Note

How do visually impaired tourists travel?:
Exploring challenges and difficulties that visually disabled people face during traveling using qualitative method

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Abstract

This study investigates the travel experiences of visually impaired tourists, focusing on the challenges they face, their awareness of accessible tourism services, and the role of self-advocacy in improving their travel experiences. Through qualitative interviews with 17 visually impaired adults, the research highlights the importance of knowledge, awareness, and empowerment in enhancing accessibility in the tourism industry. The findings reveal that many visually impaired individuals rely heavily on family members for travel assistance, leading to a lack of awareness about their rights and available technologies. The study emphasizes the need for inclusive design, multi-sensory tourism experiences, and digital accessibility to foster independence and improve the travel experience for visually impaired individuals.

Keywords

visually impaired travelers, accessible tourism, self-advocacy, sensory tourism, digital accessibility

1. Introduction

1.1 Definition of accessible tourism

Accessible tourism is the ongoing endeavor to ensure tourist destinations, products, and services are accessible to all people, regardless of their physical or intellectual limitations, disabilities, or age [European Network for Accessible Tourism, 2010]. According to estimates provided by the World Health Organization and the World Bank in 2011, the global population of people with disabilities (PWD) was approximately 650 million, accounting for 10-20 % of the total population. These projections suggest that the number of PWD will rise to 1.2 billion by 2050 due to various socio-economic factors [Darcy, 2009].

The tourism industry requires innovative approaches due to the aging population, and hotel managers have recognized that offering accessible services gives them a competitive advantage [Chakraborty and McMillan, 2020]. Despite studies dating back to 1970 indicating that 70 % of individuals with disabilities have the financial capacity to travel, many choose not to do so due to a lack of suitable options. Furthermore, the Australia Institute of Health and Welfare's 2018 survey revealed that there are 25.5 million people with disabilities aged 5 and older in the United States, while in Australia, 17 % of the population is disabled in some way [AIHW, 2022].

Although accessible tourism aligns with the Sustainable Development Goal of reducing inequality and has positive economic implications, the importance of accessible tourism to the economy is often overlooked by stakeholders in the tourism sector. A case in point is New Zealand, where accessible tourism contributed 16.2 billion dollars to the country's GDP in 2019. Furthermore, it is projected to generate potential income of 88.6 billion Euros by 2025, making it a highly profitable market [Gillovic and Mclntosh, 2020].

A study conducted by the University of Surrey (U.K.) in 2012 revealed that the tourism sector in Europe loses up to 142 billion Euros annually due to inadequate infrastructure and misconceptions about PWD. However, individuals with special needs who traveled within European Union countries in 2012 contributed "394 billion Euros and 8.7 million jobs to the European economy" [Shimosakai, 2018]. Although Europe is not fully accessible, it was still able to generate substantial economic benefits from disabled visitors. With the current economic crisis in Europe, alternative approaches to address these economic issues need to be explored.

1.2 Visual impairment tourism

Visual impairment is part of inclusive tourism. They consist of 8 % of tourists with a disability in England before people with mobility difficulties and people with learning difficulties [European Network for Accessible Tourism, 2014]. There are several organizations and NGOs worldwide that have been working to assist visually impaired people in many sectors such as education and tourism. Both education and tourism are linked. Education empowers visually impaired individuals intellectually and, therefore, will help them find a job and build their career. When they are financially able, they will be able to contribute to the tourism growth. Some of these organizations are the United Nations. The United Nations has the UNWTO (World Tourism Organization) agency that promotes sustainable and responsible tourism and the importance of tourism as socio-economic growth. The following are the most famous NGOs assisting visually impaired people in education and employment:

- World Blind Union:
  An international organization located in Toronto, Canada, with 190 member countries, they represent 253 million people who have different levels of vision impairment. Here, visually impaired and sighted people can find information about different events, awareness about visually impaired

people's rights, and services about education and jobs.

- The International Council for Education of People with Visual Impairment:
  Their main focus is education and rehabilitation. They work with governments, organizations, and visually impaired people. According to ICEVI, there are 285 million individuals who are considered blind or visually impaired: 39 million blind and 246 million with low vision worldwide. They have offices on all continents.
- Perkins International:
  A school for the blind, also focuses on providing quality education. They work with all sectors such as hospitals and schools, as well as families. Their headquarters are in the U.S.A., and they have other offices in India, China, Peru, Kenya, Mexico, and Brazil.

The following are non-government organizations promoting accessible tourism:

- Traveleyes:
  Based in the United Kingdom, they organize inclusive trips that bring sighted people and visually impaired people together. Every visually impaired traveler is paired with a sighted traveler as their visual guide or sighted guide.
- The Blind Foundation (New Zealand):
  They assist visually impaired travelers with everything related to traveling, planning, recommendations, advice, and providing resources.
- Seeing with Photography:
  An art workshop in New York, U.S.A. The workshop is a collaboration between sighted and visually impaired photographers. Visually impaired photographers understand the object by touch and other senses, then they take the photograph. This organization aims to flourish blind individuals' skills in photography and expression through alternative ways.

1.3 Research problem background

This study addresses a significant gap in the literature regarding accessible tourism by employing qualitative research methods to gather in-depth insights from participants. Few studies have been conducted on tourism for visually impaired travelers. Also, research has focused on specific countries. Unlike some of the previous studies that primarily relied on quantitative approaches and surveys to collect data, this research sought to avoid potential offense towards individuals with disabilities by conducting interviews as the primary source of data collection. Specifically, the focus of this study centers on visually impaired individuals, as existing research has predominantly concentrated on wheelchair disabilities, despite visually impaired individuals comprising a slightly larger percentage (8 %) of disabled travelers compared to wheelchair users (7 %) in England.

This study aims to address the following questions: What are the underlying challenges faced by visually impaired individuals during travel, and how do these challenges impact their decision to travel? And, what is the current experience of visually impaired travelers, and to what extent are they satisfied with the services they deal with?

