IBN HALDUN UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF AIR TRANSPORT MANAGEMENT

MASTER THESIS

A COMPARATIVE ANALYSIS OF INCLUSIVE SERVICES FOR PASSENGERS WITH HIDDEN AND VISIBLE DISABILITIES AT ISTANBUL AIRPORT

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THESIS SUPERVISOR
PROF. ALİ OSMAN KUŞAKCI

ISTANBUL, 2024

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by
MOHAMMED SHARIQ IBRAHIMI

A thesis submitted to the School of Graduate Studies in partial fulfillment of the requirements for the degree of Master of Science in Air Transport Management

THESIS SUPERVISOR
PROF. ALİ OSMAN KUŞAKCI

ISTANBUL, 2024

APPROVAL PAGE

This is to certify that we have read this thesis and that, in our opinion, it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Air Transport Management.

Thesis Jury Members

Title - Name Surname	Opinion	Signature
_____	_____	_____
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_____	_____	_____

This is to confirm that this thesis complies with all the standards set by the School of Graduate Studies of Ibn Haldun University.

Date of Submission Seal/Signature

ACADEMIC HONESTY ATTESTATION

I at this moment declare that all information in this document has been obtained and presented by academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name Surname:

Signature:

ÖZ

İSTANBUL HAVALİMANI'NDA GİZLİ VE GÖRÜNEN ENGELLİ YOLCULARA YÖNELİK HİZMETLERİN KARŞILAŞTIRMALI ANALİZİ

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Mayıs 2024, 63 Sayfa

Küresel hava yolculuğunda benzeri görülmemiş bir yükseliş ile karakterize edilen bir çağda, çeşitli yolcu segmentlerine özel hizmetlere olan talep yeni boyutlara ulaştı. Havacılık sektörünün erişilebilirliğe yönelik gelişen taahhüdünü yansıtan, gizli veya görünmez engelli bireylere artan ilgi özellikle önemlidir. Bu çalışma hem gizli hem de görünür engelli yolcuların dünyasını derinlemesine inceliyor ve onlara küresel ölçekte ve çeşitli havalimanlarında sunulan hizmetleri değerlendiriyor. Çalışma, nicel bir araştırma deseni kullanarak havaalanlarında bu yolculara özel yardım sağlanmasını analiz ediyor ve yolcu hizmetlerinin kapsamlı bir karşılaştırmalı değerlendirmesini gerçekleştiriyor. Bu titiz araştırmanın amacı, dünya çapında gizli engelli yolcuların şu anda erişebildiği hizmet yelpazesine ilişkin ayrıntılı bir genel bakış sunmaktır. Ayrıca engelli yolculara hizmet sunma konusunda örnek teşkil eden havalimanlarını tespit ederek hava yolculuğunda erişilebilirliğin geliştirilmesine katkıda bulunmak hedeflenmiştir. Bu amaçla İstanbul IGA, Münih Havalimanı (MUC), Incheon Uluslararası Havalimanı (ICN), Tokyo Haneda Havalimanı (HND) ve Hamad Uluslararası Havalimanı (DOH) gibi önemli havalimanlarında sunulan hizmetleri MAXQDA yazılımıyla İçerik Analizi yöntemiyle incelenmiştir. Bu araştırma, havacılık sektöründe kapsayıcılığı ve hizmetlere eşit erişimi teşvik ederek engelli yolculara hizmet vermedeki zorlukların ve fırsatların daha derinlemesine anlaşılmasına katkıda bulunmaktadır.

Anahtar Kelimeler: Engelli, Gizli Engelli, Görünmez Engelli, İstanbul Havalimanı, Uluslararası Havalimanları.

ABSTRACT

A COMPARATIVE ANALYSIS OF INCLUSIVE SERVICES FOR PASSENGERS WITH HIDDEN AND VISIBLE DISABILITIES AT ISTANBUL AIRPORT

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In an era characterized by an unprecedented surge in global air travel, the demand for services tailored to diverse passenger segments has reached new heights. Of particular significance is the increasing focus on individuals with hidden or invisible disabilities, reflecting the aviation industry's evolving commitment to accessibility. This study delves deeply into the world of passengers with both hidden and visible disabilities, meticulously examining the services available to them on a global scale and across various airports. Employing a qualitative research methodology, we analyze the provision of special assistance at airports, conducting an exhaustive comparative assessment of passenger services. Through this rigorous investigation, our aim is to provide a detailed overview of the range of services currently accessible to passengers with hidden disabilities worldwide. Additionally, we seek to identify airports that serve as exemplars in providing services to passengers with disabilities, thereby contributing to the advancement of accessibility in air travel. To this end, we examined the provided services in major airports, Istanbul Airport (IGA), Munich Airport (MUC), Incheon International Airport (ICN), Tokyo Haneda Airport (HND), and Hamad International Airport (DOH), using MAXQDA software with content analysis method. This research contributes to a deeper understanding of the challenges and opportunities in serving passengers with disabilities, fostering inclusivity and equal access in the aviation sector.

Keywords: Disability, Hidden Disability, International Airports, Invisible Disability, Istanbul Airport.

DEDICATION

I dedicate this thesis to my parents, who have immensely supported me in moving ahead in my life and have always stood by me.

Dedicated to the exceptional team of professors whose unwavering support and guidance have been instrumental in my academic achievement.

And the international airports that have taken initiatives to bring inclusion for passengers with disabilities.

Also, I would like to especially thank the amazing group of friends who were a family away from family, and I cherish every moment with them.

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I want to thank God Almighty for his mercy and blessings upon me for giving me the strength and health to perform this task. I would also like to thank my parents, who have supported me all the way. Also, most importantly, I would like to thank my advisor, Prof. Ali Osman KUŞAKCI, for his continued guidance and for playing a key role in the advisory for this thesis. The institute also gave me a suitable environment for a fine academic upbringing for my subject knowledge. The team from Istanbul Airport, Miss Hilal Kahraman and Sevda Yilmaz also provided key assistance during the research and I thank them for their efforts. I would like to thank my friends who stood by my side while I accomplished this thesis.

Mohammed Shariq Ibrahimi
ISTANBUL, 2024

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LIST OF SYMBOLS AND ABBREVIATIONS

ACI	Airport Council International
ASQ	Airport Service Quality
DOH	Hamad International Airport
DOT	Department of Transportation
HND	Tokyo Haneda Airport
IATA	International Air Transportation Association
ICAO	International Civil Aviation Organization
ICN	Incheon International Airport
IST	Istanbul Airport
LGW	London Gatwick
LHR	London Heathrow
MUC	Munich Airport
PAX	Passengers
PER	Perth Airport
PNR	Passenger Name Record
SIN	Singapore Change Airport
SOP	Standard Operating Procedure
UK	United Kingdom
UNICAP	Uniform Capitalization
USA	United States of America
WHO	World Health Organization
YWG	Winnipeg Richardson International Airport
YYZ	Toronto Pearson Airport
R&D	Research and Development

CHAPTER I

INTRODUCTION

1.1. Unveiling Challenges

Imagine arriving at the airport, excited for your journey, but facing a challenge no one else can see. You look perfectly healthy, but you carry an invisible burden, a hidden disability. As you navigate the bustling terminals, it becomes clear that the airport environment may not be as welcoming or accommodating as it seems. In this thesis, we immerse into the often-overlooked world of hidden disabilities at airports and the services provided for such passenger segments. We further explore the unique struggles faced by individuals who live with conditions that may not be immediately visible to the casual observer. We unveil the complexities of this issue, shedding light on the need for inclusive and empathetic services in a space that should be accessible to all. Also, there has been a limitation in the research on the influence of service quality in the aviation industry (Mainardes et al., 2021).

Lately, the airline industry has been booming, and there have been enormous demands for different kinds of services for different passenger segments around the world. We build this thesis to confront the aviation industry with the whereabouts of the particular services required by the special passenger segment. Further, pursue to explore and view the roles that are vital for serving the specific category of passengers requiring special assistance. In this sense, we also noted (Chang & Chen, 2011) that the growing number of passengers also includes people with a disability.

The passenger services play a crucial role in the overall development of the brand image of the airport (Bezerra and Gomes, 2015; Bezerra and Gomes, 2020; Chang & Yeh, 2002; Eggert & Ulaga, 2002; Fodness & Murray, 2007; Maxham & Netemeyer, 2002; Song, Ruan, & Park, 2019; Sum Chau & Kao, 2009; Verhoef, Franses, & Hoekstra, 2002; Mainardes et al., 2021), and henceforth the airlines which operate

through these airports also play a role in service delivery. Therefore, the quality of the service inversely indulges in this development process and growth.

1.2. International Airports and Disability

Airports are the most commonly used means of transport as they are an accessible way to travel worldwide. In addition, fast-paced development in technology has increased transportation opportunities (Gülhan et al., 2019). Nevertheless, there has been a general growth among travelers with some degree of disability and who are economically capable of traveling (Gröschl, 2004). Every year, we can see positive spikes in the graphs, which represent the number of passengers from different regions worldwide. A clear picture has been shown to us through the various series of graphs, including the downfall of the COVID-19 pandemic, which got the aviation industry to almost a standstill except for a percentage of cargo.

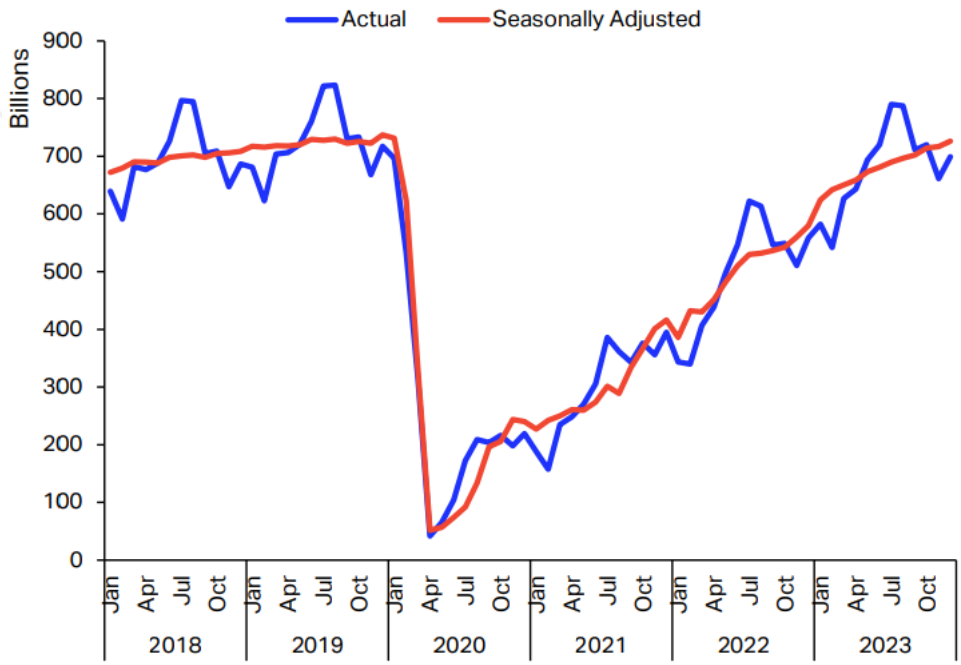

Figure 1.1. Global Air Passengers, RPKs, Billions Per Month

Source(s): IATA Sustainability and Economics, IATA Monthly Statistics

Focusing on the airport services industry, our primary concern lies in improving customer service, particularly for disabled passengers. We explore current practices and recent advancements designed to improve the travel experience for this passenger

segment. Through this thesis, we have tried to understand the current stance of the service provided to this specific passenger segment and also compare it with the other international airports and their institution that have a forte in these services.

There has been a huge influx in the passenger demand to fly, so we may believe that this specific passenger segment will fly frequently. “Importantly, the number of people with disabilities is expected to increase as a result of the increase in lifespan, decrease in communicable diseases, improved medical technology, and improved child mortality (Yau et al., 2004).

To know our passenger segment, we see that among the 8 billion population on earth, around 16% or 1.3 billion people are prone to different forms of disability, according to the World Health Organization (WHO) (Disability, 2020).

