

ACCESSIBLE HERITAGE CITIES

Abstract

Accessible tourism has been increasingly important for tourism destination organizations to plan and develop for travellers with disabilities and their accompanies. However, heritage cities still remain many barriers for travellers with accessibility needs to experience and enjoy cultural heritages. These travellers are facing multiple challenges to accessing heritage cities, including physical, information and attitudinal barriers. The issue of accessible barriers becomes complex to solve as the diversity of accessible needs from different types and levels of disabilities. In addition, conservation requirements of heritage cities hinder the adaption of accessible designs to accommodate the needs of travellers with disabilities. Therefore, it is essential to apply advanced technologies to tackle accessibility issues in heritage cities. We suggest that three aspects of assistive technologies which should be conducted at heritage cities are accessible platforms, navigation systems, and accessible and interactive heritage interpretation.

Key words: Accessibility, assistive technologies, heritage, disability

Introduction

It is estimated that about 1 billion people with disabilities and 2 billion people who are caregivers, spouses, and children of a person with disabilities require accessibility in the world (Visit Britain, 2018). This represents a third of our global population which signifies the massive segment of the tourism market and the need for accessible tourism for all people, regardless of their disabilities and access demand. According to a market study reported by Open Doors Organization (ODO), there were 27 million disabled travellers on 81 million trips, spending USD58.7 billion in the US in the two years 2018-2019 (ODO, 2020). Eric Lipp, the ODO Executive Director projected that *'The true economic impact is higher, potentially even double, since people with disabilities typically travel with one or more other adults.'* (ODO, 2020, pp.1). In the UK, the *'Purple Pound'*, the value of disabled traveller spending, is experiencing significant increase in this market. The report from Visit Britain in 2018 shows that disabled travellers spent a total of £15.3 billion, contributing to 2.2% of all inbound, 16% of the domestic overnight trip and day visit spending in 2018 (Visit Britain, 2018). These results demonstrate the emerging market of accessible tourism if the destination can accommodate disabled travellers.

While accessible tourism and accessible cities have drawn increasing attention in the last years (Sisto et al., 2022), there are limited research on heritage cities and how to make them more accessible. Most of the studies on accessible tourism in heritage cities are in the Spanish context, such as Escudero (2022) and Martin et al. (2016). Meanwhile heritage cities with their historical values and conservation requirement can pose various challenges for making the cities more accessible for disabled travellers. This viewpoint, thus, aims to link the concept and practice of accessible tourism to tourist cities, particularly heritage cities, and call for more empirical evidence to improve the social justice for the participation of people with diverse needs in research. It discusses the challenges regarding the applications

and provide suggestions for the applications of assistive technologies as well as future studies on accessible tourism in heritage cities.

Accessibilities and tourist cities

Accessibility is often discussed within the context of person-environment relationship where individuals can access and approach into different environment independently (Iwarsson & Ståhl, 2003). In a broad view, accessibility denotes the state in which the environment can be accessed by anyone without discrimination based on personal characteristics, such as age, gender, physique, strength, and perceptive ability (Deffner et al., 2015). From a managerial perspective, it could refer to the usability of a product or service, meaning the ability of everyone to use a service or product regardless of their specificity (such as disabilities or age) (Deffner et al., 2015; Wan, 2023). The term accessibility is also divided into three dimensions, accessibility to the physical environment, to information, or to societal activities and services. In this way, it does not only refer to the infrastructure. Other aspects which enable people to access facilities, services, and goods as well as engage in activities or experiences, such as information, communication, and social inclusion, should be considered as well.

In tourism, with an increasing number of travellers who are with disabilities, the concept and practice of accessible tourism have been receiving significant attention. Although there is no single definition of accessible tourism, the most common element of this concept/practice is that the focus is on pre-defined disadvantaged groups, such as people with disabilities who need special access requirements (Qiao et al., 2021). Accommodating these access requirements requires continuing efforts from tourism service providers as well as the authorities in the design, planning and delivery of tourism services. Accessible design and universal design are parts of the efforts to add accessibility to otherwise inaccessible buildings and products. While the accessible design is based on two types of populations, i.e., those with and without disabilities, the universal design considers the whole population as one, comprised of individuals with diverse characteristics and abilities (Iwarsson & Ståhl, 2003). The universal design is defined as the design adjustment and accommodation approach to meet different needs of people regardless of their age, ability, gender or other background (Imrie, 2012; Wan, 2022). The latter is considered the most appropriate one due to its social inclusion and 'barrier-free' approach.