1.4 Research gap

Previous research has emphasized the significance of educating individuals among sighted people and providing them with training. However, these studies have often overlooked the necessity of increasing awareness within the visually impaired community. This study sought to address this gap by exploring the personal challenges faced by visually impaired individuals in the context of accessible tourism.

1.5 Research objective

The main objective of this study is to explore the traveling experience of visually impaired tourists to define the real challenges and issues they face while traveling. To determine the extent to which visually impaired people are aware of their rights as tourists and the traveling barriers that exist so they can successfully convey their requirements and preferences to pertinent stakeholders. The research aims to provide visually impaired tourists with useful information and understanding about the obstacles they face in accessible tourism. The study aims to increase visually impaired people's knowledge of the services and technologies that can improve their travel experiences, empowering them to advocate for themselves and communicate their needs to travel agencies. This will improve services for business growth and increase accessibility in the tourism industry by understanding the unique challenges faced by visually impaired travelers and promoting self-advocacy.

1.6 Research definition and keywords

1.6.1 Accessible tourism

According to the European Network for Accessible Tourism [European Network for Accessible Tourism, 2010], accessible tourism encompasses the ongoing efforts to ensure that all individuals, regardless of their age or physical and mental limitations, can access tourist attractions, goods, and services. The term "accessible" extends beyond "disability" or "impairment" and includes a wide range of individuals, such as seniors, those with visual impairments, individuals with intellectual disabilities, parents with strollers, and individuals with temporary disabilities. It is important to note that as individuals age, there is a 59 % likelihood of experiencing limitations in their daily activities due to impairments.

The term "disability" has garnered criticism for its negative connotations and its tendency to stigmatize individuals with accessibility needs. The use of this label perpetuates two myths and issues: It often leads people to associate disability solely with individuals using wheelchairs, thus relegating physical barriers as the primary concern when discussing individuals with disabilities. However, disabilities and access needs can encompass a broad spectrum, including intellectual, sensory (such as hearing and vision impairments), and chronic pain

conditions. Many disabilities and access needs may not be immediately apparent or visible.

The label itself can be offensive as it places the burden of responsibility on the individual rather than considering how societal policies, physical spaces, languages, and communications structure accessibility. The focus on the individual's condition, prior to considering broader implications, places undue emphasis on the individual's abilities and responsibilities [Cockburn-Wooten and Mclntosh, 2020].

1.6.2 Types of canes/aids

- All-white cane: Indicates that the individual is completely blind.
- White cane with a red bottom: Indicates that the person has some usable vision.
- White cane with red stripes: Indicates that the person is deaf/blind.
- Guide cane: Shorter than a white cane and used to identify obstacles, such as curbs or stairs.
- Smart cane: Equipped with devices that indicate obstacles ahead of time, used in countries such as India and France.
- Tactile strips: Placed on curbs and the first and last steps of stairways to guide blind people [Central Association for the Blind and Visually, 2020].

1.6.3 Types of vision according to Industries for the Blind and Visually Impaired (IBVI)

- Visual acuity: The number indicates the clarity or sharpness of the eyes by the measurement chart used to test eyes.
- Visually impaired: WHO (World Health Organization) defines "visual impairment" as a general phrase used to refer to all types of vision loss, from minor to profound. The term "blindness" specifically refers to individuals who can only perceive light. The WHO employs terms like "blindness" and "low vision" to distinguish between various degrees of visual impairment [World Health Organization, 2022]. According to IBVI, when someone is visually impaired, they still have some functional vision despite having some visual loss. People with visual impairments may have varying degrees of visual acuity or vision. They are able to see shapes, light, or, in some cases, read large text with the help of magnifying glasses. They can use mobility aids like canes to move around.
- Blindness: This term is frequently used to refer to people with minimal to non-existent functional vision. Blind people may have some residual vision, such as the capacity to discern between light and dark or sense movement, but they cannot rely on their eyesight to carry out daily tasks. Blind people usually rely on non-visual means of interaction with their surroundings, such as braille, tactile aids, service dogs, and mobility aids.

In the U.S.A., there are four levels of blindness:

- Partially sighted: A person who is partially sighted has only partial vision in one or both eyes.
- Low vision: When vision cannot be improved by contact lenses or glasses, and the person has visual acuity of 20/70 in the better-seeing eye.
- Totally blind: Total loss of sight.
- Legally blind: The best-seeing eye is 20/200 or less. However, if the person can reach 20/20 vision with the use of visual aids, they are not considered legally blind [Industries for the Blind and Visually Impaired, 2022].

2. Literature review

2.1 The ignored opportunity of accessible tourism

Accessible tourism has been overlooked due to the misconception that individuals with special needs have limited financial means and rely primarily on pensions. However, tourism records indicate that the field of accessible tourism is experiencing growth, as certain European countries and parts of North America have recognized its importance and achieved competitive advantages through successful examples. One notable instance is the Divi Hotels Resort located on Bonaire Island, which has achieved complete accessibility [Souca, 2010].

The tourism industry often assumes that individuals with disabilities lack the financial capability to engage in travel activities, relying instead on familial or government support. Consequently, insufficient efforts have been made to improve the accessibility of tourism offerings. The lack of compelling success stories in accessible tourism further restrains the motivation of travel agencies to develop and promote more inclusive travel packages. However, despite these challenges, the accessible tourism market is growing, and ignoring its potential would result in significant missed business opportunities for certain regions and countries. This realization has prompted some nations to actively work towards providing accessible tourism options. For instance, the case of Divi Hotels Resort on Bonaire Island in the Caribbean Sea serves as an example of how accessible tourism can become a competitive edge. The resort's promotional materials feature images of access ramps designed to accommodate wheelchair users, contributing to its reputation as a fully accessible destination [Souca, 2010].