According to the DOT (Department of Transportation, USA), in the year 2019, around 27 million people with a disability traveled. This gives an idea that almost 2% of the population; let us remember that this data is only collected from the United States (Krause, 2022). While some developed countries face challenges in accessing and retrieving available data, hindering progress, this limitation is a significant aspect of this thesis.

As this thesis kept focus on the Turkish aviation industry, we see the data that 12.29% of the total population in Turkey is disabled, which is around 8.5 million people of the total population of the country according to a study made by the Prime Ministry Administration for Disabled People in 2002 (Gülgösteren et al., 2018; Abay and Güloğlu, 2015).

The population within the areas of specific airports becomes a key consideration for those airports aiming to serve diverse passenger segments.

Accessible travel can be understood by having a picture of a hustle-free and stress-free travel experience for passengers with any type of disability. The journey by air for any kind of passenger would start at the airport’s terminal side. Figure 1.2 shows some of the most common stress points at the airports that all passengers must pass through

to get to the aircraft. These airport's facilities and services are supposedly present for various security and safety reasons and may vary from other airports. These way paths in Figure 1.2 can be considered as a standard design for the passage of passengers for us to refer to for the study of the stress points and can give us brief information about individual services provided at the airports as we can find a reasonable amount of data in favor of the satisfaction levels from passengers without disabilities in some cases and also data for passenger with disabilities.

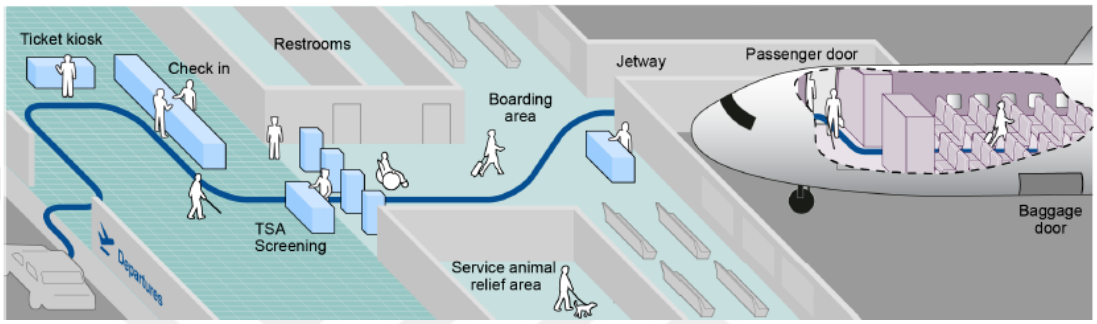

Figure 1.2. Airport Passenger Flow Stress Points

Source: Krause, 2022

We are here to discuss the major fallbacks and the limitations that passengers with hidden disabilities face in the current airport systems designed for the diverse crowds of passengers and later compare the selected airports.

This thesis aims to clarify the services provided for passengers with Hidden disability, evaluate such services by the selected major international airports, and find the drawbacks of the current systems. To this end, it highlights the vital importance of services for hidden disabilities, a very widely relevant but often neglected type of disability. The study employs the Grounded Theory to identify the main practices used by the evaluated airports to generate a comprehensive list of policies and practices to ease the journey of disabled passengers. Furthermore, the thesis compares the provided services in the selected airports to identify the service quality levels of the airports.

The remainder of the thesis is organized as follows: The thesis aims to understand the available services available for passengers with visible and mainly hidden disabilities at selected airports around the world. The literature reviews briefs about the demands and types of services being provided for such passenger segments through

understanding the services provided at various airports and the policies standardized by the governmental and local authorities. As the main focus is discussing hidden disabilities, we further delve into the discussion with education on hidden disabilities and airports. Towards the end, the employment of grounded theory provided us with results that helped us understand the standing of the airports with regard to their services provided and where improvements can be made in the conclusions.

CHAPTER II

LITERATURE REVIEW

2.1. Hidden Disabilities

Hidden disabilities, also known as invisible disabilities, are defined as “a physical, mental or neurological condition that is not visible externally, may also limit or challenge a person’s movements, senses, or activities,” as stated by the Invisible Disability Association (Invisible (Hidden) Disabilities | Disabilities | Accessibility.com, 2023). This definition also has multiple other definitions concerning the context in which they are used (Invisible (Hidden) Disabilities | Disabilities | Accessibility.com, 2023). In general, Hidden disabilities or Invisible disabilities are a tag that entitles someone with any form of challenges in a usual way of life that is not physically shown disability.

Hidden disabilities have recently acquired a base in the field of aviation and other modes of transportation services, as we have discussed in Chapters II and III. Therefore, some key improvements and initiatives have been undertaken by various airport organizations to serve this passenger segment with special services. These services have been specifically designed and curated to fit this specific passenger segment that needs special assistance, specifically those with hidden disabilities (also known as invisible disabilities). These services fall under the umbrella of special passenger services. As we further discuss, we take into consideration that we are mainly scoping the ideas behind these disabilities from the perspective of airports and their services.

2.2. Types of Hidden Disabilities

To take a step further, we have shortlisted the most common types of hidden disabilities, which are listed on the Hidden Disabilities Sunflower website for

reference. In the following table, we get an overview of the major types of hidden disabilities around the world and the effects they have on them, which indirectly make their travel process challenging. These disabilities have been taken under consideration by the hidden disability authorities and other institutions that deal with this specific segment of the special population.

Table 2.1. shows to what extent people with these types of disabilities have to live alone for a certain period of time or survive with them lifelong. Thus, we may understand that this specific population segment may also have the will to fly as a passenger from one place to another as it is their right.

Table 2.1. Types of Hidden Disabilities with Their Effects and Current Population Size

Name of the hidden disability	The effects	Population size
Alzheimer's (Also associated with Dementia)	A neurological condition that affects mental function and memory	1 in 2 of the aged population
Asthma	It affects the airways in the lungs – the tubes that carry air in and out of your lungs.	262 million
Chronic obstructive pulmonary disease (COPD)	Breathing difficulties	215 million globally (2016), 1.2 million (UK)
Diabetes Type 1	Tiredness and fatigue due to variable glucose levels in the body	9 million
Diabetes Type 2	Tiredness and fatigue due to variable glucose levels in the body	462 million individuals
Dyslexia	Learning disorder that affects reading, writing, and information processing	1 in 10 estimated
Endometriosis	Affect women and those assigned female at birth, from puberty to menopause, life-impacting pain and /or infertility	176 million (women and girls)

Table 2.1. (cont.)

Epilepsy	It affects the brain and nervous system and means that someone tends to have seizures.	630,000 - UK
Functional Neurological Disorder (FND)	A specific brain disorder that affects how the brain accesses or controls movement and perception	unknown
Migraine	Painful headaches	1 in 7 people in the world have migraine
Multiple Sclerosis (MS)	Autoimmune and neurodegenerative condition that affects the central nervous system, specifically the brain and spinal cord	2.8 million People are estimated to be between 20 and 40 years of age.
Parkinson's	Characterized by shaking (also known as tremors), slow movements, and stiffness	Around 10 million globally / 23.9% rise yearly
Postural Tachycardia Syndrome (PoTS)	A person's heart rate increases significantly when they stand up.	0.2% of the population
Tourette Syndrome	A neurological condition that causes individuals to make involuntary vocal noises and movements (tics)	1 in 10 school children (UK) / ages 2 and 14 / 1-2% of the population

This has led many air transportation authorities to take into consideration the fact that diverse groups are willing to travel by air. International organizations such as IATA, ACI, ICAO, and other independent authorities have stepped in to support this demand in the industry. Local governments have also stepped in to standardize and make a more inclusive environment for their local population as they know this population is on the rise, and they need services. However, due to multiple reasons, such as financial overwatch and economic difficulties, it has hurt the aviation industry in some specific veins, which is partly affecting the flow of quality service delivery for passengers with hidden disabilities.

But this is not just limited to the aviation industry; it has also rigorously stepped into the other modes of transfer such as taxis, busses, metros, trams, ferries, and cruise liners. The discomfort level of travelers varies from mode to mode, but it exists. Therefore, creating an accessible and inclusive environment for the passengers is much required to bring ease in the process of transportation within the umbrella of inclusivity.

2.3. What are Disabilities?

To further understand what hidden disabilities are, we take a step back in understanding the general realm of disabilities and the need for discussion about them through a focal point of disabilities in flying passengers through various airports. As the focus is mainly on the passengers who are traveling with hidden disabilities, it can be considered logical, and there is an unsaid liability to explain the topic of disability at the airport and their associated definitions, conditions, and difficulties they face.

2.3.1. Definition

As we are iterating more about the hidden disabilities, we find the need to explain and understand what disabilities are. According to the Cambridge Dictionary, disability is defined as "an illness, injury, or condition that makes it difficult for someone to do some things that other people do, and that is usually permanent or lasts for a long time," they further give the following definition in a business English context "an illness, injury, or medical condition that makes it difficult for someone to do the things that other people do" (Disability, 2023).

Subsequently, we come to understand that passengers with a disability might have to go through barriers (Burnett and Baker, 2001) to complete their daily tasks. The barriers can be in multiple forms, for example – motor skills, memory, internal and external health issues, limited sensory issues, and so on.

2.3.2. Hidden Disabilities in Aviation

As the industry struggles with accommodating this growing diversity, the question emerges: Are passengers with hidden disabilities being served in a manner that genuinely serves their unique requirements? While strides have been made in addressing the needs of passengers with physical disabilities, the discourse surrounding hidden disabilities remains relatively uncharted territory. Again, we explore this critical dimension of inclusivity in aviation, specifically for passengers with hidden disabilities, in this thesis.

The term "hidden disabilities" encapsulates conditions that may not be immediately seen yet yield significant influence over an individual's ability to navigate air travel seamlessly. From cognitive challenges to sensory sensitivities, these disabilities underscore the necessity for airports, airlines, and related stakeholders to enhance their understanding and responsiveness. Drawing attention to this fact of aviation inclusivity is not merely an academic exercise; it is a call to action aimed at enhancing the travel experience for a diverse array of passengers.

This thesis infuses itself into the nuanced world of hidden disabilities at airports, understanding the complexities they introduce and illuminating the existing research gaps. By critically examining the available literature and overlooking the voices of those directly affected, this study aims to contribute to a more comprehensive understanding of hidden disabilities' implications for modern air travel.

In the pages that follow, we will explore the current landscape of services provided to passengers with hidden disabilities, analyze the gaps in existing knowledge, and advocate for an inclusive approach that prioritizes the needs of all travelers. By doing so, we try to shed light on the unspoken challenges faced by this demographic and pave the way for a more universally accessible aviation environment.

Hidden disabilities in aviation have recently been recognized and considered equally important in the aviation industry as compared to regular passengers flying from one point to another. This drastic change among passengers has risen due to the increase in the propensity for air travel (Dimitriou et al. 2019; Graham, 2000; Becken &

Carmignani, 2020; Yilmaz et al., 2022) for various reasons such as health, tourism (Becken & Carmignani, 2020) and business (Graham, 2000), belonging to different ages (Clemes et al., 2008; O'Reilly et al., 2017). But this also includes people who have disabilities, hidden or physical (Yau et al., 2004).

According to W.H.O., an estimated 1.3 million people, which is 16% of the world population, have some form of disability (Disability, 2023). Simultaneously, there is a rise in the grey boom market, the aging passenger, and their willingness to fly.

This brings us to the thought of whether passengers with hidden disabilities are being served with their needs in the way they are supposed to be served. We know that there has been a study for the passenger services that have physical disabilities and their dimension based on which the services are being provided at airports and other modes of transportation. However, the academic and research work performed on the topics related to hidden disabilities was limited. Not much was worked on; therefore, there are considerable gaps (Burnett and Bender-Baker 2001; Darcy 1998, 2002; McKercher et al. 2003; Ray and Ryder 2003). This study is scarce when it comes to comparing the services for these passengers because there is limited legislation on the primary scale of airport service directories (such as airport websites or travel agent broachers).