Endeavouring the accessibility of tourist destinations, products and services will ensure the effective exercise of human rights imperative and the inclusivity of people with disabilities. In this way, accessible tourism will assist the sustainable development of tourist destinations, especially regarding the social aspect. The accessibility level of offered tourist products, structure, and tourism development policies at destinations is of great importance for competitiveness (Natalia, et al., 2019; Vila, Darcy & Gonzalez, 2015). It will also contribute to the achievement of the UN's Sustainable Development Goals (SDGs), including SDG 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; SDG 11 – Make cities and human settlements inclusive, safe, resilient and sustainable (UNESCO, 2020). These are driving strategies for many destinations to achieve sustainable development plans (Darcy, Cameron & Pegg, 2010).

Challenges of accessible heritage cities

One of the most popular attractions in tourism is heritage sites. As heritage is often associated with the past and historical structure and design, the transformation of heritage, whether it is a tangible or intangible asset, faces multiple challenges in terms of conservation and modification. The integration of universal accessible designs and accommodation policies requires the intersectional collaboration of multiple stakeholders at destinations (Michopoulou, Darcy & Buhalis, 2015).

Even though the efforts to provide accessibility at heritage cities from academics and practitioners have been increasing recently, people with disabilities still face physical, information and attitudinal barriers at destinations (Buhalis, Darcy & Ambrose, 2012). Indeed, the efforts to improve the accessibility of heritage cities face various challenges due to the nature of heritage tourism and heritage attractions. Firstly, accessibility in heritage cities is a complex issue due to the diverse needs from the type and level of severity of the disability. Heritage tourism tends to attract a broad spectrum of the population, including a variety of demographic characteristics, from very young to a more elderly audience, with diverse social and physical capacities. There is also a wide range of heritage tourists, ranging from students to scholars, from casual to purposeful tourists (Nguyen & Cheung, 2014). This diversity contributes to the variety of disabilities, and hence the efforts to cater for their needs become challenging. For example, while travellers with sensory disabilities and neurodivergence possibly face more barriers in terms of accessing information and interacting with heritages, travellers with physical disabilities (on wheelchairs or using canes) experience difficulties in entering buildings and relics (Compagnon, 2020). Understanding the needs of each group of travellers with disabilities remains underestimated (Buhalis, et al., 2012). Additionally, as cities where efforts are made to become more accessible mainly concentrate on adjusting physical obstacles (Sørmoen, 2009), heritage cities may lack appropriate investments in improving information access and the interactive experience for their tourists with disabilities (Marasco & Balbi, 2019).

Another challenge for applying a better universal design of heritage cities is due to their historical architectural values and conservation requirements. Spatial design for accessibility has been prioritized for tourism destination planning in order to enforce social inclusion and practise residential citizenship (Plimmer, Pottinger & Goodall, 2006). However, providing accessible public transport and mobility access to heritage cities appears to be challenging when popular public transport infrastructure is unable to construct or improve due to conservation requirements. Additionally, the constraints of heritage space and resources are believed to cause spatial injustice to travellers, especially those with disabilities (Wan, 2023). While it is essential to have synergy in the preservation and modification of the historical environment for accessibility, striking for harmony between the two is a challenge for authorities of heritage cities. This challenge is especially relevant to the tangible heritage site, where physical accessibility is an issue.

In addition to the physical accessibility, which is discussed above, two other dimensions, i.e., accessibility to information and accessibility to societal activities and services are also concerned for tourism providers and authorities of heritage cities. In terms of information

accessibility, interpretation is the key. Heritage interpretation aims at providing knowledge and awareness of the site, promoting interest which leads to greater enjoyment and responsibility (Herbert, 1989). Interpretation at the destinations as well as attractions relies on tourist signages, which could be a challenge for people with learning disability or visual disability (Wan, 2022). Thus, to ensure the usage and enjoyment of all visitors, accessibility of heritage interpretation via its strategies, approaches, and messages, and extra services are major concerns. Moreover, to involve all people, regardless of their abilities or disabilities, the universal design of services and activities should be considered carefully.

In summary, proper adjustment of infrastructure, diversifying communication contents and methods of information distribution, and increasing the understanding of accessibility needs must result in better engagement of tourist service providers and communities with diverse disabilities at the destinations (Buhalis, et al., 2012). The living community, including businesses, must be engaged in the process of providing an excellent experience for disabled travellers in heritage cities. The active participation of businesses and communities can necessitate some degrees of adaption.