2.2 Competitive advantage

Accessible tourism research has predominantly emphasized the economic advantages associated with addressing the needs of this specific population segment [Darcy and Dickson, 2009]. The implementation of accessible tourism initiatives holds the potential to yield substantial economic benefits for destinations, such as augmented revenue streams, employment opportunities, and enhanced community infrastructure [Buhalis and Michopoulou, 2011]. Moreover, embracing accessible tourism can facilitate destination diversification and attract a wider range of visitors, thereby broadening the destination's appeal.

2.3 Barriers and challenges in accessible tourism (facing people who need accessibility in general)

The inclusion of persons with disabilities (PWD) in travel and tourism encounters several barriers, posing significant

challenges. Research has identified a range of obstacles, encompassing physical barriers such as inaccessible buildings and transportation systems, as well as attitudinal barriers characterized by negative perceptions of disability. While investing in accessible infrastructure is crucial, it is equally imperative to foster a shift in attitudes towards individuals with disabilities [Buhalis and Darcy, 2011].

Moreover, barriers also arise from various suppliers involved in the tourism sector, including travel agencies, governmental entities, and investors, who often fail to provide high-quality customer service tailored to the specific needs of PWD. PWD encounter a multitude of challenges during their travels, including limited information regarding accessible destinations and services, as well as interactions with service providers who lack sensitivity towards their requirements. Consequently, service providers within the tourism industry must cultivate greater awareness and undergo appropriate education to effectively address the needs of individuals with disabilities [McCabe and Johnson, 2013].

- Physical barriers:
  Steps, narrow entrances, and uneven terrain are examples of physical barriers that might restrict access for those with mobility issues.
- Communication barriers:
  Those with hearing or vision impairments may find it challenging to access information due to barriers such as a lack of sign language interpreters, the absence of captioning or audio description in movies, and other types of inaccessible communication.
- Attitudinal barriers:
  Unfavorable beliefs and presumptions about people with disabilities can result in exclusion and discrimination.
- Financial barriers:
  Travel and tourism may be more expensive and less accessible for people with disabilities due to the additional costs connected with accessible lodging and transportation.
- Informational barriers:
  Individuals may find it challenging if they do not have access to accurate information about facilities and services that are accessible.
- Legal barriers:
  Legal impediments, such as insufficient or conflicting accessibility regulations and standards, can prevent accessibility in the tourism sector [Michopoulou and Buhalis, 2013].

There are two types of barriers:

- Intrapersonal barriers:
  Related to physical or mental perception, functioning ability, and stress.
- External barriers:
  Related to the environment, such as society, financial status, information, time, infrastructure, and customer service [World Tourism Organization, 2019].

2.4 Barriers and challenges in accessible tourism (visually impaired tourists)

Researchers have paid little attention to other physical disabilities, such as sight impairment, despite a rise in tourism research examining the experiences of persons with mobility difficulties in recent years. Furthermore, there is little evidence that the tourism industry truly comprehends or appeals to this specific group of tourists [Šintáková and Lasisi, 2021].

The traditional idea of travel as a visual, sightseeing experience, which seems to support the idea that traveling is meaningless if one cannot see, might be used to justify this exclusion. Only in the past ten years have studies focused on the experiences of visually impaired tourists become more popular. There were no reports of issues during boarding or disembarking; however, those in wheelchairs and those who are blind reported having different fears. Missing the flight announcement and dismissing unnecessary interactions with other passengers out of concern for tripping were common concerns. The boarding and exiting procedures, however, were cited by physically challenged passengers as being the most difficult for wheelchair users, particularly when transferring from the wheelchair to the airplane seat. The respondents noted that a significant obstacle was also the lack of employee comprehension and awareness [Poria et al., 2010].

It is not important to understand what percentage this group makes up in order to better understand the situation of visually impaired persons in the tourism industry; rather, it is important to comprehend the effects and impacts of visual impairment on these individuals' lives and engagement in tourism. Visual impairment primarily affects independent movement, perspective, and cognitive processes [Šintáková and Lasisi, 2021].

The information deficit and limited mobility for those with visual impairments go hand in hand. Independent and free mobility becomes much more difficult when information about the environment is distorted, incomplete, or lacking. This issue is particularly glaring for people who are blind. Less than 90 % of them can only roam freely along routes they have already mastered. They rely on compensatory devices (often a guide dog, a guide cane, or assistive technology) or the assistance of a personal guide. Near-blind people may walk around and orient themselves in strange environments to some extent, but they require particular lighting, contrast, and color conditions to enable or at least facilitate orientation. Additionally, those who are visually handicapped react less quickly in dire situations and require more time to adjust [Kvtoová, 2008].

Limitations and obstructions to communication, as well as developing interpersonal relationships, are caused by the information gap. A person who is blind may not always be able to comprehend their environment or react to stimuli appropriately [Květoňová, 2008].

The barriers are divided into:

- Technology:
  Technology is increasingly playing a significant role in the realm of accessible tourism. Numerous studies have highlighted the usefulness of technology, such as websites and mobile applications, in facilitating communication between service providers and individuals with disabilities, as well as in providing information about accessible locations and services.
- Decision-making for PWD:
  The lack of accessible information poses a significant challenge for individuals with disabilities when making travel decisions. Consequently, they rely on various sources to acquire and verify information. It is important to note that access to information is not only crucial for individuals with disabilities but also for those without disabilities or those who do not identify themselves as having a specific type of disability [Buhalis and O'Connor, 2005].