Air travel can be a stressful experience for many individuals, and this can be particularly true for passengers with hidden disabilities. Hidden disabilities, such as autism, hearing loss, or mental health conditions, can create additional challenges in navigating the airport environment and can impact the overall travel experience (Sartzetaki et al., 2019). Hidden disabilities at airports have recently come under consideration for providing better, safer, comfortable, and, more importantly, accessible premises for passengers to pass through the airport. Multiple disciplines, such as airport design and infrastructure, architecture, colors, lighting, common areas, and terminals, have also been designed to facilitate passengers with hidden disabilities. More to which we need to understand why there has been an influence and influx in these types of passengers, as stated before. In addition, aircraft crew members are also trained to deal with these special passengers (Yu-Chun Chang, Ching-Fu Chen, 2012).

2.3.3. Identification

Passenger with hidden disabilities can be identified by a sunflower lanyard or a wristband (see Figures 2.1 and 2.2), which they are supposed to wear or can be worn by someone who is accompanying them through their journey. This passenger may approach the information desks or offices, which have a sticker pasted on the airport passenger service counters for their assistance.

Figure 2.1. Hidden Disabilities Logo

Source: Hidden Disabilities Webpage

Figure 2.2. Hidden Disabilities Lanyard with ID Card

Source: Hidden Disabilities Website

2.3.4. Airports & Sunflower Lanyard Program

Sunflower Lanyard program is one of the easy-to-adopt solutions by airport service providers to serve passengers better. Airports in the UK mainly and the European region, some airports in the United States of America, Latin America, Canada, Türkiye, Limited airports in the Middle East, and Asia Pacific are the ones which serve the passengers with this specific program as their service tools. A list of countries is shown in Table 2.2, including the regions in which they fall.

Table 2.2. Sunflower Lanyard Program: Countries and Regions

REGIONS	COUNTRIES
Asia Pacific	Australia
	India
	Japan
	New Zealand
	Singapore
	Turkey
Caribbean	Bahamas
	Curacao
Europe	Austria
	Belgium
	Crown Dependencies
	Croatia
	Cyprus
	Denmark
	Germany
	Iceland
	Ireland
	Italy
	Poland
	Lithuania
	Sweden
	The Netherlands
	UK
Middle East	Bahrain
	Dubai

Source: Developed by Author

2.3.5. Airlines & Sunflower Lanyard Program

Fifteen airlines have also adopted the program with the Sunflower Lanyard Network to serve the passengers (See Table 2.3). This later comes hand-in-hand with the airports and airlines both having to serve the passengers in the most accessible manner. These airports link over 120 countries and the airports within these countries. Therefore, the flying passenger may require special assistance throughout the flight from the starting destination to the arriving destination. Shaping the demand for specialized services and supporting travelers with hidden disabilities during their airport and airline experiences to ensure a seamless and stress-free journey.

The scale of the connection can be seen through the chart below, which represents the airlines that have adapted to the Sunflower Lanyard Program, which shows the reach of airlines to most parts of the world and the possibility of increasing quality service by the airlines as to serve the specific passenger segment (Meyer, 2017).

Table 2.3. Airlines with Sunflower Lanyard Program

Airline	Country	Number of Destinations
Air France	France	Varies (approximately 195 destinations in 90+ countries)
Air New Zealand	New Zealand	Varies (approximately 51 destinations in 20 countries)
Atlantic Airways	Faroe Islands	Varies (primarily servicing destinations to/from the Faroe Islands)
Austrian Airlines	Austria	Varies (approximately 130 destinations in 55 countries)
British Airways	United Kingdom	Varies (approximately 183 destinations in 75+ countries)
KLM	Netherlands	Varies (around 145 destinations in 70+ countries)
Corendon Airlines	Netherlands	Varies (focused on holiday destinations in Europe and beyond)
Emirates	United Arab Emirates	Varies (over 155 destinations in 80+ countries)
Qantas Airways	Australia	Varies (around 85 destinations in 40+ countries)
Jetstar Airways	Australia	Varies (over 80 destinations across Asia-Pacific)

Table 2.3. (cont.)

LATAM Airlines	Chile	Varies (around 145 destinations in 20+ countries)
Ryanair	Ireland	Varies (over 200 destinations across Europe and North Africa)
TUI fly	Germany	Varies (focused on holiday destinations in Europe and beyond)
Transavia	Netherlands	Varies (primarily serving European destinations)
Turkish Airlines	Turkey	Varies (over 300 destinations in 120+ countries)

Source: Developed by Author

2.4. Initiative for Passengers with Hidden Disabilities

To make this journey an accessible experience, many initiatives have been recently implemented by major international airports. The implementation comes after the hike in passengers who have disabilities (visible and non-visible), customer complaints, accidents and incidents, fatigue, and mental and physical breakdowns. The ease of experience is much needed for this passenger segment.

One element that stands out from the other initiatives to assist passengers with disabilities and hidden disabilities is the involvement of the human-based factor, which has also been discussed in this thesis. The human factor from the side of the staff plays an important role in acknowledging the passengers and providing an accessible environment by knowing the available options to direct this set of passengers. Therefore, there is a huge gap in the information between the airport and the service providers, which was found for tourists traveling with disability (Cavinato and Cuckovich, 1992; Murray and Sproats, 1990; Woodside and Etzel, 1980).

This could be at the airport or in the aircraft. Knowing how to use the equipment and how to support passengers comes in handy in line with the accessibility element. Training the front-line staff stands out as one of the key players for better service provisions in the hospitality industry and would make the guests or passengers travel comparatively better, which was argued by (Grady and Ohlin,2009), as most of the

staff of the airline and airports are not aware of the process of communication and how to deal with the passengers who have a disability (Chang & Chen, 2012).

The environment has been discussed here multiple times. This directs to the airport premises, the aircraft, and the areas that are specifically made for passengers with disabilities, such as the special waiting areas, silent rooms, and handicapped washrooms are some examples. There have been other discussions regarding the directives for the design and development of the services available at the airports since this has been a major challenge for airport designers in the current era (Caves & Pickard, 2001).

2.5. Disability and Travel Limitation

These disabilities reduce their ability to move or process through their daily lives, which in turn makes it a burden at times for them to do the same. Further, when it comes to discussing travel for these passengers, many concerns have been raised by passengers, airline and airport stakeholders, and health and safety organizations. These concerns are mainly focused on the accessibility for these passengers through airports and the services provided by the airlines. These include – improper information, mismanagement of seat booking for passengers with special assistance, mishandling of passenger mobility equipment, and not providing the passenger with basic services, especially when the passenger is aged.

According to the DoT (Department of Transport. US), around 800 to 1000 wheelchairs and scooters were damaged by U.S. airlines each month in the year 2022 (Dangi-Garimella, 2023) alone. Other countries had limited data representation, but we could see that many other airlines in other countries had a significant rise in wheelchair mishandling or loss of mobility aids such as crutches.

2.6. Codes by IATA for Passengers with Special Needs

IATA has a specific code to enlist these passengers into the airline's query or PNR ID systems, as it becomes accessible to know what special category the passenger belongs to.

Table 2.4. List of Passenger Codes for SSR (Special Service Request)

Code	Description
WCHR	Passengers can walk short distances and manage stairs.
WCHS	Passengers can walk short distances but struggle with stairs.
WCHC	Passengers cannot walk independently or manage stairs.
BLND	Passenger is visually impaired.
DEAF	Passenger is hearing impaired.
BLND-DEAF	The passenger has impaired vision and hearing.
DPNA	Disabled passenger with intellectual or developmental disability.

Source: Developed by Author

These codes are to be mentioned or known to the travel agent before the departure, mainly at the time of booking the tickets. Provisionally, it gives a heads-up for the airlines and airports to prepare accordingly to serve these passengers.

Thus, making it a difficult choice for travelers with disabilities to take flights from A to B or sometimes even C. Due to this, IATA and other governing bodies have taken steps to assist passengers to have more accessible travel.

2.7. Disabilities and Air Travel

A journey for an average person (without visible or non-visible disabilities) is comparatively comfortable when he or she wants to travel from one place to another; these passengers can overcome any difficulties that may arise during their journey without much of a commotion. When comparing the travel experiences of passengers with disabilities to those without, there is often uncertainty about whether their journey will be a positive one. Many passengers with disabilities carry a sense of anxiety even before their journey begins. This anxiety often stems from overthinking about potential difficulties, driven by past negative flight experiences. These apprehensions can transform what should be a straightforward journey into a more challenging ordeal (Mackett, 2019; Yau et al., 2004).

In Figure 1.2., we can get a view of the stress points that a traveler goes through to get into the aircraft from scratch, and we can also understand they might have to go through the same in deplaning or exiting the airport. But facing challenges when it's a person with a disability or an invisible disability.

The aviation industry has witnessed a transformative evolution within the past 50 years, propelled by soaring demand for air travel driven by diverse factors such as health, tourism, and business engagements (Graham, 2000; Clemes et al., 2008). This spike in demand has led to a dynamic mix of passengers traversing the skies – individuals belonging to different age groups (O'Reilly et al., 2017), cultures, and backgrounds are among them (Clemes et al., 2008).

Among these diverse travelers lay a significant but often overlooked subset group: individuals with hidden disabilities. These disabilities, often unseen by the casual observer, passersby, and travelers, encompass a range of conditions that impact passenger's experiences, needs, and comfort throughout their journey from origin to the destination. And, to bring about the need for overall study into validation, we can see the rise in the segment of passengers with disabilities (Budd & Ison, 2020; Graham et al., 2019).

These specific sets of people have been in a void of choice and dilemma from multiple points of view. Their difficulties or challenges cause them to rethink if it's possible to travel from point A to B without a mental breakdown or any unimaginable circumstance that may arise during the journey (Peterson et al., 2022). The thought of traveling itself is chaos in the minds of passengers, even those with disabilities, and naturally increases anxiety or other health issues (Peterson et al., 2022). Therefore, we just can imagine what the passengers with hidden disabilities might have to face.

Passengers with disabilities who are aware of the options or choices available in favor of them at the airports find it difficult to avail themselves of them as they are just facilities that are present but are not active. It indirectly creates a form of hesitation for them to travel again and decreases the propensity to fly or use the service again in the vicinity (Peterson et al., 2022). This explains the situation and gives us the current scenarios about the passengers who are trying to avail of these services at the airport.

The so-called younger generations, addressed as Millennials (i.e., Generation Y) and Generation Z, GenZ), and the ones who fall into the category of passengers with a hidden disability, are very sensitive to the idea of traveling, as they wish to travel more (Fry, 2020; Battisti et al., 2022). One such testimony was given by Tolga Gökçe, a father of an autistic child (age around 15), how she fears just passing through the airport entrance automatic gate at Istanbul Airport. He then further shows distress about explaining her daughter's autistic situation to the personnel at every point of contact with the airport. But, with the recent introduction of the sunflower lanyard program, he was much relieved, as the airport personnel could visually see that the girl and her father would need some sort of assistance and attention through her wearing the sunflower lanyard and the very special guest card. Therefore, the airport staff leaps ahead to provide better service and assistance for autistic passengers (*First Time in Turkey: Sunflower Badge | Accessible Airport*, 2021).

There has also been a rise in the number of passengers who need special assistance, (Budd & Ison, 2020, van der Westhuizen et al., 2022). They further were able to find the initiative taken by various countries regarding the legislation for passenger rights who were with reduced mobility. In the table below we could observe the number from various countries and view the initiatives towards the passengers with reduced mobility.

2.7.1. Self-Acceptance

When we discuss passengers with visible and non-visible disabilities who do not know about the available facilities, we see clear signs of discomfort in them when they are traveling. And before the travel happens, it's complete darkness with just the thought of flying, especially if it's a solo flight. Many participants in different studies showed multiple issues of concern while planning and flying. In some cases, the other type of transportation system is also challenging for them to opt for while on their journey. Being able to accept by the passenger their disability is a key to being able to take further steps in travel (Brillhart, 1986).

2.7.2. Tourism and Air Travel through Disability

Most of these studies were creamed through the research from tourism survey feedback, as tourism is something that everyone will experience once in a lifetime or frequently, domestically and internationally. Present data shows that many of the different types of tourism are supported by air travel (Aviation and Tourism Synergies Key Drivers for Global Economic Recovery, 2021) also Isabelle Ducharme stated in her introduction speech at the Canadian Congress on Disability Inclusion 2023, " transportation is the key to tourism and culture" (Canadian Congress on Disability Inclusion, 2023) and air travel means there is a need of having airports and having airports means that the airports has to provide the service to the passengers with the disabilities.

