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Accessibility of the Public Transport in Helsinki Metropolitan Area

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Accessibility of the Public Transport in Helsinki Metropolitan Area

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The aim of this Bachelor's thesis was to find out, test and analyze the level of accessibility in the public transport in metropolitan Helsinki. The accessibility and signalization of the transport platforms and stations were also taken in consideration and tested.

The public transport routes used for this study were chosen to go to or from some of the most popular tourist attractions in metropolitan Helsinki. The airport train and the train station at the airport were also tested since they are important to travelers and tourists alike, and also very recently built. The testing routes in general were chosen to suit the tourism perspective of the author's studies and the city of Helsinki in particular was chosen because it is one of most popular cities for domestic and international tourists to visit in Finland. Marketing organizations Visit Finland and Visit Helsinki can benefit from the results. This Bachelor thesis offers the new point of view of user testing to the subject.

The primary sources for this study were Invalidiliitto (The Finnish Association of People with Physical Disabilities), association that functions within the community in such a way as to enable everyday life to be independent and fulfilling for people with physical disabilities (Invalidiliitto 2016) and the European Network for Accessible Tourism (ENAT), a non-profit information bank on the matters of accessible tourism in Europe (ENAT 2016)

According to the results low-floored public transport vehicles are accessible also for customer travelling alone. Vehicles with stairs are accessible when travelling with a helper. Accessibility of public transport stops and stations varies. Biggest challenge is the level difference and large gap between the vehicle and the station. However, Helsinki can be called reasonably accessible travel destination.

Other recent studies made on the subject of accessibility are Bachelor's theses such as: Accessible Tourism : A Study of accessibility in Hotel Chains, Public Transport and Ferry Companies in Helsinki (Khatri, Kumar; Shrestha, Rajkumar; Mahat, Ujjwal, 2012), Istanbul Inspirations - Case: A Study on the Accessibility of Historical Attractions (Heiskanen, 2014) and The Accessibility of Cultural Attractions for All Senses in Kerava (Toivanen, Laine, 2015)

The research was conducted by qualitative approach means and the main research methods were semi-structured interviews, observation and documentation by camera and the use of test persons. Live testing with test people, Maliha Raqip and her one-year-old daughter Rozelyn, were conducted on two separate days. Qualitative research was chosen because of the humane nature of this subject. It was also decided that qualitative method would be more fitting to find possible improvement points. Photography was used to document the testing and all photographs in this Bachelor's thesis have been taken by the author. The study was mainly conducted between March and May 2016 even though the preparations were begun earlier.

Keywords: Accessibility, Helsinki, Urban tourism, Public transport, Test user

Asp, Elisa

Helsingin julkisten kulkuneuvojen esteettömyys

Vuosi	2016	Sivumäärä	35
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Tämän opinnäytetyön tavoite oli arvioida ja analysoida julkisten liikennevälineiden, pysäkkien ja asemien esteettömyyttä testikäyttäjän avulla Helsingin keskustassa. Testikäyttäjällä oli lapsenvaunut, ja hän edustaa perhematkailua.

Julkisen liikenteen linjat valittiin tätä opinnäytetyötä varten siten, että niillä pääsee suosi-
tuille nähtävyyksille Helsingissä. Lentokenttäjuna ja lentokentän juna-asema testattiin myös,
sillä ne ovat matkailun ja matkailijoiden kannalta merkittäviä sekä hiljattain rakennettu-
ja. Kohteeksi valittiin Helsinki, koska se on maan suosituin matkakohde niin ulkomaisten kuin
kotimaan matkailijoiden keskuudessa. Yleishyödyllinen opinnäytetyö tuloksineen voi hyödyt-
tää matkailun markkinointiorganisaatioita Visit Finlandia ja Visit Helsinkiä vahvistamalla mie-
likuvaa käyttäjäystävällisestä ja esteettömästä kohteesta.

Tärkeimmät lähteet olivat Invalidiliitto, joka vaikuttaa Suomessa vammaisten ihmisten ihmis-
oikeuksien, yhdenvertaisten mahdollisuuksien ja hyvän arjen puolesta (Invalidiliitto 2016) se-
kä European Network for Accessible Tourism (Euroopan esteettömän matkailun järjestö,
ENAT), voittoon tavoittelematon infopankki esteettömään matkailuun liittyvistä asioista
(ENAT 2016).

Tämä tutkimus toteutettiin laadullisilla tutkimusmenetelmillä. Päättökäytännöt olivat
teemahaastattelut, strukturoitu havainnointi, valokuvaaminen ja testikäyttäjän arvioinnit lii-
kennevälineiden esteettömyydestä. Kaikki tämän opinnäytetyön valokuvat on ottanut kirjoit-
taja itse. Tutkimus suoritettiin pääasiassa maaliskuun ja toukokuun alun välissä 2016.

Tulosten mukaan Helsingin julkiset matalalattiaiset liikennevälineet ovat esteettömiä myös
itsenäisesti liikkuvalla. Portaalliset liikennevälineet ovat esteettömiä avustajan kanssa liikut-
taessa. Pysäkkien ja asemien esteettömyydessä on eroja. Suurin haaste on pysäkin ja liiken-
nevälineen sisäänkäynnin välinen tasoero ja leveä rako. Helsinkiä voidaan kuitenkin pitää koh-
tuullisen esteettömänä matkailukohteena.