2.5 A survey on the use of mobile applications for people who are visually impaired

Despite the prevalence of visual impairments (i.e., blindness or low vision), few studies have been conducted concerning people with disabilities using mobile applications. Mobile apps are used by this population around the world, according to the current study. We surveyed 259 blind and partially sighted people via the internet. The associations between demographic characteristics and mobile app use were examined using descriptive statistics and bivariate tests. Middle-aged adults scored significantly higher on practicality than young and old adults, with over 90 % strongly agreeing that special apps are useful. A further difference between low vision and blind participants was perceived as being less accessible to special apps ($p < .05$). Using apps specifically designed for people with visual impairments is common among persons with visual impairments to accomplish daily tasks. Mobile apps are also acceptable to this population, but they would like new apps and improvements. App developers who create apps for visually impaired individuals need to refine and test those apps. Providing effective instruction to students or clients requires practitioners to understand app usage. App usage among people with visual impairments is examined in this study as a preliminary finding [Griffin-Shirley et al., 2017].

2.6 Smartphone usage by expert blind users

Researchers examined smartphone usage patterns of tech-savvy users with visual impairments who have used TalkBack for five or more years. The paper found utilization designs that were new and different than past studies, including utilization of explore by touch with directional motions to access apps quickly (imitating single tap), broad directional motions used rather than soft keys, dependence on voice and external consoles for content input, using apps (for gaming, communication, video streaming) similar to sighted clients, utilization of TTS integration engines and voice, and some tips to acquire knowledge and master smartphone accessibility usage. The main motivation reason behind mastering the speed equality with sighted users is something that was not studied by researchers before.

In several instances, participants sought sighted assistance when their smartphone accessibility failed. Getting started with TalkBack requires sighted assistance because TalkBack tutorials are limited, and not all participants were aware that

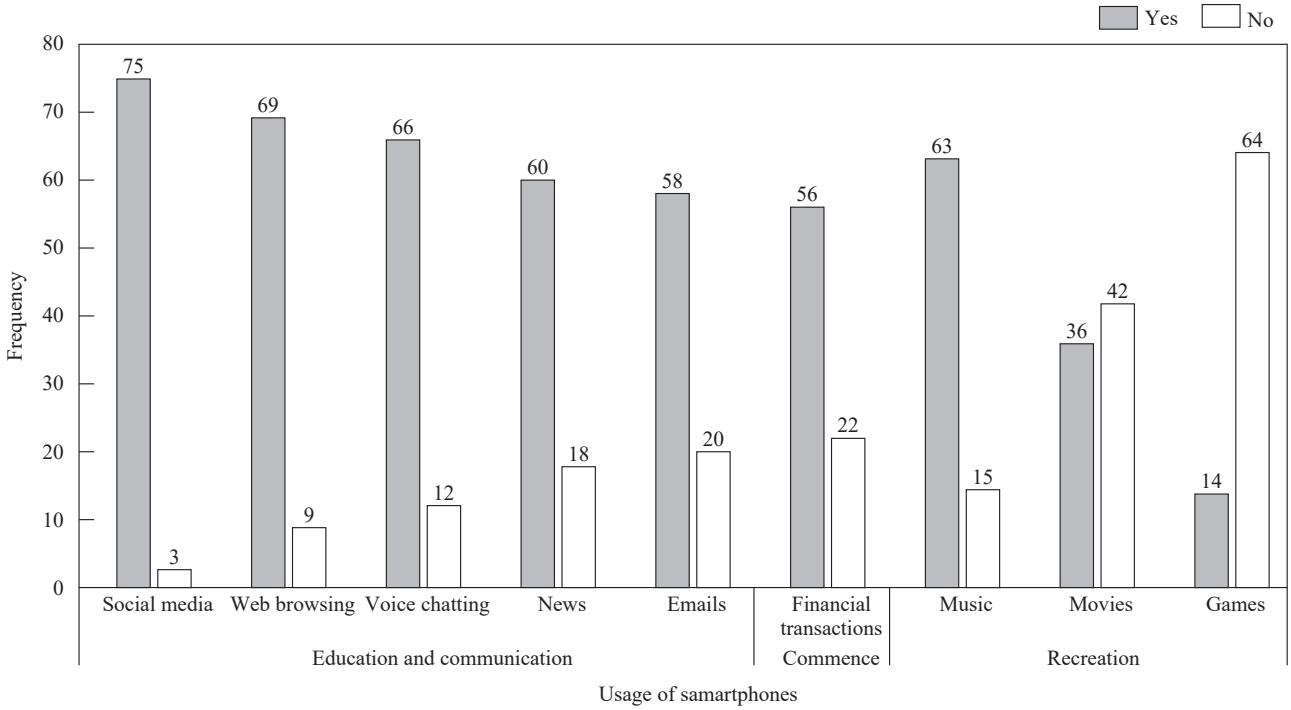

Figure 1: Usage of smartphone by individuals with different types of visual impairment
Source: Abraham et al. [2021].

there is a tutorial. A second concern was that participants frequently received emails with text embedded in an image as well as WhatsApp messages. Speak! was mentioned by a few participants. Others took sighted assistance to read text in images using the KNFB Reader application [Jain et al., 2021].

3. Methodology

3.1 Research design

The main purpose of this study is to understand the issues facing visually impaired people while traveling from the customers' point of view. The research design for this study was qualitative in nature, utilizing a phenomenological approach. The purpose was to gain an in-depth understanding of the research problem from the perspective of visually impaired customers. One-on-one, open-ended interviews were conducted with 17 adult participants who were visually impaired. The phenomenological approach allowed the researchers to explore the experiences and viewpoints of the participants. The primary interviewer had prior experience conducting qualitative studies, and underwent sensitivity training to minimize bias. To ensure consistency, a standardized interview protocol was followed, but flexibility was allowed for follow-up questions based on participant responses. The interviewer maintained a neutral tone, avoided leading questions, and provided sufficient time for participants to elaborate on their experiences.

3.2 Data source education and communication

The researcher established contact with organizations that support visually impaired individuals—one specializing in activity design and the other in education. These organizations assist in converting academic texts into braille with the help of volunteers. The researcher's contact information was provided to visually impaired individuals by the organization, allowing those interested in participating in the study to reach out directly. A total of 18 individuals expressed interest in participating; however, one did not attend the scheduled interview, resulting in a final sample of 17 participants. All interviews were conducted online via Zoom and Skype.