2.7.3. Safety and Accessibility

Aviation is the safest mode of transport for long-distance travel and short-haul flights due to the availability of low-cost flight fares; it has made the process of traveling seamless for many. Airlines take the element of safety as a top priority for themselves and their passengers. Research was conducted by Ringle et al. on customer satisfaction and its relation to the safety element, which stated that "safety was a key driver for customer satisfaction" (Ringle et al., 2011). Negotiation in safety is not an option for airlines as they are responsible for the safety of the passengers (Barnett & Higgins, 1989).

Safety is the number one priority, as affirmed by IATA. The aspect of safety was even more increased and enhanced post the 9/11 attacks, and since then, there has been no compromise on the safety factor for the airport and the airlines. IATA and ICAO have both made strict directives and regulations for the operations of the airports and the airlines over the concerns of safety and security. They have also developed the Air Carriers Access Act, which is to be incorporated by the airlines for the safety of passengers.

Safety involvement has lately been reflected in the operational costs for the airlines and airports (Raghavan and Rhoades 2005). Thus, the realization occurs in the

complete processes and the availability of a secure environment for passengers to travel from A to B. As we are currently dealing with passengers with special needs, the provisions for a safe and secure environment for the passengers have become streamlined. The passengers who have some sort of physical or mental barrier fall into the category that are not able to afford such conditions or airlines who can provide better service to these passengers as there is a high probability that they fly with low-cost airlines.

Thus, low-cost airlines have limited soft product provisions for their customers. Making it a challenge for the passengers to fly with them and accept the compromise in the first place. The aged passengers have to face many barriers while they travel, over which, if they have any kind of hidden disability, they are at a high risk of having to face discomfort on the journey. Azra Girit Özcan, a daughter whose father suffers from dementia, showed her concerns about how big the airports are, how crowded they have become, and how difficult it becomes to travel with all the hustle of the luggage and manage the documents and the probability of her father might disappear suddenly (*First Time in Turkey: Sunflower Badge | Accessible Airport*, 2021).

2.8. Airport Management on Quality Passenger Service

Airports have played a vital role in the overall development of the cities and societies in which they are located in the sense of economy (van den Berg et al., 1996), tourism, and increasing accessibility to the world by flights, cargo, etc. They also represent an access point for domestic and international air traffic (Halpern & Graham, 2018). These spaces require a skilled workforce and a concrete management team to establish a proper construct, as airports are also considered to be a complex international business, as stated by Budd and Ison (Budd & Ison, n.d.), which have to serve all kinds of sophisticated demands (Fernandes & Pacheco, 2006) from the passengers, stakeholders, their clients, and the airline, depending on the variable size of the passengers served.

2.8.1. Practical, Possible, and Providable

To construct a solid infrastructure in both tangible and intangible aspects and services of the airport, in provision towards the people who shall use the vicinity, has to be governed by a set of extremely positive, skilled, knowledgeable, emphatically, and goal-oriented teams of personnel. Overseeing various departments to deliver optimal services to airport stakeholders and users and satisfying the customer needs (in our case, the "Passenger Service"), which are Practical, Possible, and Providable.

Being practical is rigorously important if the service is practicable at the airport premises, for example, by adding an extra tech support device such as a kiosk depending on the number of passengers served or by having an airport buggy for a very small airport. Having a practical approach to providing any kind of service also requires looking over the cost-effectiveness of the change or addition of any kind of service, as this feature has a direct impact on passenger satisfaction.

The possibility of the services can be visualized through the demand from the passengers for such kind of service that they all require access by the different passenger segments.

Keeping in mind the practicality and the possibility of the provision of the service, we can finally scope if the service can be provided at the end of the day to the passengers. If the services can be provided and the standards have been set by the higher authorities with sustainable configuration, the services should be provided as there is a high scope of better-quality performance at the airport for multiple passenger segments.

2.8.2. Standardization

The task of standardization can be justified by foreseeing the immense amount of initiatives, Research and Development (R&D), and steps taken by the airport authorities in terms of service quality, and this can be found through the Airport Service Quality (ASQ) Awards and Certification by Airport Council International (ACI), The SKYTREX Awards by World Airport Awards and other national and international certification agencies. Aviation governing bodies such as the

International Air Transport Association (IATA) and the International Civil Aviation Organization (ICAO) have set strict guidelines for passenger service for all segments of passengers that should be served.

Inclusivity and accessibility have also been encouraged recently with ISO standardization certification (such as ISO21902) (*ISO 21902:2021*, 2022), which is tourism-based and audits.

2.8.3. Role of Airport Management in Standardization

The standardization factor leads us to the thought of having to understand the airport management and their duties towards providing high-quality customer service in line with the international standards put up by the aviation governing bodies such as IATA (*All Passengers This Way*, 2012) and Local and Regional Regulatory authorities, the Airport authorities themselves (Halpern & Graham, 2018) and the international observers for Service Quality Assurance at airports such as the ACI. The organizational structure and service delivery may vary from one airport to another. The airport could be within the same country or city (Bonnefoy et al., 2010) but may also have different sets of Standard Operating Procedures (SOPs) and guidelines to provide better service to their passengers for obvious reasons as they have different requirements and demands.

Airports are now going above and beyond to offer other types of experiences within the airport terminal (Wattanacharoensil et al., 2015). They have inner gardens (Seo, 2021), aquariums (Arai et al., 2020), shopping alleys (Creed et al., 2021), movie theatres, airport hotels, different airline and class lounges (Bardai et al., 2017), and more shall be added soon as there is fierce competition among airports, domestically and internationally.

2.8.4. Standardization through Sunflower Lanyard Program

One such initiative is the sunflower lanyard program to serve passengers with hidden disabilities. The program was launched at the London Gatwick Airport in the year 2016 by the airport passenger advisory group, which was then managed by Ruth Rabet,

with her other three colleagues from – Alzheimer's Society Visualize, National Autistic Society**,** and Maria Cook from Autism Support Crawly. Later, it was adopted by local institutions such as transport, shopping centers, and educational institutions in London and the UK. Soon after the appreciation, multiple countries adopted the program by the year 2019, in order to provide better customer service and evolve the idea for inclusiveness towards the accessibility element (Sunflower, 2023). This later became a standard service for providing an accessible journey through the airports for passengers with hidden disabilities; more will be discussed in a further chapter.

The literature on the amenities at airports has been discussed considerably and has a good amplifiable amount of time and investments involved among the airport service providers. But, is this investment serving all passenger segments? Is the airport management prepared to serve the new types of flyers who are slowly growing and willing to travel more than before? And is the airport fit for use by the specific passenger category? We shall understand these issues in further sections.

2.9. Factors Affecting Passenger Service

There are multiple factors that directly and indirectly affect the yield of quality passenger service at airports. Due to the complexity of the airport operations and the staff, and the intertwined relationship between different departments, at the end of the day must provide a standard quality service to passengers who face multiple challenges daily.

2.9.1. Internal Factors

The internal factors are mainly the staff who operate at the airport and who come directly in contact with the passengers. They are the only ones who physically present themselves representing the airport or the airline working at the airports as airline representatives.

A customer service staff or a representative is foundationally cultured to serve the passengers first-hand on a face-to-face base. These personnel hold the advocacy card of the airport. Their behavioral skill sets such as communication skills, politeness,

positive attitudes, cultural sensitivity, morale, and the way the service quality is delivered, host a positively contagious impression on the passengers flying through that specific airport.

In addition, while airports are incorporating advanced technology into passenger experience systems, it is widely recognized that a human touch adds a level of sophistication and excellence to the overall passenger service experience. This can be justified by the actual physical need for the passenger's service representative. A considerable number of passengers still prefer to fly through the airport classically. More precisely, they get to the airport by car/bus/metro/taxi, walk into the airport, find the check-in counter, go to security, get frisked, shop duty-free, and wait near the gates or in the lounges to enjoy chefs freshly cooked foods before boarding the flight.

Let alone the passengers with hidden disabilities and those with visible disabilities also encounter significant challenges. They face considerable backlash and, despite their hesitations, are compelled to fly, especially for medical treatments. The number of such passengers is substantial, experiencing a surge due to the 'grey boom' trend. Consequently, airport staff must consistently deliver standard services, offering direct assistance to these passengers. This requires thorough preparation, mentally and physically.

2.9.1.1. Influence of Technology

In recent times, there has been an increase in the influence of the usage of technology in our daily lives. This has also given rise to additional directives to use cutting-edge technology simply and economically to benefit airlines, airports, and their stakeholders. And the technology has to be operable by the passengers. This includes passengers with different kinds of disability and hidden disability as well.

In general, airport service providers must be flexible enough to adapt to these changes and act towards a positive output of services to all the passengers traveling through the airports.

The infusion of technology has recently brought assistance for the passengers with special assistance, which goes parallel with the design of the airport's infrastructure and amenities. Many airports are experiencing frequent expansion plans due to the well-known growth in passenger demand. There has been extensive adoption of technology to ease the accessibility of all passengers belonging to all categories. This includes not just new infrastructures belonging to other modes of transport but also new infrastructures (Bennett & Vijaygopal, 2023). Further in this thesis, there have been mentions of such technological methods used by major airports for a smooth passenger experience.

A major drawback drawn with regards to the use of technology is the involvement of technology itself, in a sense that all the passengers passing through the airport might not be confident or able enough to use these services, and they prefer the conventional style of airport services (example, in person check-in with an agent). This is due to their inability to adapt to the technological advancements because of their disability, which shadows the process. Keeping this in mind, they have recently tried their level best to provide an agent for these passengers specifically to serve them and provide them with the available assistance.

Thereby, an affirmation could be made that having a more accessible and barrier-free environment can ease access to travel and tourism. Indirectly involving airports and airlines, therefore enables them to participate in travel activities using a variety of barrier-free travel products, services, and amenities (Darcy et al., 2010, Lyu, 2017). Hence producing an accessible travel port for passengers with disabilities. Thus, bringing ease in the overall experience and could give rise to the reliability factor for this set of passengers.

As we discuss this, we also need to understand how the airport operations staff deals with the passengers and how vital any decision made by the airport operations team is indirectly affecting the passenger's service. For example, the operation team has to change 1 of the three arrival baggage belts completely due to wear and tear, and they suddenly plan to do it during peak operating hours without having a proper backup. This, for obvious reasons, cannot have a satisfactory output of service.

Above being mentioned about the human factor involved in delivering quality service, these attributes are highly vulnerable to differences during the act of providing the service. As the airport management team is purely human, there is a probability of margin of error. It is the most intrinsic form of behavior outcomes, and it affects the service to the passengers at airports.

Given that the majority of the activities at the airport are heavily dependent on technology for information and communication purposes, there is a possibility that the system may cause a delay in the process of providing the service to passengers.

Since queuing is thought to be one of the characteristics that have been directly linked to passenger satisfaction with airport services, self-check-in counters and kiosks, as well as the security screening procedure and baggage handling system, all play a role in mitigating potential delays brought on by system failures (Halpern & Mwesiumo, 2021).

The queuing at security is a high-intensity stress point at the airport, with long queues causing distress among passengers frequently and complaining about this part of the journey. Queuing affects the airport service quality by not having enough screening gates, limited immigration counters, limited check-in counters, not being able to provide ample staff for the passenger, sudden addition of extra flights, or being pushed by a seasonality wave of passengers traveling due to vacations.

Due to their aging and their motor abilities, older passengers take more time than younger flyers. Travelers who were also significantly older and people with obvious and invisible problems revealed that when the airports get congested, they quickly get overwhelmed.