How can technologies tackle the issues?

Assistive technologies (ATs), which are the products or systems that support and assist people with disabilities, can change the global picture of the tourism industry by improving accessibility for people with special needs. Disabled travellers can use different infrastructures and facilities to access diverse information, plan their trip and experience heritage destinations. In this viewpoint, we highlight three aspects of assistive technologies which contribute to accessible tourism in heritage cities, including accessible platform, navigation system, and accessible and interactive heritage interpretation. The following practical implications of these three aspects of ATs are believed to help heritage cities become more accessible to travellers with disabilities.

First, ATs provide a more accessible platform for disabled travellers to access tourist destinations and activity information. This requires destination organization management (DMOs) to integrate accessibility strategies into their communication and marketing materials and channels. The concept of the search engine (e.g., Google) has transformed the behaviour of travellers around the world (Cacho et al., 2016). The provision of accessible websites will be a solid foundation for disabled travellers to reach information about heritage destinations. For example, AccessFind is an initiative for removing the accessibility barriers at any website and assembling all accessible websites for people with disabilities to access worldwide information (Compagnon, 2020). An investigation of 210 national tourism websites found that many websites had accessibility issues, including difficulties in navigating, text alternatives and adaptability (Vila, Gonzalez & Darcy, 2018). The Web Content Accessibility Guidelines 2.0 (WCAG 2.0) needs to be checked and complied. If these functions of Accessfind and WCAG 2.0 is applied to destination websites, it will advance the possibility for disabled travellers to gain confidence to book their trips.

However, to ensure the effectiveness of the accessible platform for tourism destination and activity information and to ensure potential solutions to reach a high level of engagement of

disabled travellers, heritage cities need to invite disability organizations and disabled residents to join the development of assessable tourism. These stakeholders can become tremendous forces for providing hospitality and enhancing the experience of disabled travellers (Buhalis et al., 2012). Their living experiences in heritage cities can underpin the decision-making process to guarantee the appropriateness of solutions. Also, disabled residents are experts and service providers to tailor high-quality trips for those with special needs. When the participation of multiple stakeholders is encouraged, it can strengthen the accessibility of heritage destinations.

Second, ATs can guide disabled travellers to navigate from their places to their destinations. Public transports are essential for long-distance travel and open the opportunity for disabled travellers to reach their favourite heritage sites. GBS-based mobility-supportive apps from Google have been long developed and used widely by travellers (Cacho et al., 2016). However, to highlight the accessibility of these apps, there are still gaps which hinder travellers with different disabilities to use. For example, for blind and low-vision people, the lack of audio-guided functions on the apps can cause difficulties for them to navigate (Compagnon, 2020). With people with neurodivergence, navigating is more complicated as the instructions for booking tickets and transfers between stations have not been prioritized for adjustment to match their needs.

In addition to this, heritage cities remain at a high level of inaccessibility as the building and infrastructure are parts of the heritage. The alteration of cultural and historic buildings or spaces demands a long and complex process (Plimmer, Pottinger & Goodall, 2006). Consequently, many heritage destinations have fewer spaces where travellers on wheelchairs or with mobility difficulties can visit. Given the idea that DMOs provide the service of robotic wheelchairs for rent or install wheelchair lifts at the destination, disabled travellers can enjoy their visit without the limitation of spatial spaces (Compagnon, 2020). With the same approach, the opportunity for disabled travellers to reach different objects at museums or historic relics will be higher if there are devices to support the change of height (mobility disabilities), light (vision disabilities) and the arrangement of object display (neurodivergence).

Third, DMOs can increase the experience of disabled travellers at heritage destinations through accessible and interactive interpreting approaches. Diversifying communication methods of heritage values is a key factor in improving the disabled traveller experience. ATs can underpin for creation of a wide range of heritage guides through animated and simple-multiple language printed travellers' booklets, audio-guide tours, and audio-descriptive interpretation for art performances and exhibitions. The investment in developing web- or app-based heritage storytelling solutions can enhance the accessibility of information for all travellers (Compagnon, 2020). Currently, the use of Artificial Intelligence assists in the creation of virtual and augmented reality where people can enjoy their heritage in different locations (Marasco & Balbi, 2019). This will be a tremendous movement for DMOs to leverage the accessibility and experience of disabled travellers at heritage sites (Darcy, McKercher & Schweinsberg, 2020). Disabled travellers have choices to access and enjoy their presentations of heritage values in printed, audio, videos or virtual reality at their paces.