3.3 Sampling

The sampling method used in this study was purposive sampling. Participants were selected based on their ability to travel and their marital status. Those who were financially capable of traveling were chosen, and the sample included 6 married participants and 11 single participants, the selection criteria aimed to reflect participants' dependency on others when traveling. The ages were between 25 to 33, 16 male and 1 female (see Table 1).

3.4 Data collection

The data collection process involved conducting one-on-one, open-ended interviews with the visually impaired participants. A standardized interview protocol was developed in advance, consisting of questions about participants' experiences, knowledge, opinions, and feelings related to travel and accessibility.

Table 1: Participants number and marital status

Participants	Marital status
Participant 1	Single
Participant 2	Single
Participant 3	Married
Participant 4	Single
Participant 5	Single
Participant 6	Single
Participant 7	Married
Participant 8	Married
Participant 9	Single
Participant 10	Married
Participant 11	Married
Participant 12	Married
Participant 13	Single
Participant 14	Single
Participant 15	Single
Participant 16	Single
Participant 17	Single

The protocol also included questions about participants' experiences with nature and vacation, as well as any unpleasant experiences they may have had while traveling.

The interviews were conducted online in English, as the researcher was located in Japan and faced a language barrier for on-site interviews. The participants who could speak English were selected for the online interviews. Prior to the interviews, participants were contacted and informed about the purpose of the study. Ethical considerations, such as obtaining informed consent, maintaining confidentiality, and open communication, were followed throughout the data collection process. All participants were asked the same questions in the same order, with additional probing and follow-up questions added during subsequent interviews. Each interview session was recorded with the participants' consent and transcribed using Atlas.ti. The transcripts were analyzed to identify the most frequently mentioned topics and to gain an in-depth understanding of participants' experiences and perspectives.

Searching for participants started on February 1st, 2023. After receiving the email addresses of the participants, a Google consent form was sent to the participants to sign online. After signing the consent, phone numbers were exchanged, and one-on-one interviews were conducted with each participant online. The participants understood that the purpose of this interview was to complete master thesis research. The first interview took place on February 11th, 2023.

3.5 Data analysis

The data analysis involved examining the transcribed interviews to identify the most frequently mentioned topics and gain an in-depth understanding of participants' experiences and perspectives. The analysis aimed to uncover common themes and patterns within the data. Atlas.ti software was utilized to assist in organizing and analyzing the qualitative data.

- Transcription & initial coding:
  Interviews were uploaded to Atlas.ti. Open coding was applied to identify recurring themes (e.g. transportation barriers, technology use).
- Thematic grouping:
  Code were grouped into categories (e.g., challenges, positive experience). Memos were used to track emerging patterns.
- Review:
  All transcripts were reviewed to confirm all codes are suitable then a thematic tree was designed based on these codes. Code and sub-code were explained separately.

The qualitative study using a phenomenological methodology provided insights into the perspectives of visually impaired individuals regarding the accessibility of tourism. The ethical procedures followed during data collection ensured the participants' rights and privacy were protected. The standardized interview protocol facilitated a comprehensive understanding of participants' experiences, knowledge, opinions, and feelings related to travel and accessibility.

The questions were designed to probe the convenience of facilities provided for people with disabilities in hotels, technology, and transportation, the challenges participants experienced, their use of assistive technology, and their thoughts on the future of accessible tourism. The interview protocol also included questions about participants' experiences with nature and vacation, and any unpleasant experiences they may have had while traveling.

- Questions about their experience included:
  What does vacation mean to you?
  Have you ever had any unpleasant experience while traveling?
- Can you give me examples of how you can enjoy nature?
  Questions about their knowledge included:
  Have you ever used any assistive technology while traveling? If yes, what kind of apps or devices, and why do you use them? Are there any defects that need to be improved?
- Questions about their feelings included:
  Have you ever felt that you were missing out on getting the experience of a sighted person during a trip?
  What do you feel when you hear the word "traveling"?
- Questions about their opinions included:
  How do you think we can develop tourism for visually impaired people that rely on scenery?
  How do you see the future of accessible tourism?

The researcher looked at the issues, challenges, and positive moments the participants experienced on their journeys, as well as how much they depended on infrastructure, technology, and other people. The analysis is broken down into several smaller themes, such as:

- Assistive technology and tools
- Technology and tools limitation
- Customer satisfaction
- Customer efficiency
- Relying on others—independence and dependency
- Accessibility—transportation and information

The study investigates the participants' use of assistive aids and technology, including screen readers and smartphone applications like "Seeing AI" and "Be My Eyes." It also covers the drawbacks and difficulties of using such technology, as well as how dependent the participants are on others to do tasks like reading menus or navigating strange surroundings.

The research probes into the participants' interactions with employees and services in greater detail, assessing both their satisfaction and effectiveness. It draws attention to both instances of pleasant interactions and issues with discrimination, accessibility, and information availability.

The investigation also looks at how independent and dependent the participants were while traveling. It disproves the idea that blind people often show reluctance to rely on others by stressing the participants' readiness to ask for help and actively participate in social activities. The analysis also includes discussion of the participants' accessibility experiences, notably in the areas of transportation and information. The challenges of unavailable information sources, a lack of information, and the requirement for better advertising and accessibility features are all addressed.

Each category was analyzed separately while reviewing the complete set of interviews. They were selected based on relevance to the topic and to the participants' experience and what the participants emphasized during their answers. Sub-themes stem from each super theme, and codes were assigned to each super/sub theme.

3.6 Thematic analysis

The researcher used thematic analysis, a method widely used in qualitative research, to explore participants' lived experiences, perspectives, practices, and the factors that influenced their decision to travel. Thematic analysis serves the purpose of the phenomenological approach. The strategic selection of data is made as part of the study design, which also includes the main issues, objectives, theoretical framework, and literature review. The researcher typically examines how distinct themes appear similar, how they differ, and what sorts of connections might exist between them [Saldana, 2013].