2.9.1.2. Terminal Comfort

The time when most of the passengers seem to speed past the security check would be at the duty-free area and waiting area near the gates. Hence, providing a suitable and comfortable environment in this specific space keeps the person calm, feels comfortable, and prepares for the flight as some passengers might be anxious and need

time to settle their minds. Making this space congested would make the passengers feel stressed, causing a bad impression on the airport as they leave and, in turn, affect the airport's reputation. There have also been many architects who are thoughtful for the passengers and have managed to bring more natural light into the terminal building, making the place livelier while the modification of the airport terminal takes place (Kotopouleas & Nikolopoulou, 2018). This ingenuity also brings about a sense of natural, free space for the passengers, adding this attribute to one of the internal factors affecting the airport passenger service. One of the best examples would be the new LaGuardia Airport (Torres, 2018).

Depending on the airports around the world and the connectivity, airport services may vary. Therefore, we have to understand that there could be a variety of internal factories that directly affect passenger service and satisfaction at the airport through multiple means.

2.9.1.3. Influence of Airport Location

An airport is a place that assists people in flying out from their current location to a place at a considerable distance away by aerial vehicles such as an aircraft or a helicopter. This form of transportation is mainly made to speed up the time to reach that specific location/destination. Thus, the location of the airport matters much more than we anticipated due to multiple factors and reasons, such as weather, whether passengers are willing to travel (demand/ propensity), whether the airport is accessible to the public easily, and whether the geographical location supports such a kind of transportation structure.

The geographical location poses a challenge for airports in ensuring seamless travel for individuals within their vicinity. In some cases, the geographical attribute can be scaled to a bigger picture in such a way that the airports provide hub and spoke modes for airlines to operate from the specific airports.

The location of airports can be as unique as you imagine due to the willingness of the passengers to travel to such destinations, and the only mode to reach such a place is by flight (Oum et al., 2003). One such airport is the St. Helena Airport in the South

Atlantic, 2,000 Km West of Africa. This airport is the only airport on that island and is made for tourism and medical evacuation purposes. Since its construction in 2016, it has served its purpose exceptionally and made it accessible to passengers who wish to travel to this destination.

Landing on short runways, above mountains, between mountains, valleys, dense forests, rainy and gutsy runways, and even the ice in the Arctic are just some of the examples that support the qualification of the places where the aircraft may land for passengers to serve exceptional demands. Seemingly, we know that wherever there are runways, there is a high probability that there will also be an active airport that requires a level of passenger service.

2.10. Role of Airport Management in Passenger Service

As mentioned previously, there is a critical need for a high-quality standard to be set by the top tables for quality assurance for passengers traveling through airports in their respective countries. As these passengers come along with different kinds of requirements while they fly from the airport, the services to serve them have been then standardized through immense R&D, customer surveys and reviews, and understanding of the most common services while also considering the exceptional ones around the world.

These passenger service standards and provisions can only be provided through an acknowledged, understanding, and dedicated team of customer service professionals on all levels, from the floorwalker to the check-in staff, to the security and immigration, and finally, the airline staff at the airport. Overall, these teams are under the umbrella of a decent airport management team who, at the end of the day, want to serve all kinds of passengers positively. Above all, they are providing equal service to them, keeping inclusivity in mind.

The passenger service trend may vary from airport to airport, and external public factors and anomalies, as we have iterated previously. For example, seasonal flights from European countries to the eastern and southeastern countries for the summers for tourism, local holidays, pre-summer traffic, and more. If looked a step closer, we find

that these groups of people traveling with different intentions belong to different ages, backgrounds, and ethnicities. Also, these groups have passengers who are specially-abled to be of multiple ages.

Now that we have briefed on the types of passengers, such as aged and others, we affirm the idea of having multiple types of service, which will, in turn, be required to serve these groups or so-called passenger segments. To provide these services, the management of the airport must be well versed in the 'know-how' to assist and serve the passengers to keep up with the quality of service, as we know the service quality affects the reputation and intangible stakes for the airport at the forefront, as we know from the available literature.

To provide these services to the diverse market segments of passengers, airports have established specialized teams dedicated to identifying the most practical and financially viable solutions to enhance passenger experiences. This push for an inclusive-oriented approach has been notably spurred by the significant increase in grey travelers, also known as aged travelers (aged 65 years and above). Moreover, airports are experiencing a growing number of passengers with both visible and hidden disabilities (Yau et al., 2004), making it imperative to address their unique needs and requirements, a topic we will delve into further. Additionally, maintaining proper managerial conduct at the airport is of principal importance to ensure the smooth flow of passengers and the efficient operation of the facility.

2.11. Service Quality in Aviation

Various factors have been discussed above about the factors which affect the aviation industry. With this regard, it's vital to acknowledge the importance of service quality in aviation. One such major tool used in aviation is SERVQUAL, which is produced for the sole purpose of measuring quality in the service industry (Parasuraman et al., 1993). It consists of five factors (tangibles, reliability, responsiveness, assurance, and empathy) and contains two-part 22 scale items regarding expectations and performance.

SERVQUAL has been widely used lately for the successful evaluation of the services provided at airports and airlines around the world (Fodness & Murray, 2007; Bigné et al., 2003). This further helps them to improve the quality of the services being provided to the passengers. Also helps in understanding the demands of the passengers (Chen & Chang, 2005). Therefore, this is key to improving the overall development of industry services through a multidimensional approach. Intensive literature has been discussed on customer satisfaction, brand image, loyalty, and product satisfaction around the world for airlines and airports.

Lately, service quality has been taken into consideration for the evaluation of services, specifically at airports. The service quality standards are issued by the airport itself or by the operating airlines in terms of quality standards. This helps airports and airlines using SERVQUAL develop service quality for their passengers. Research and development are further made using the data achieved by the frequent surveys and analysis through the passengers for the passengers.

CHAPTER III

METHODOLOGY AND APPLICATION

3.1. Subject and Problem Statement

As there has been a rise in passengers who are traveling with hidden disabilities, we must take considerable measures to find quality solutions to support them to have a comfortable journey.

This thesis is designed to study and understand passenger services for passengers with physical and hidden disabilities at various airports globally. We also compare these airports individually, visualizing the available number of services in the MAXQDA10 data analysis tool. We identify the most commonly available services at the airports that serve passengers with visual and hidden disabilities and rank the major airports around the globe.

3.2. Research Design

Initially, the main aim at the beginning of this thesis is for the authors to research this topic in line with SERVQUAL's five attributes to evaluate the service provided for the passengers who hold the 'Very Special Guest Card' issued by Istanbul Airport. Due to the limited number of respondents who were sent the survey by the Istanbul airport authorities through electronic means, the author could not get the minimum number of responses to proceed with the analysis. One hundred twenty-two registered passengers possessed the Very Special Guest Card and were sent surveys to respond. Out of these, only eight responded to the survey. The number of responses was one of the major limitations of the pre-aimed research. Over time, there were long delays in receiving the responses. These were a few reasons that the research was abandoned.

The research was further designed for a comparative study using content analysis conducted among well-known international airports, such as Istanbul Airport. Istanbul airport has been the one majorly pushing itself to provide products and services to passengers with hidden disabilities specifically.

Nevertheless, the author was able to obtain background information on the services available at the airport. Therefore, it is clear that pivotal improvements have been made to provide quality services in the soft product and the hard product elements of the airport. These products and services were widely available at the Istanbul airport and the other airports worldwide. The most common product was the Sunflower lanyard program for passengers with hidden disabilities, which gave a breakthrough in the research to provide statistics for the number of airports that have adopted the Sunflower lanyard program. Also, the individual airports, when researched, have provided significant data regarding the related services and products for the community with visible and non-visible disabilities.

Primarily, the research was made on a cream level to understand what these hidden disabilities are, and further, to have a wider scope, we took the initiative to understand what disabilities are in general. Secondly, steps were taken deeper with the assistance of the Sunflower lanyard program to understand the diaspora of the hidden disabilities who travel. This had the names of airports that were enlisted as active users of the Sunflower Lanyard program. Later, using the data from the award-winner list of the top airports in the world issued by ACI and Skytrax, we conducted individual research on the top 5 airports, and the rest of the five airports were selected based on significant products and services for passengers with hidden disabilities.

3.2.1. Research Analysis Tool – MAXQDA

Further progress was made with the employment of the MAXQDA tool to analyze and compare the data extracted from these airports' websites individually. The data is coded accordingly as per the airport's categorization. The main work frame of this analysis was adopted from grounded theory, as this concept assists in framing and categorization and further comparing them on multiple bases.

Grounded theory is a qualitative research methodology that was developed by sociologists Glaser and Strauss in the 1960s. It is based more on observations and data. Thus, this opens the opportunities for the authors to conduct a deep analysis of the available observations. Therefore, observations were made at every airport's website, and their services were categorized into various codes.

3.3. Visit to Istanbul Airport

As the research evolved in the city of Istanbul, a visit was made to the Istanbul Grand Airport with the intention of a field study. A firsthand experience provided valuable insights concerning the physical infrastructure, operational procedures, and the on-ground reality of the services being provided at the terminal for passengers with disabilities. Various areas were explored, such as the very special guest rooms, special waiting areas, accessible washrooms, and the terminal itself.

For the ease of passenger movement at the premises, there were tactile floors, airport buggies, and wheelchair assistance available for the passengers. Multiple information points had various support services. There were video call kiosks for both sign language and audio; a trial was done with the assistance of an airport staff guiding the tour.

Moreover, an in-depth conversation took place with the airport experience design and segment management chief, Hilal Kahraman. The discussion gave brief insights into why the airport insists on providing services for passengers with hidden and visible disabilities. Further, it was understood that a tweet was made by a passenger with an invisible disability who was not able to stand for a long while at the border security lane, and he therefore requested the staff to let him bump the lane but was denied, grievingly posted his tweet on tweeter (now known as X). This tweet ignited in-depth research and development of services that are more inclined to such a segment of passengers who have internal health conditions.

The very special card offered by the airport was an exceptional service and special access to various perks at the terminal airport which includes a dedicated space for passengers with invisible disabilities and secluded areas.

The services have been designed in such a fashion so that they are in line with how a normal passenger experiences his travel when he enters the airport, but these services have an essence of special care for the passengers in need. In Figure 3.1a, we see a special passenger service point room. This is the first point of service to which a passenger who has a very special card gets access. This room is located just after the security check after the entrance into the airport. There are instructions on the illustrations at the entrance of the special room that guide the passenger on how to call the staff by telephone, after which the staff shall allocate them a passcode to enter the room.

Once the passenger is inside the room, they may relax in the room lounge area as we see in Figure 3. 1. The lounge area is spacious and quiet to help passengers calm down as they pass through the noisy security check. They further have a quite secluded room for passengers. Passenger with a physical disability may charge their electric wheelchairs if they need to go through the machine that has been shown in Figure 3.2.

Post the check-in and security or immigration it has been made easier for the passenger to navigate through the airports via loud steps and tiled pathways, also there are braille maps for blind passengers. The map is shown in Figure 3.4.

One of the main services available at the airport is the very special guest room, as seen in Figure 3. 5. This room can be accessed based on pre-registration and by requesting at the information desks at the departure hall. There are a total of 4 very special rooms, one on the domestic side of the terminal, and the rest of the three are in the various parts of the international departure hall. And these are all located after security at the airport.

The sensory room, Figure 3. 6, is a separate room inside the very special guest room. This room has a water bubble tube that can change colors for children with autism and anxiety. This room can also be used for elderly people who would like to calm down. With low-intensity light, it gives a soothing environment for passengers with any sort of hidden disabilities.

