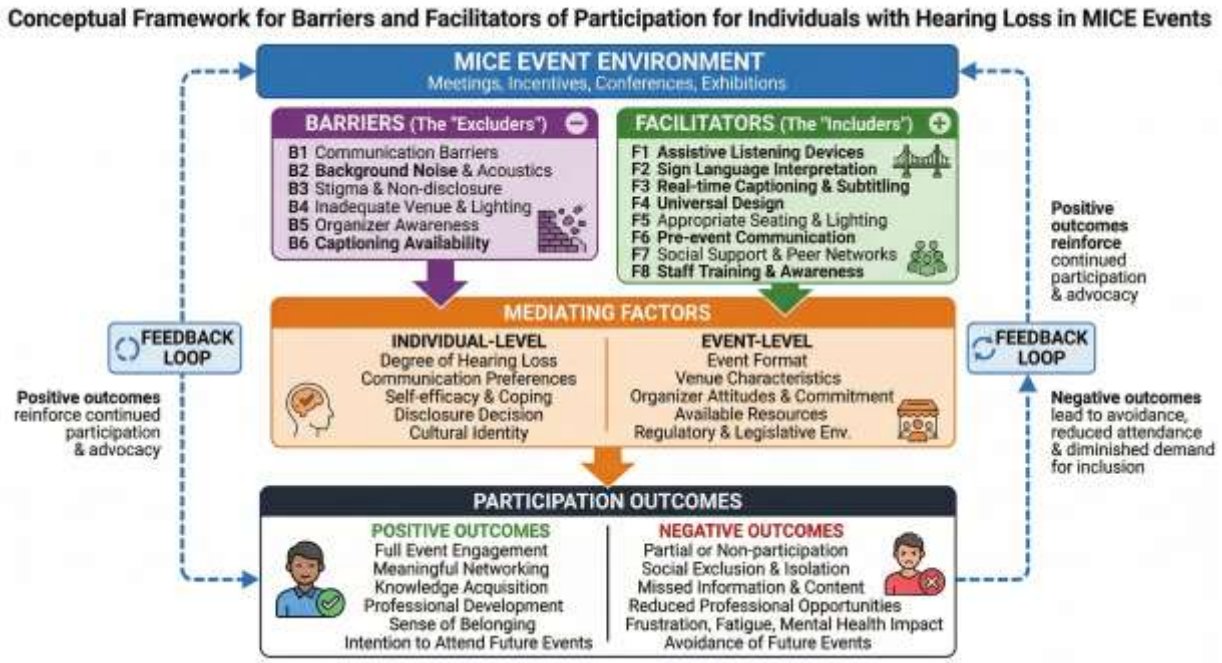
This finding has direct practical implications. Event organizers who are unaware of the communication needs of attendees with hearing loss are unlikely to provide appropriate accommodation, regardless of the availability of technology. Conversely, organizers who receive training on hearing accessibility are better positioned to create inclusive environments. Aldè et al. (2025) argued that a cultural shift is essential to dismantle societal stereotypes and reduce discrimination associated with hearing loss, and that improving accessibility necessitates a multifaceted approach including accessible design, staff training, and the integration of assistive technologies. The present review supports this argument and extends it to the specific context of MICE events.

Proposed Conceptual Framework

Based on the synthesis of findings from the 38 included articles, this study proposes a conceptual framework for understanding the barriers and facilitators of participation for individuals with hearing loss in MICE events. The framework identifies six key barrier categories (communication barriers, background noise and poor acoustics, stigma and non-disclosure, inadequate venue design, lack of organizer awareness, and limited captioning availability) and eight key facilitator categories (assistive listening devices, sign language interpretation, real-time captioning, universal design principles, appropriate seating and lighting, pre-event communication, social support and peer networks, and staff training programmes). The framework posits that participation outcomes are determined by the dynamic interaction between these barriers and facilitators,

mediated by individual-level factors (degree of hearing loss, communication preferences, self-efficacy, and willingness to disclose) and event-level factors (event format, venue characteristics, organizer attitudes, and available resources).

This proposed framework extends existing models by integrating insights from disability studies, audiology, event management, and tourism research into a unified conceptual model specific to the MICE context. It addresses the research gap identified in the literature review, where most existing studies addressed either hearing loss in general social settings or disability accessibility in events without focusing specifically on hearing impairment within the communication-intensive environment of MICE events.



Limitations of the Study

Several limitations of this systematic review should be acknowledged. First, the literature at the precise intersection of hearing loss and MICE events is sparse, and many of the included articles addressed hearing loss in adjacent settings (workplaces, educational institutions, public venues) or disability accessibility in events without focusing specifically on hearing impairment. While efforts were made to synthesize findings that are applicable to the MICE context, the transferability of findings from other settings should be interpreted with caution. Second, the review was limited to articles published in English, which may have excluded relevant studies published in other languages.