The phases of thematic analysis are as follows:

- Preparation:
  Transcribing the recorded interviews using the software Atlas.ti. The transcripts were read several times to familiarize the researcher with the data. The researcher checked the recorded answers to correct unclear quotes on the transcripts.
- Generating initial codes:
  After reading the transcripts, the researcher came up with a

list of interesting ideas related to the paper. A list of codes was generated from the interviewees' answers.
- Defining themes:
  Each theme was given a name that describes the data the theme is presenting.
- Producing report:
  The researcher selected clear examples for each code and theme to produce the final report.

Following the transcription of interviews, the researcher began to read the transcripts several times to familiarize themselves with the data. They then coded the interviews and made notes on any relevant themes. The researcher re-coded the data until they finalized the codes, ensuring the same interpretation of the codes was applied across all interviews. This process was completed after coding all the transcriptions.

To find the ideal approach to respond to the research question and achieve the research objectives, it is recommended to rework the chosen codes used in the qualitative data.

4. Analysing

4.1 Technology

4.1.1 Assistive technology and tools

This section focuses on the participants' knowledge and usage of assistive technology and tools related to visual impairment. It highlights the importance of staying updated with the latest technological advancements and innovations. One notable example is the Wewak smart cane, which utilizes ultrasound technology and a connected smartphone app to notify users of obstacles and provide various features such as voice feedback and navigation assistance. However, despite the availability of such innovative solutions, none of the participants mentioned being aware of or utilizing this technology.

Participants mentioned using certain software applications such as "Seeing AI," "Be My Eyes," and "Soundscape." "Be My Eyes" is an app that connects visually impaired individuals with sighted volunteers who assist them with tasks like describing visual information or reading labels. Additionally, some participants used screen-reader software like JAWS on Windows computers or Voiceover on Apple iPhones to interact with various apps. However, it was noted that the effectiveness of the "Be My Eyes" app could be hindered by factors like a lack of available volunteers or poor connectivity.

Another mentioned application was "All Aboard," which helps blind individuals locate bus stops. Furthermore, one participant mentioned using CNIB (Canadian National Institute for the Blind) mobility assistance services to learn their travel routes. In terms of physical tools, participants used different types of canes based on their specific visual impairments. Examples included guide canes for identifying obstacles and canes with white and red stripes to indicate complete blindness or visual impairment.

4.1.2 Technology and tools limitations

This section discusses the limitations and challenges associated with assistive technology and tools. Some participants expressed a desire for braille menus in restaurants but mentioned not being aware of any establishments offering this service. They relied on friends, family, or staff to read menus but acknowledged that having braille menus as an option would be beneficial.

However, one participant expressed skepticism about the usefulness of braille markings in other places, questioning how visually impaired individuals would know they exist. Although service dogs were not utilized by the participants due to their high maintenance requirements, they mentioned tactile cues, such as the yellow path on roads, as helpful. While some participants found these cues helpful, others noted that they were not always effective, particularly in cold countries where de-

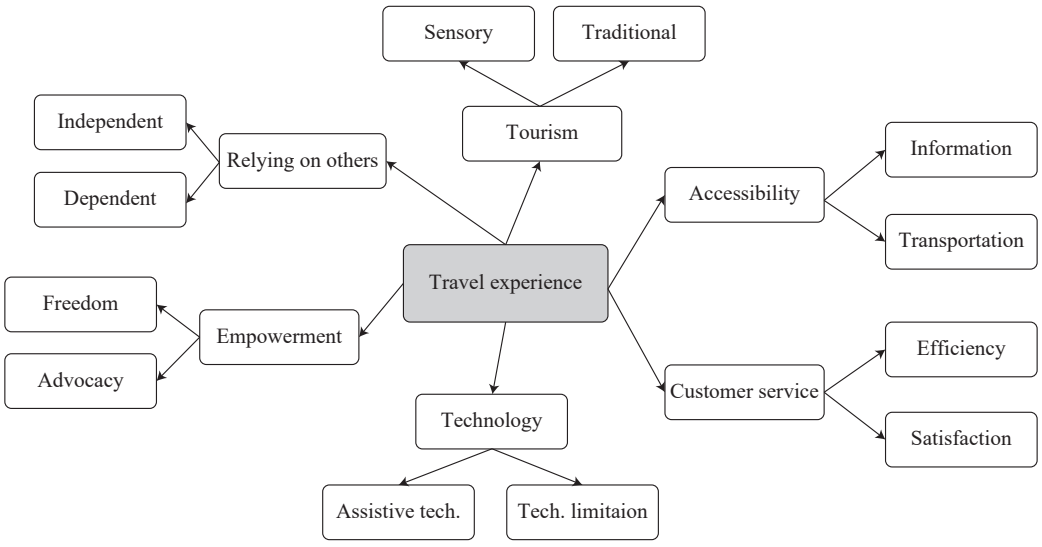

Figure 2: Thematic analysis tree

Note: Thematic map break down shows traveling experience theme includes 6 sub themes which are; (accessibility, technology, customer service, empowerment, relying on others, tourism).

layed snow removal could hinder their usefulness.

Participants also encountered challenges with website accessibility. Some websites were difficult to navigate and not screen-reader friendly, leading visually impaired individuals to seek assistance from sighted individuals to perform tasks like booking airline tickets. Additionally, participants highlighted safety concerns related to the lack of side guidance in some countries, making it challenging for blind individuals to navigate independently.

4.2 Customer service

4.2.1 Customer satisfaction

Issues with customer service emerged as a significant theme in participants' travel experiences. Participants shared instances where interactions with staff or specific situations positively and negatively impacted their travel. Some considered themselves lucky to meet nice staff who took care of them and eased the traveling procedures.