Figure 3.1. Special Passengers Services Point

Figure 3.2. Special Passengers Services Point (Wheelchair Charging Point)

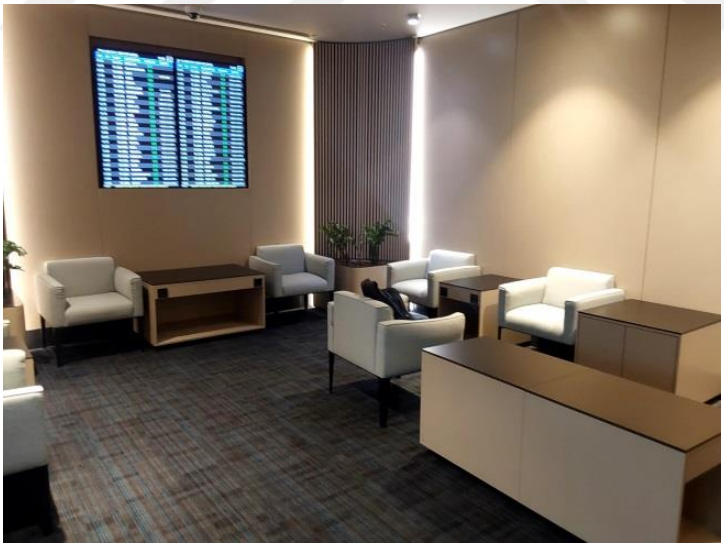

Figure 3.3. Special Passengers Services Point (Lounge Area)

A very special guest room consists of a lounge area, a children's play area, and a special sensory room. The room is designed to have the least amount of external sounds and have controlled lighting so that it does not affect sensitive passengers. The play area

in Figure 3.7 has soft toys and tactile walls and is floored with carpets for extra comfort.

The passenger with special needs may also request any further assistance from any of the many information desks present at various points of the airports. These information desks are orange in color and support and identify passengers with sunflower lanyards to assist them accordingly. The information desks in Figure 3.8 usually have 2 to 3 airport staff present for assistance, and they are also equipped with electronic devices that help passengers in multiple languages.

Technology has helped to ease the process of physically being around the vast size of the airport for assistance. The live information kiosks in Figure 3.9 are located at various parts of the airport at a certain distance that can be accessible for passengers. This kiosk is directly connected to airport staff through a live video call. This helps the passenger to visually communicate with the staff. Passengers who have a hearing disability may use sign language as the staff is well-trained to handle such passengers.

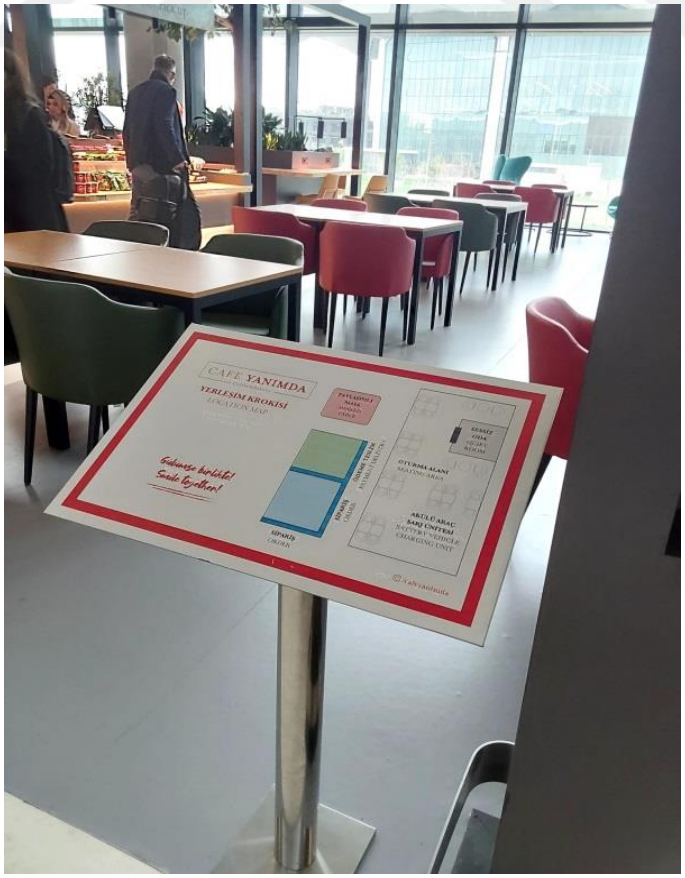

Figure 3.4. Braille Map Layout of Special Restaurant

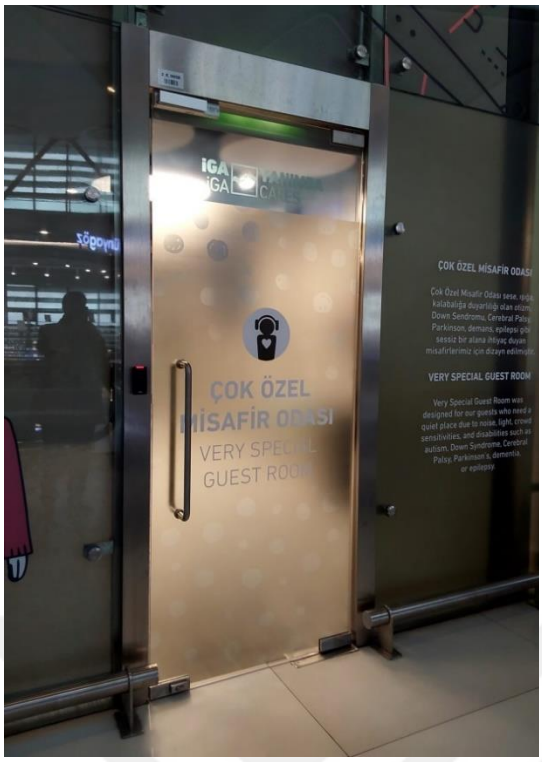

Figure 3.5. Very Special Passengers (Guests Room)

Figure 3.6. Very Special Guest (Sensory Room)

Figure 3.7. Very Special Guest Room (Play Areas)

Figure 3.8. Information Desk with Sunflower Logo & Translation Call Point and Hearing Aids

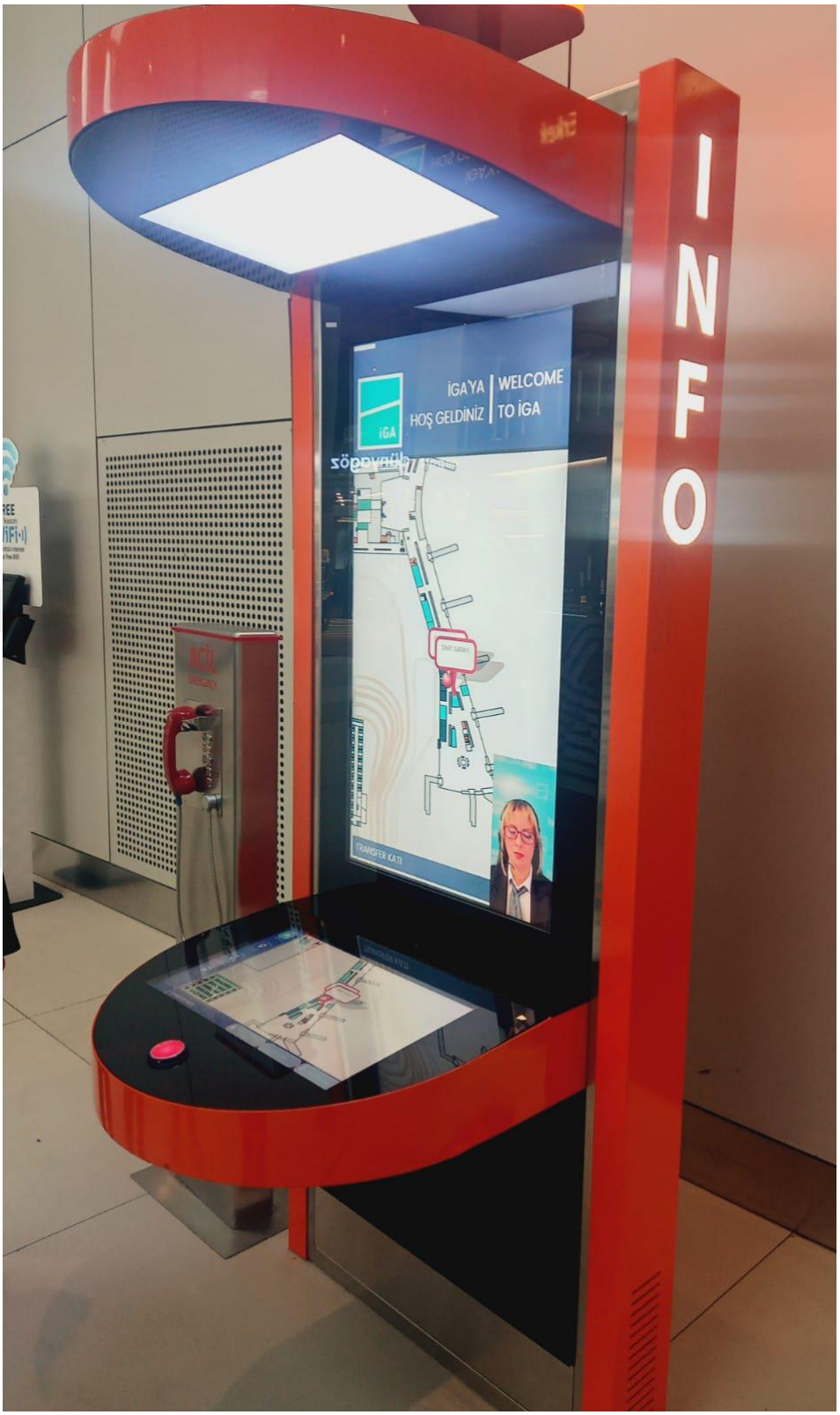

Figure 3.9. Digital Information Kiosks

3.4. Population and Sample of the Research

One of the considerable limitations can be observed when finding the population. We have overall close to 122 travelers who have currently registered for the very special guest card at Istanbul Airport. Thus, the population size would widely depend on the selected airports individually. Also, the population may vary from products subscribed by the traveler for special services. Therefore, the population was considered by the number given by local governments, a few researchers, and airports' statistical indexes. The major number of statistics that were found fruitful was the data from the Sunflower Lanyard Program.

Given the constraints in population size and accessibility, the sample selection process became a pivotal aspect. Initially, a survey was distributed to a limited group of 'Very Special Guest Card' holders only, resulting in only eight responses, which was a major limitation. Consequently, the research shifted towards a comparative study across international airports known for their dedication to providing services to passengers with hidden disabilities.

Selection criteria for airports involved a tiered approach, beginning with top-ranking airports from ACI and Skytrax awards and supplementing with a random selection of other airports exhibiting significant advancements in supporting passengers with hidden disabilities.

Therefore, a total of 10 airports were selected to compare and analyze with specific tools. 5 airports were selected based on their top rankings in the year 2023, and the remaining five airports were selected based on significant products and services for passengers with hidden disabilities.

3.5. Data Collection Method

The Sunflower Lanyard Program gave quality data about the program's users. Further, other major insights were taken firsthand through valid airport sources such as the staff and the airport websites. ACI and Skytrax gave another set of data about the number of airport users and the international standings regarding best airport awards. IATA

also provided information concerning the growth in the aviation industry and the implementation of international policymaking and standardization for passengers with hidden disabilities.

The main sources of the data were extrapolated from the ten selected airports' websites. Further, they were reviewed specifically in the accessibility section of the website to drop down the available services for passengers with physical disability. To keep in line with our main objective of understanding hidden disabilities, progress was made to find sections in the airport websites that indicated services for invisibly disabled passengers, and the information was documented.

3.6. Data Analysis Method

We used the MAXQDA quantitative and qualitative analysis tools for the evaluation of the number of services available for passengers with visible and non-visible disabilities. Considering only the services of hidden disabilities might give very little outcome to the research. Hence, we also consider visible disabilities, which would give us a broad spectrum to evaluate. We gave each service a score of 1 and totaled them towards the end. The total with the highest scores was deemed to have the best services and practices in the industry, and the ones with the lowest would give an idea of the areas where airports could improve their performance. The data will be extracted from various sources, such as the airport websites and special assistance programs available at those airports.

Once we enlisted the special services provided by the airports and scored them, we further discussed the outcomes and evaluated these airports based on their products and services and ranked them accordingly.

CHAPTER IV

RESULTS AND FINDINGS

4.1. Research Discussion

Selecting the airports for the service comparison was a task that involved various factors such as airport size (comparatively higher number of annual passenger traffic), special services for the disabled, population, geographical location, and importance. After a rigorous search and enlisting different types of services provided at 5 top airports, 5 Airports were selected that showcase substantial services for passengers with visible and hidden disabilities.

A few airports showed positive commitment to the initiatives to support inclusiveness. However, a few airports significantly exceeded the others by offering a remarkable volume of services.