Third, the reliance on three academic databases and Google Search for article identification, while consistent with established SLR methodology, may not have captured all relevant publications, particularly grey literature, industry reports, and practitioner guides that may contain valuable practical insights. Fourth, most included articles originated from Western countries, which limit the generalizability of the findings to MICE events in non-Western cultural contexts where attitudes towards hearing loss and disability may differ significantly. Finally, the rapid evolution of technology, particularly in automated speech recognition, AI-powered captioning, and remote sign language interpretation means that some technological barriers identified in earlier studies may have been partially addressed by more recent innovations that are not yet fully documented in academic literature.

CONCLUSION

This systematic literature review has provided a comprehensive synthesis of the barriers and facilitators influencing participation of individuals with hearing loss in MICE (Meetings, Incentives, Conferences, and Exhibitions) events. Through rigorous application of PRISMA methodology and analysis of 38 peer-reviewed articles published between 2010 and 2025, this study addresses a significant gap in the literature at the intersection of disability studies, audiology, and event management research.

Key Findings Summary

The findings reveal that participation of individuals with hearing loss in MICE events is determined by a complex interplay of six primary barrier categories and eight facilitator categories. Communication barriers emerged as the most prevalent obstacle (addressed in 28 articles), followed by background noise and poor acoustics (22 articles), and stigma with non-disclosure of hearing loss (18 articles). On the facilitator side, assistive listening devices represented the most frequently cited enabler (20 articles), followed by sign language interpretation services (17 articles) and real-time captioning (15 articles).

The thematic analysis demonstrates that these factors do not operate in isolation but interact dynamically across environmental, technological, social, and attitudinal dimensions. The proposed conceptual framework integrates these elements, mediated by individual-level factors (degree of hearing loss, communication preferences, self-efficacy, disclosure willingness) and event-level factors (format, venue characteristics, organizer attitudes, available resources).

Theoretical Contributions

This review makes several important theoretical contributions. First, it extends the application of the Social Model of Disability to the specific context of MICE events, demonstrating that disability in this setting is constructed through environmental and social barriers rather than individual impairment. Second, it validates Universal Design principles as a guiding framework for inclusive event planning, supporting Irish's (2020) holistic approach that encompasses the entire event experience from pre-event communication through post-event follow-up. Third, it integrates insights from disability studies, audiology, event management, and tourism research into a unified conceptual model specific to the MICE context addressing the research gap where most existing studies examined either hearing loss in general social settings or disability accessibility in events without specific focus on hearing impairment.

Methodological Strengths and Limitations

The systematic approach employed in this review following PRISMA guidelines with explicit inclusion/exclusion criteria, transparent screening processes, and thematic synthesis enhances the reliability and replicability of findings. However, several limitations must be acknowledged. The literature at the precise intersection of hearing loss and MICE events remains sparse, necessitating inclusion of studies from adjacent settings (workplaces, educational institutions, public venues) where transferability should be interpreted cautiously. The restriction to English-language publications and reliance on three academic databases plus Google Search may have excluded relevant non-English studies and grey literature. Additionally, the geographic concentration of included studies in Western contexts limits generalizability to non-Western cultural settings where attitudes toward hearing loss and disability may differ significantly.

Future Research Directions

This review identifies several priority areas for future investigation. First, empirical research specifically examining MICE events across diverse cultural contexts is needed to test the generalizability of findings. Second, rapid technological evolution in automated speech recognition, AI-powered captioning, and remote sign language interpretation warrants updated systematic reviews as these technologies mature. Third, longitudinal studies examining the long-term impacts of inclusive MICE event design on professional networking outcomes, career advancement, and psychological well-being of individuals with hearing loss would strengthen the evidence base. Fourth, economic impact studies quantifying the return on investment for accessibility accommodations would provide valuable business cases for industry adoption.

Concluding Remarks

The MICE industry represents one of the most economically significant and communication-intensive sectors within global tourism. With hearing loss affecting approximately 1.57 billion people worldwide a figure projected to reach 2.5 billion by 2050 ensuring accessible and inclusive MICE events is both a moral imperative and an economic necessity. This systematic review demonstrates that while considerable barriers persist, evidence-based facilitators exist to create truly inclusive event experiences. The transition from viewing accessibility as legal compliance to embracing it as core value of event excellence requires cultural shift, sustained training, and universal design implementation. By synthesizing current evidence and proposing an integrated conceptual framework, this review provides foundation for both future research and practical action toward equitable participation for individuals with hearing loss in MICE events.

Ethical Consideration

This study is a systematic literature review based exclusively on published scholarly articles and did not involve human participants, animals, or the collection of primary data. Therefore, formal ethical approval and informed consent were not required. The authors declare that there are no conflicts of interest regarding the publication of this paper and confirm that the research was conducted independently without any financial, commercial, or personal relationships that could have influenced the study's findings or interpretation.

Data Availibility

The data supporting the findings of this study are derived from published articles identified through a systematic literature review conducted in accordance with the PRISMA 2020 guidelines. No primary datasets were generated or analysed beyond the published literature. All studies included in the review are cited in the reference list, and the data used to support the findings are available through the respective publishers or publicly accessible academic databases.

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