When asked if they felt any kind of discrimination or neglect from staff at airports, some participants showed satisfaction and appreciation for the hard work of the staff. Others noticed the special treatment and did not show complete satisfaction because it emphasized their disability. Automated announcements at subway stations or buses were mentioned as both positive and negative experiences.

4.2.2 Customer efficiency

The lack of standardization and inefficient policies to ensure that travellers have a good experience put some of them in frustrating and sometimes embarrassing situations. Participants expressed frustration with the perception that visually impaired individuals have all the facilities they need, but the quality of customer service is lacking.

4.3 Relying on others

4.3.1 Dependence

There are six married participants whose responses regarding the challenges they encounter while traveling, their trip planning strategies, and their primary concerns when deciding to go on a vacation did not pertain to disability-related issues. The initial response focused on selecting a destination where they can understand the language or considering financial aspects. Depending on their spouses to handle hotel and ticket reservations made them unaware of the specific challenges faced by independent visually impaired travellers.

4.3.2 Independence

Even within the group of blind/visually impaired travellers, there were individuals who relied on airline services or other specialized assistance. One participant emphasized the significance of self-advocacy, highlighting the importance of explaining their needs and raising awareness. Independent passengers who possessed a certain level of technological knowledge used words such as "fantastic," "works all the time," and "I was happy" to describe their experience.

4.4 Accessibility

4.4.1 Information

To understand the accessibility of information in the tourism sector, the researcher investigated the customer journey for visually impaired tourism from the passengers' point of view to understand the obstacles and issues related to accessibility and how the accessibility of information can help this business grow.

4.4.2 Accessible transportation

Transportation differs from one city to another. Independent blind passengers living in developed countries might be used to certain standards that they miss in foreign destinations that do not have those standards. Some participants expressed the trouble they had to go through in countries that did not have any type of guidance.

4.5 Tourism

4.5.1 Traditional

Participants reflected that they do whatever is available for them to enjoy their vacation, whether it is the usual simple thing that any person would do or something extra that accommodates their needs.

4.5.2 Sensory tourism

This sub-theme was generated because participants reflected the need to have sensory tourism. They rely on other senses to enjoy their trip and enjoy nature.

4.6 Empowerment

4.6.1 Freedom

Participants expressed their desire to be trusted that they can manage on their own when they feel they are okay and do not need assistance.

4.6.2 Advocacy

Participants emphasized the importance of advocating for themselves, explaining their situation, and being on the same page with the staff assisting them.

5. Findings and Discussion

Studies have discussed challenges faced by visually impaired tourists, divided into several factors, including:

5.1 Public perception

Public perception is divided into two parts. The first part is the belief that visually impaired people do not need to travel because they cannot see. This perception presents the idea that a person can only enjoy exhibitions or nature by looking at it. As Šintáková and Lasisi [2021] noted, "There is little evidence that the tourism industry really comprehends or appeals to this specific group of tourists. The traditional idea of travel as a visual, sightseeing experience, which seems to support the idea

that traveling is meaningless if one cannot see, might be used to justify this exclusion." This perception ignores the importance of sensory tourism.

The second part of public perception is the belief that there are no problems facing visually impaired people. Many assume that tactile roads are everywhere, braille text is on many signages, and technology is readily available. However, as Květoňová [2008] pointed out, "A person who is blind may not always be able to comprehend their environment or react to stimuli appropriately." For example, Tokyo Metropolitan Welfare Association for Blind People has discussed the issue of tactile blocks often being broken or placed incorrectly, which might cause harm to blind people instead of serving them [Wortley, 2021].

5.2 Technology

Technology plays a significant role in the lives of visually impaired individuals, but its limitations are evident. As Květoňová [2008] noted, "Less than 90 % of visually impaired individuals can only roam freely along routes they have already mastered." This highlights the reliance on compensatory devices such as guide dogs, canes, or assistive technology.

In the study "Smartphone Usage by Blind Experts," it was found that only two users knew that the application had a tutorial. The rest were not aware of it and were self-taught [Jain et al., 2021]. Similarly, Abraham et al. [2021] found that the second-highest percentage of blind people who train to use mobile services are self-taught. This lack of awareness about available resources and tutorials limits the effective use of technology.

5.3 Information

The lack of accessible information poses a significant challenge for individuals with disabilities when making travel decisions. Consequently, they rely on various sources to acquire and verify information. It is important to note that access to information is not only crucial for individuals with disabilities but also for those without disabilities or those who do not identify themselves as having a specific type of disability [Buhalis and O'Connor, 2005].

Participants in this study supported this challenge, with one stating, "But also a lot of places just don't think about the importance of such information. They likely don't realize that if I find that information, I am more likely to go. Also, it will save both of us time because I don't need to call/email to ask, and they don't need to take time to reply." (Participant 5).

The unavailability of pertinent information can cause frustration and disappointment among individuals with disabilities, particularly because traveling takes them outside their comfort zone, and relying on inaccurate information can increase risks [Lee et al., 2011]. This is supported by another participant's response: "They are always a risk. I have heard of people booking and requesting accessible rooms, but not being available when they arrive! But it does have filters, so it can be a good place to start." (Participant 13).

Although the advent of the internet has seemingly made information more accessible, it still falls short in providing comprehensive and relevant information for individuals with disabilities regarding facilities and accessibility [Teixeira and Eusebio, 2022].

5.4 Personal barriers

Consequently, social isolation and limited communication, primarily with close contacts such as family and friends, create personal barriers for individuals who are blind. Blind people often feel sensitive about relying on family members, which can lead to their isolation [Loi and Kong, 2016]. However, this finding contradicts the results of this study. Participants showed that frustration or isolation comes from not wanting to explain their situation to the public, and some participants did not show any sensitivity toward relying on family. In fact, relying on family did not make them aware of the challenges. As Participant 8 stated, "I am more concerned about expenses when I travel rather than accessibility because I travel with my wife; she helps me."