Furthermore, optimizing the chance for disabled travellers to interact with local people and cultural values will enrich the visit memory of disabled travellers. For example, by collaborating and promoting the participation of local volunteers on the app 'Be My Eyes', DMOs can extend their engagement with disabled travellers (Compagnon, 2020). The expertise of local volunteers can help the disabled to find the availability of suitable services and exchange knowledge of heritages. More importantly, as being initiated in a few heritage sites such as Vatican City, and Venice, volunteers can offer accessible guided tours, and wheelchair/slow walking tours, for disabled travellers with designated destinations (UNESCO, 2020). This approach can optimize the social capital of destinations and bring the community together in supporting an inclusive society.

Conclusions

As the needs and values of disabled travellers have been increasingly recognised and considered, accessible tourism has attracted attention from both academics and the industry. Continuing efforts have been made in terms of design, planning and delivery of tourism services at the destination as well as attraction levels to ensure accessibility of both groups of populations, i.e., those with and without disabilities (Iwarsson & Ståhl, 2003). In heritage cities, the application of accessible tourism faces multiple challenges due to the nature of heritage tourism and heritage attractions. These include the diversity and complexity of visitors' disabilities and needs, the lack of attention to information access and interactive experience, and the preservation of the historical environment. To overcome the above challenges, we believe the employment of assistive technologies (ATs) in terms of accessible platform, navigation system, and accessible and interactive interpretation will facilitate the development of accessible heritage cities.

Furthermore, future studies on accessible heritage sites could focus on various conceptual and methodological aspects to further enhance inclusivity and ensure equal access for all individuals. One area of investigation could explore the effectiveness of ATs (e.g., virtual reality and augmented reality) in creating immersive and interactive experiences for people with diverse abilities. Future studies also can engage with experts in different disciplines to examine the role of inclusive design principles in the development and modification of heritage sites would be valuable. This could involve studying the impact of accessible infrastructure, tactile maps, audio guides, and multi-sensory exhibits on visitors with disabilities. Furthermore, research could be conducted to assess the effectiveness of community engagement activities, educational programs, and interpretive materials in promoting a deeper understanding of heritage sites for individuals with different cognitive or sensory abilities. Exploring the perspectives and experiences of individuals with disabilities through qualitative studies and online databases would also provide valuable insights for improving accessibility in heritage sites. Lastly, investigating the economic and social benefits using ATs in developing accessible heritage sites would help to highlight the importance of inclusive practices and encourage policymakers, heritage organizations, and stakeholders to prioritize accessibility in their planning and management efforts. This viewpoint, with the critical analysis of the accessible tourism challenges faced by heritage cities and the implications of ATs and future research suggestions, is hoped to add meaningful theoretical discussion of accessible tourism in the context of heritage cities as well as provide practical suggestions to develop accessible heritage cities.