Table 4.1 is used as the observation key to furnish the data into the MAXQDA application to further understand the backgrounds of the airports and comprehensive comparison amongst them concerning their services for the passengers with visible and hidden disabilities. Figure A.1 in the Appendix provides us with the evaluation process of services at the airports using the MAXQDA tool. A visual representation of the services associated with their respective airports can be seen in Figure A.2.

Table 4.1. Evaluation of Airport Service for Visible and Hidden Disabilities

Name of Airport & Types of Service	Score	Total Score
Singapore Changi Airport (SIN)		
Requesting special assistance	1	14
Accessible local transport to and from the airport	1	
Ramp-accessible drop-off and pick-up points	1	
Special and priority security and immigration lanes	1	
Wheelchair assistance	1	
Special assistance for passengers with service animals	1	
Porter service	1	
Shopping concierge	1	
Accessible-route navigation guide	1	
Navigation guide available on the Changi app.	1	
Accessible changing room	1	
Hearing enhancement systems	1	
Traveling with lanyard identifiers* (sunflower lanyard)	1	
Staff Assistance For passengers with Invisible Disabilities	1	
Hamad International Airport (DOH)		
Reserved car parking	1	7
Barrier-free access through entry and exit points	1	
Adapted check-in counters	1	
Lounge for special assistance travelers	1	
Complimentary wheelchairs and adaptive washrooms	1	
Special assistance attendee	1	
Service dogs only	1	

Table 4.1. (cont.)

Tokyo Haneda Airport (HND)		
Wheelchair assistance (rental)	1	17
Special drop-off zones	1	
Staff Assistance For Passengers with Special Needs	1	
Calm Down, Cool Down" Spaces At Airport Security Points For passengers with Dementia Or Developmental, Intellectual, Or Mental Disabilities.	1	
Telecommunications relay service - sign language service via mobile devices (only Japanese)	1	
Passenger carts	1	
Mobility services (autonomous wheelchair)	1	
Writing communication boards & communication support boards	1	
Hearing loop	1	
Tactile map/braille pamphlet	1	
Toilets / multipurpose toilets	1	
Assistance dog toilets	1	
The elevator features voice guidance to provide information about the floor, door opening, and emergency control panel, and braille is written on the side.	1	
Braille blocks - tactile routes on the floor	1	
The flight information board for hearing-impaired, screen-based visual guidance is below these boards to explain emergency information, railway suspensions/delays, calls, etc.	1	
Parking discounts for passengers with disabilities	1	
Hidden disabilities sunflower	1	
Incheon International Airport (ICN)		
Shuttle cart services	1	14
Wheelchair/stroller rentals	1	
Waiting lounge	1	
Disability parking space	1	
Disability standby area	1	
Help-phone service	1	
Wheelchair lift service	1	
Valet parking service	1	
Metro train pickup service	1	
Priority lane	1	
Easy pickup (baggage-free service, free home delivery of bags for persons with disability)	1	
Disabled-accessible bathrooms	1	
Braille brochure	1	
Service dogs and pets are allowed with the range of 50cm of leash	1	

Table 4.1. (cont.)

Munich Airport (MUC)		
Accessible short-term parking	1	8
Long-term parking near the terminal	1	
Discounted & accessible parking	1	
Accessible arriving & departing by public transport (bus & train)	1	
Fast lane access at security	1	
Staff Assistance For Passengers with Special Needs	1	
Information In Braille At the Information Desk About Airport Layout	1	
Tactile guidance system limited	1	
Istanbul Airport (IST)		
IGA cares mobile-based application - follow the flight	1	29
Digital information desk (audio-visual)	1	
Charging points for power wheelchairs	1	
No smoking fresh air zones	1	
Pet rooms	1	
Special passenger service points & rooms	1	
Very special guest rooms	1	
Adult changing room	1	
Assistant calls the phone at various points	1	
Fast lane access at security	1	
Airport buggy service	1	
Discounted iga lounge	1	
Tactile paving	1	
Single-lane accessible routes	1	
Loud steps voice-over feature	1	
Sign language through the application	1	
Sunflower lanyard	1	
Age-friendly personal assistants	1	
Accessible toilets	1	
Special havist shuttle service	1	
Accessible taxi	1	
Accessible parking	1	
Disabled passenger drop-off and pick-up points	1	
Dedicated baggage waiting area	1	
Special dining rooms	1	
Premium greeting	1	
Sensory rooms	1	
Café yanımda - café by the disabled	1	
Induction loop (hearing t-loop)	1	

Table 4.1. (cont.)

London Gatwick (LGW)		
Free of cost drop-off point (blue badge holders)	1	18
Service assistants are available at train, bus, and coach station points	1	
Special assistance personnel for passenger	1	
Dedicated family and assistance lanes	1	
Special security search with ease	1	
Assistance lounge	1	
Sunflower lanyard	1	
Sensory rooms	1	
Chill out zones	1	
Interactive zones	1	
Accessible changing facilities	1	
Hearing t-loop systems	1	
Support for visually impaired	1	
Assistance dogs	1	
Mobility aids and wheelchairs	1	
Dementia friends	1	
Airport buggy service	1	
Dedicated help points	1	
London Heathrow (LHR)		
Special assistance personnel for passenger	1	14
Dedicated help points for request calls for assistance personal	1	
Free of cost drop-off point (blue badge holders)	1	
Long-term parking near the terminal for free (2hrs)	1	
Dedicated assistance areas	1	
Heathrow helpers (in purple)	1	
Sunflower lanyard	1	
Boarding card presentation gates	1	
Departure lounge	1	
Accessible toilets	1	
Hanging places	1	
Plus quiet areas	1	
Airport buggy	1	
Sensory objects pack	1	

Table 4.1. (cont.)

Toronto Pearson Airport (YYZ)		
Accessible check-in kiosks with navigational keypad featuring braille labeling and tactilely discernible keys, a headphone jack with volume control anti-glare coating on the touch monitors to ease reading in bright light conditions and wheelchair-accessible height,	1	14
Assisted change rooms – changing places	1	
Accessible toilets	1	
Wheelchair and mobility assistance	1	
Self-service wheelchairs	1	
Designated accessible drop-off locations	1	
Charging stations for electric wheelchairs and mobility devices	1	
In-terminal shuttle service	1	
Magnus Cards (Mobile App for Autistic Travelers)	1	
Service dog and pet relief areas	1	
Accessible parking	1	
Wheel-trans (pick up and drop off within the curb area to and from the terminal)	1	
Curbside assistance	1	
Bell payphone teletypewriter	1	
Perth Airport (PER)		
Airline Assistance	1	10
Changing places	1	
Designated drop-off and pick-up zones	1	
Designated accessible parking bays for Australian disability parking permit (accord) holders	1	
Buses with wheelchair assistance	1	
Service animal relief areas	1	
Sunflower lanyard	1	
Hearing loops	1	
Tactile paving	1	
Perth airport volunteers (gold coats)	1	

Source: MAXQDA research evaluation

These results from Table 4.1. are further compressed into the totaled value in Table 4.2. to easily understand the number of services.

Table 4.2. List of Airports and Their Scores

Name of the Airport	Total
Singapore Change Airport (SIN)	14
Hamad International Airport (DOH)	7
Tokyo Haneda Airport (HND)	17
Incheon International Airport (ICN)	14
Munich Airport (MUC)	8
Istanbul Airport (IST)	29
London Gatwick (LGW)	18
London Heathrow (LHR)	13
Toronto Pearson Airport (YYZ)	14
Perth Airport (PER)	10

Source: Developed by Author

Hamad International Airport and Munich Airport scored the lowest, with Perth just shying around with ten products and services for the special passenger segments. There is a high scope for improvements for PER, but DOH and MUC need to scale up the provision of more provable services for passengers with special needs. As these airports serve many connecting passengers, there would be increased convenience for passengers with disabilities.

Singapore Change Airport, Incheon International Airport, and Toronto Pearson Airport were leveled at 14, and London Heathrow, just a point low with 13, has a high scope of further expanding its services and product line for passengers with special

needs. Most of these airports mentioned have high levels of air traffic passing through their airports, and SIN and ICN have some of the world's highest passenger traffic, which has become a must-have to keep an agenda to serve passengers with special needs.

Tokyo Haneda Airport and London Gatwick had a difference of 1 score that is HND - 17 and LHW-18 presented a basic number of services for passengers with special needs. Istanbul Airport with a score of a remarkable 29 products and services available for both Visible and Hidden disabilities.

Critically comparing it the London Gatwick who were the main founders of the special Sunflower Lanyard program have been outperformed by the quantity of service for passengers with Hidden disabilities provisioned by IST. Thus, we could assume the benchmark for the most accessible airport is true and has also received an award for the same in the year 2021 presented by ACI (Daily Sabah, 2021).

4.2. Limitations

As the data was extracted from the websites of the airports, there is the probability that the website would have potentially not been up to date, which could be a major drawback in enlisting the products and services. Some products and services that are being provided may not be posted on the websites as they may be outdated, and this could cause some missed information on products and services. The research was also done through videos provided by the airports posted in their gallery for extra information, if any.

Moreover, a few services provided may be presented in a packet (as a package) or as a separate service altogether. This may have given an extra score or may have decreased a score point.

One major service point was observed but was not mentioned in the types of service section of the evaluation column, which was the airline's services. A considerable number of airports possess airline service or airline assistance requisition, which means that airlines would provide special assistance staff, at times sourced from the

airport's special assistance staff itself, to provide services to passengers with disabilities. The airline assistance can be availed upon request in the form of SSR (Special Service Request) by the passengers at the time of booking the flight through the travel agent or at the check-in desk. These staff assist the passengers in receiving the guests from the drop-off area until they get on board the aircraft.

A few airports had advanced technology, such as self-check-in kiosks, but with limited specifications inclining to serve passengers with visible and hidden disabilities. Nevertheless, the enlisted airports that had the kiosks were also designed keeping in mind the passengers with reduced mobility and invisible disability. Therefore, the scores were different in this regard.

A few services equipment inside the terminal and on the ramp were not mentioned as these are some basics to be present at all airports for passengers. The regulatory authorities for civil aviation and the international airports associated with airports and passenger service issue directives for these kinds of equipment at the airport for all passengers and, in our case, for passengers with disabilities. These equipment are, for example, ambulifts (trucks used to lift physically disabled with ease), terminal travellators, and wide lifts specifically designed for easy accessibility for passenger movement.

Therefore, these limitations have been undermined at the time of evaluation. The scores might have a few differences in the quantity of the services available due to the limitations. Henceforth, we have tried our best to find the right sources to extract a correct and precise level of information and search deeply in this regard.

4.3. Special Mentions

At Rajiv Gandhi International Airport in Hyderabad (HYD), India, smart trollies have been recently initiated to guide passengers via a tablet placed over a trolley, which guides passengers to their dedicated gates free of charge. This step would help the aged to travel through airports barrier-free. Other airports, such as Istanbul Airport and Incheon Airport, have multiple features in the mobile application, such as the one at HYD, but these new features have more physical touch for the process.

Canadian airports such as Winnipeg, Toronto Pearson, and Montreal Airport have adopted the AIRA Mobile application as a system specifically designed for passengers with disabilities. This application helps in the passenger's reservation process and planning for their journey from these airports. They must place the request 24-48 hours before departure. These requests can be anything, such as requesting an assistant, a service dog, or a wheelchair.

YWG, HND, and NRT have successfully implemented autonomous wheelchair services named WHILL, as this reduces the need for someone from the airline or the airport staff to always assist the passenger.

CHAPTER V

CONCLUSIONS

Technological advancements, human touch, and staff training are key points in providing quality service to passengers with visible and hidden disabilities. As the frequency of statements about the increase in the number of flying passengers worldwide increases, it becomes vital that airports and airlines are well-equipped and prepared to welcome passengers with special needs and requests. The airports may go the extra mile to provide services on their behalf. The growth factor has played an important role in understanding the potential need for such services and products curated for passengers with special needs and handling them accordingly. This influx is also due to the increase in the accessibility factor of tourism as well. The passenger growth has led to various new demands for special requirements at the time of travel.