This also contradicts other studies that showed the dependency of smartphone users who are blind on sighted people to explain features to them. As Jain et al. [2021] noted, "In several instances, participants sought sighted assistance when their smartphone accessibility failed. Getting started with TalkBack requires sighted assistance because TalkBack tutorials are limited, and not all participants were aware that there is a tutorial."

Participants' answers reflected that they do not see relying on services, staff, or asking for help while traveling as contradicting the term "independent travelers." They used the term "independent traveler" in the context of arranging the trip by informing staff of their situation. As Participant 5 stated, "When traveling independently by plane, I need to ask for an airport staff to guide me through security and up to the gate."

5.5 Untrained Staff

About untrained staff, participants in this paper were more wary of the extreme politeness of staff and wished that staff treated them like they treated other travelers. As Participant 12 noted, "About discrimination, no, there is no discrimination. They are very nice, and they exaggerate sometimes. I wish if they do not exaggerate and treat us normally like they treat any other person." Similarly, Participant 4 stated, "The staff is overly polite, which makes me feel uneasy."

6. Conclusion of findings

This study aims to address the gap in understanding the personal challenges visually impaired people face in the context of accessible tourism. The findings focus on the importance of blind people's knowledge, awareness of rights, and self-advocacy for improving their traveling experience.

One important finding is that many visually impaired individuals heavily rely on their family members for direction and assistance during travel. This extreme reliance on others not only limits their independence but also leads to a lack of

awareness about the difficulties they face. As a result, they may not actively seek solutions to these problems and may accept the limitations of the industry without considering possible improvements. This sheds light on the importance of empowering visually impaired individuals with knowledge and awareness about accessible tourism options and available technologies.

Moreover, the study revealed that the personal sensitivities of visually impaired individuals, coupled with their unawareness of their rights, contribute to their self-imposed isolation. Due to a lack of understanding and confidence in asserting their rights, they may choose to withdraw and avoid situations where they anticipate challenges. However, participants who possessed solid knowledge and awareness of their rights expressed their experiences in positive terms. They used words such as "advocacy," "fantastic," and "works all the time" to describe their interactions and the effectiveness of asserting their rights. This suggests that empowering visually impaired individuals with knowledge about their rights can positively impact their experiences and encourage self-advocacy.

Accessible travel for people who are blind is not only important for their mental and emotional well-being, as previous studies have emphasized, but also beneficial for various industries, such as companies, museums, and exhibitions. These industries rely on higher ticket prices to compensate for lost revenue. Incorporating multi-sensory experiences, such as providing samples for blind individuals to touch and feel objects, can encourage their participation in exhibitions and enhance their overall experience. By tailoring services to the specific needs of visually impaired travelers, businesses can tap into a previously untapped market and increase customer satisfaction.

Another key finding pertains to the challenges faced by visually impaired individuals in accessing and using digital content. In today's technology-driven society, visually impaired individuals encounter obstacles in navigating websites and applications, accessing digital books and documents, understanding visual content in online videos, and interacting with social media platforms. The researcher tested one tourism website catered to visually impaired people that was hard to navigate. The researcher sent an email to the company, and they replied after 10 days, apologizing for the delay and asking how they could help. These challenges arise due to inaccessible design, lack of alternative text, and compatibility issues with assistive technologies.

To address these issues, it is important for developers, designers, policymakers, and organizations to prioritize the implementation of digital accessibility standards. By ensuring inclusive design practices and exploiting assistive technologies, the online experience for visually impaired individuals can be significantly improved, fostering equality of access to knowledge and opportunities.

In summary, previous studies have primarily focused on the external locus of control, overlooking the internal locus of control in understanding the barriers faced by visually impaired individuals. This study highlights the importance of knowledge, awareness of rights, and self-advocacy for enhancing the experiences of visually impaired travelers. By empowering visually impaired individuals with the necessary knowledge, we can foster their independence and encourage them to actively seek solutions to the challenges they face.

Furthermore, businesses and industries can benefit from accessible tourism for the blind by incorporating multi-sensory experiences and tailoring services to meet their specific needs. Additionally, addressing the challenges of digital accessibility is crucial in ensuring equal access to information and online opportunities for visually impaired individuals.

Moving forward, it is essential for stakeholders, including researchers, policymakers, businesses, and organizations, to collaborate in implementing the findings of this study. By prioritizing awareness campaigns, education, and the development of inclusive practices, we can create a more inclusive environment that supports the needs and rights of visually impaired individuals. This will not only lead to improved experiences for visually impaired travelers but also foster a more inclusive society that values diversity and equal access for all individuals, regardless of their visual abilities.

By acknowledging and addressing the personal challenges faced by visually impaired individuals, we can work towards creating a more inclusive and accessible tourism industry that benefits both travelers and businesses alike.

7. Limitations and recommendations

7.1 Limitations

- Language barrier:
  The researcher was located in Japan, so all interviews were conducted online with English-speaking participants. This limited the ability to conduct face-to-face interviews and engage with non-English-speaking visually impaired individuals.
- Lack of resources:
  There are not many studies discussing visually impaired challenges in the context of traveling, which affected the lack of resources in the literature review.
- Time constraints:
  Accommodating participants across different time zones led to the cancellation of some interviews.

7.2 Recommendations

- Conduct more research:
  More research should be conducted on each type of accessible tourism separately, focusing not only on external factors but also on internal, personal barriers.
- Raise awareness:
  Awareness campaigns should be launched to educate visually impaired individuals about their rights and the available technologies and services that can enhance their travel experiences.
- Improve digital accessibility:
  Developers and designers should prioritize the implementation of digital accessibility standards to ensure that websites and applications are user-friendly for visually impaired individuals.

- Train staff:
  Tourism industry staff should receive training on how to effectively cater to the needs of visually impaired travelers, ensuring a more inclusive and welcoming experience.

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