Reference

- Buhalis, D., Darcy, S. & Ambrose, I., (2012). *Best practice in accessible tourism: Inclusion, disability, ageing population and tourism*. Channel View Publications.
- Cacho, A., Mendes-Filho, L., Estaregue, D., Moura, B., Cacho, N., Lopes, F. & Alves, C. (2016). Mobile tourist guide supporting a smart city initiative: a Brazilian case study, *International Journal of Tourism Cities*, 2(2), 164-183
- Compagnon, A.T., (2020). Innovation in Accessibility to Travel Freely. *Towards User-Centric Transport in Europe 2: Enablers of Inclusive, Seamless and Sustainable Mobility*, 60-72.
- Darcy, S., Cameron, B. & Pegg, S., (2010). Accessible tourism and sustainability: a discussion and case study. *Journal of Sustainable Tourism*, 18(4), 515-537.
- Darcy, S., McKercher, B. & Schweinsberg, S., (2020). From tourism and disability to accessible tourism: a perspective article. *Tourism Review*, 75(1), 140-144.
- Deffner, A., Psatha, E., Bogiantzidis, N., Mantas, N., Vlachaki, E., & Ntaflouka, P. (2015). Accessibility to culture and heritage: designing for all. *Proceedings of the AESOP*. University of Thessaly.
- Escudero, A. (2022). Urban Accessibility in World Heritage Cities. Accessibility Considerations in Pedestrian Routes in Historic City Centres. *Studies in health technology and informatics*, 297, 499-506.
- Iwarsson, S. & Ståhl, A. (2003). Accessibility, usability and universal design—positioning and definition of concepts describing person-environment relationships, *Disability and Rehabilitation*, 25(2), 57-66.
- Imrie, R. (2012). Universalism, universal design and equitable access to the built environment. *Disability and rehabilitation*, 34(10), 873-882.
- Herbert, D.T. (1989). Does interpretation help?, in Herbert, D.T., Prentice, R.P. & Thomas, C.J. (Eds), *Heritage Sites: Strategies for Marketing and Development*, Avebury, Aldershot.
- Lipp, E. & Van Horn, L., (2011). *Marketing Outlook Forum 2017—Open Doors Organization (ODO) Forecast*, Open Doors NFP.
- Marasco, A. & Balbi, B., (2019). Designing accessible experiences for heritage visitors through virtual reality. *E-review of Tourism Research*, 17(3).
- Martin, J. C., Marrero-Rodríguez, J. R., Moreira, P., Roman, C., & Santana, A. (2016). How access transport mode to a World Heritage City affects visitors' experienced quality. *Tourism Economics*, 22(2), 207-226.
- Michopoulou, E., Darcy, S., Ambrose, I., & Buhalis, D. (2015). Accessible tourism futures: the world we dream to live in and the opportunities we hope to have. *Journal of Tourism Futures*, 1(3), 179-188.
- Natalia, P., Clara, R.A., Simon, D., Noelia, G. & Barbara, A. (2019). Critical elements in accessible tourism for destination competitiveness and comparison: Principal component analysis from Oceania and South America. *Tourism Management*, 75(2019), 169-185.
- Nguyen, T. H. H., & Cheung, C. (2014). The classification of heritage tourists: A case of Hue city, Vietnam. *Journal of Heritage Tourism*, 9(1), 35-50.
- Open Doors Organization (2020). *Market studies*. <https://opendoorsnfp.org/market-studies/>

- Plimmer, F., Pottinger, G. & Goodall, B., (2006). Accessibility Issues for Heritage Properties: a Frame of Mind, In *Shaping the Change. XXIII FIG Congress*. http://fp-hid-1076751.testsider.dk/resources/proceedings/fig_proceedings/fig2006/papers/ps08/p_s08_05_plimmer_etal_0269.pdf
- Qiao, G., Ding, L., Zhang, L., & Yan, H. (2022). Accessible tourism: A bibliometric review (2008–2020). *Tourism Review*, 77(3), 713-730.
- Sisto, R., Cappelletti, G. M., Bianchi, P., & Sica, E. (2022). Sustainable and accessible tourism in natural areas: A participatory approach. *Current Issues in Tourism*, 25(8), 1307-1324.
- Sørmoen, O. (Ed.). (2009). *Accessibility to Cultural Heritage: Nordic Perspectives*, Nordic Council of Ministers.
- Vila, T.D., Darcy, S. & González, E.A., (2015). Competing for the disability tourism market—a comparative exploration of the factors of accessible tourism competitiveness in Spain and Australia. *Tourism Management*, 47(2015), 261-272.
- Vila, T. D., González, E. A. & Darcy, S., (2018). Website accessibility in the tourism industry: an analysis of official national tourism organization websites around the world, *Disability and rehabilitation*, 40(24), 2895-2906.
- Visit Britain (2018). *The value of the Purple Pound*. <https://www.visitbritain.org/business-advice/value-purple-pound>
- UNESCO (2020). *Accessible cultural tourism in the old city of Luxembourg*, <https://whc.unesco.org/en/canopy/luxembourg/>
- Wan, Y. K. P. (2022). Accessibility of tourist signage at heritage sites: an application of the universal design principles. *Tourism Recreation Research*, (2022), 1-15.
- Wan, Y. K. P. (2023). Tourist accessibility of heritage spaces through the lens of spatial justice. *Current Issues in Tourism*, (2023), 1-17.
- Wan, Y. K. P., Lo, W. S. S., & Eddy-U, M. E. (2022). Perceived constraints and negotiation strategies by elderly tourists when visiting heritage sites. *Leisure Studies*, 41(5), 703-721.
- World Tourism Organization (WTO) (2014). *Manual sobre turismo Accesible para todos: principios, herramientas y buenas practicas – Modulo i: Turismo Accesible – Definicion y context*, OMT, Madrid.