This study aims to analyze and quantify the range of services for disabilities offered to customers at various airports worldwide. Multiple selected airports were examined and subsequently compared.

In line with the research, the literature was studied. Most of the available literature was under the umbrella of tourism accessibility. The accessibility of aviation had minimal literature for this research. Furthermore, understanding the scope in which passengers with hidden disabilities or non-visible disabilities travel was very limited. Therefore, the study was conducted by extrapolating the available data.

We can see that many international airports have taken positive initiatives for ease of accessibility. The local governments, legislators, IATA, and ACI also played a key role in developing better services and standardization so that the inclusion attribute never fails for these passengers and their needs. We also saw how these initiatives have come about to make air travel more accessible for passengers with disabilities.

The standardization enforcements have led to further modifying and considering these factors for the airport infrastructure and their development. As airports become more commercial, finding spaces for such barrier-free accessible routes and special routes for passengers with visible and hidden disabilities has posed a challenge to the airports.

The quantitative evaluation of the airports' services through the MAXQDA application revealed valuable insights. Services such as the Sunflower Lanyard Program for passengers with hidden disabilities showed the scope and the ease of implementation of this program at airports around the world. Also, special identification cards such as the Magnus Card in Canadian Airports, Blue Badge Parking, and Very Special Guest Card at Istanbul Airport provide more accessible perks for passengers with visible and nonvisible disabilities. More airports are on the verge of adopting these initiatives and programs to have a more inclusive environment. The study also confirmed the positive role of both airlines and airports in providing a smooth journey for passengers with Sunflower Lanyard.

One of the arguments found in this thesis was that the facilities and services provided to passengers with visible and hidden disabilities were in the developing stages, and there is scope for more improvements. We could observe that some major airports were still lagging far behind in availing quality service for passengers with disabilities, slowing down the accessibility wave. Critically evaluating the score, some airports have outperformed in providing exceptionally good services to specific passenger segments. The rest of them have limited themselves to very few services and products. This reflects the management style and internal factors of the airport's accessibility strategy and agenda.

Istanbul Airport outgrows other airports, such as Singapore Changi, Tokyo Haneda, London Gatwick, and Toronto Pearson Airport, in their services and facilities for both passengers with visible and hidden disabilities. The use of technology to provide ease of access for passengers is incomparable to other airports, although they have a handful of unique services. Istanbul Airport's allegiance towards passengers with special needs can also be justified by the number of awards and certifications they possess, and they are soon becoming a benchmark in passenger service for this segment specifically. Istanbul airport had the highest weights when evaluated.

We hereby presume that other airports are taking time to adopt these features, or they do not find much need to adopt them sooner.

Airlines and travel agents are external players who indirectly are related to providing proper information and consultation for these passengers. They provide services that can be beneficial to passengers with special needs and strictly follow the decorum set by the regulatory bodies. As airline staff, the first point of contact for the passengers who are traveling, they are key players in having the knowledge and suggesting services for passengers with special needs.

During the study, we also found out that a significant number of people who could travel were not aware of these kinds of services at the airports. Personally, while discussing this thesis with friends and family, it showed a clear sign that a vast majority of them were not aware of these services at the airports. This presents how limited this information exists in the world of air travel. These people were so willing to pay for such services if they knew that they existed. Unfortunately, with the limited time and data to prove the need for these services, this study has been limited to the critical understanding of the availability of services for the disabled.

Finally, we observe that airports provide basic services for travelers with disabilities. Airport technology improvements have contributed to a more accessible environment for passengers with hidden disabilities, resulting in a barrier-free travel experience. In addition, the human touch has played an important part in fine-tuning the service provided to these passengers with transparency. Airports are expanding to provide additional products and services tailored to meet the current and future demands of these travelers.

There have been multiple limitations in this thesis as there was a limited number of authentic sources for the study and the time constraint played a drastic role in information gathering which also included the literature findings.

This work is expected to help future researchers identify additional features and evaluation methods. It also establishes a good paradigm for all-inclusive air travel via

airports and other modalities. Innovators could offer new services and products to ease access for passengers with visible and non-visible disabilities.

A prospective investigation could be conducted to explore strategies aimed at enhancing the identification process of passengers with hidden disabilities, particularly addressing instances where individuals may exhibit reluctance to self-identify within this demographic. This study would seek to identify alternative methodologies beyond conventional approaches such as the sunflower lanyards or bracelets, to devise more efficient and culturally sensitive methods for identification purposes.

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APPENDIXES

APPENDIX A

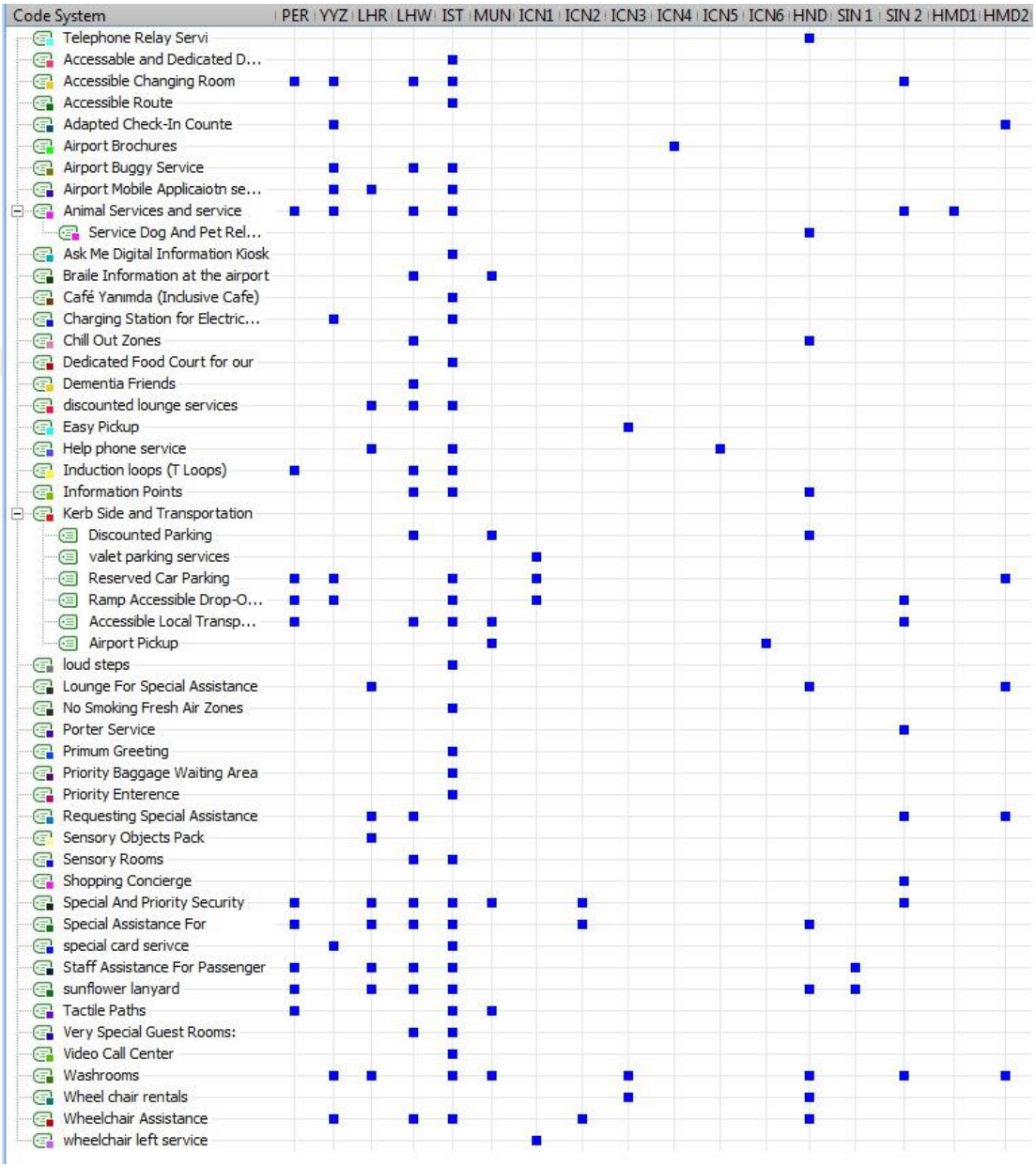

Figure A.1. Airports and Their Linked Codes

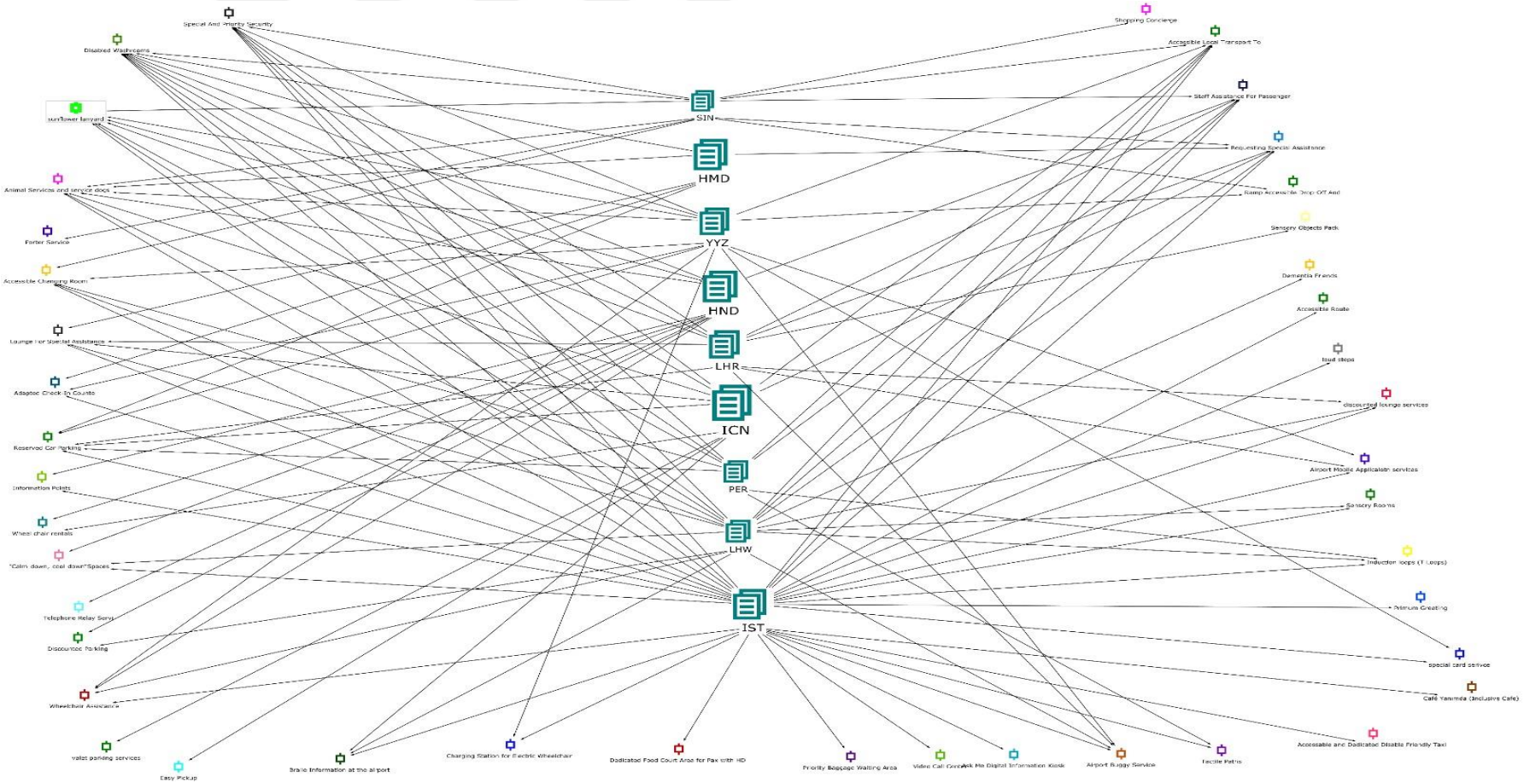

Figure A.2. MAXMap Representation of Airports and Services

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