Esteetön matkailu ja kohteiden kehittäminen on ollut kiinnostava aihe viime vuosi-
na. Esteettömästä matkailusta tehtyjä opinnäytetöitä ovat esimerkiksi Accessible Tourism: A
Study of accessibility in Hotel Chains, Public Transport and Ferry Companies in Helsinki
(Khatri, Kumar; Shrestha, Rajkumar; Mahat, Ujjwal, 2012) ja Istanbul Inspirations - Case: A
Study on the Accessibility of Historical Attractions (Heiskanen, 2014) sekä The Accessibility of
Cultural Attractions for All Senses in Kerava (Toivanen ja Laine, 2015).

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1 Introduction

The main goal of this Bachelor's thesis was to assess and analyze the level of accessibility on public transport and transport platforms of Helsinki metropolitan area and the airport train station. The idea was to discover what currently works particularly well and what could still be improved and how this could be achieved. The use of test persons was a practical way of finding the issues that still have room for improvement. The main research question of this Bachelor's thesis could be summed as: How accessible the public transport in Helsinki metropolitan area is with a test user? Helsinki is marketed as a rather accessible city, but since theory always differs from reality, further testing is always needed. Accessibility in tourism and transport is such an important subject to study because the population of the elderly and disabled people all over the world is growing and because of this the market for accessible services expands. The accessibility of public transport and their platforms can be measured when evaluating for example the entrance doors, elevators, accessible toilets, ticket selling booths and machines.

As the capital of Finland, Helsinki is one of the most popular tourism sites in the country, besides Lapland. With 630 752 people, Helsinki is the most populated city in Finland. Helsinki also has extensive public transport system that combines trains, trams, buses, subway and ferries. Because of the tourism perspective, size of the Helsinki's public transport network and time constraints of the test people only few transport routes were tested. The quality of the public transport in Helsinki is rather consistent so the results do not differ from transport route to another a lot. (Visit Finland 2016)

In this Bachelor's thesis the author will review the process and results of studying the state of accessibility in public transport of Helsinki metropolitan area. The second chapter of this thesis starts with the theoretical part consisting the definition accessibility as a concept, importance of accessibility in tourism field and in public transport design is discussed in this part as well as the importance of accessibility in everyday life. The author explains some of Finland's accessibility themed laws and legislations and the research methods used in this thesis. The evaluation criteria used in the thesis are based on the Helppo Liikkua (Easy to Move) criteria of Invalidiliitto (The Finnish Association of People with Physical Disabilities).

Then the thesis introduces Helsinki as a city and as an urban travel destination. As the capital city Helsinki is important for the inhabitants of Finland and the foreign visitors alike. The author also knows Helsinki relatively well as she lives in the city. The current overall state of accessibility in Helsinki is discussed here.

After this there is the part about test days and results. There are five transport methods assessed in this Bachelor's thesis: the airport train, metro, bus, tram and ferry to Suomenlinna. This part explains how and when and where the field test was made and how it went. Summary of interviews with the test person can be found in this part. This part is clearly divided in chapters in a way that each form of transport has its own chapter. In these chapters the forms of transport are generally introduced and the results of testing reported.

At the end of this thesis are the conclusions and the author's self-assessment. There the author goes through the whole thesis process and evaluates and summarizes both the results of this study and the personal work and progress. At the very end of this Bachelor's thesis are the list of references and photographs used.

The author got the idea for conducting her Bachelor's thesis about accessibility matters after working as a caretaker for a disabled person for one summer, and after completing accessibility related study unit in Laurea University of Applied Sciences.

2 Accessibility

Accessibility or barrier-freeness is a rather new and quickly increasing topic in tourism field as there are many people with some type of a disability in the world, and majority of people will need accommodations based on physical needs at some point of their lives. From tourism perspective this means that a disabled person has a right to get tourism experiences with dignity and without physical barriers independently or with a helper. Tourism is customer service centered field and meeting the customer's physical needs is important part of a good customer service experience. Taking people's different needs and abilities in consideration creates better service. Accessibility is mostly talked about in the context of disabled people, but it does also include the elderly and people with small children. Accessible design benefits many groups of people. This study focuses on mobility restrictions such as using a wheelchair, rollator or baby stroller.

According to the World Health Organization (WHO) about 15% of all people, roughly one billion people, have some sort of a disability. The population of people with disabilities is estimated to be 50 million in Europe, so the target market is large. The number of disabled people is on the rise due to ageing population in many countries, chronic diseases and improved conditions of the disabled, who'll have longer, better lives now. (WHO 2016)

While accessibility is relatively new concept in tourism, it is a growing global trend both in tourism and general city planning and architecture. There are various organizations, groups

and associations for Accessibility in tourism, such as the European Network for Accessible Tourism (ENAT). ENAT is non-profit group for organizations that aim to study, promote or practice of accessible tourism in Europe. Aim of ENAT is to share and network of knowledge and experience of Accessible tourism related features such as tourism information, transport, infrastructure, design and service for visitors with all kinds of access needs. (ENAT 2016)

European Union has passenger rights legislations concerning people with mobility restrictions in public transport. According to these guidelines a passenger cannot be denied access to train or bus on basis of disability unless it is strictly health or safety issue or the vehicle is physically too small to accommodate the passenger and their mobility aids. One is also entitled of free assistance getting on and off the vehicle, changing trains and on the stations. For best results the assistance should be requested in advance. (EU 2016)

According to ENAT lack of accessibility has a direct and negative effect on tourist numbers and on the quality of tourism destinations and products. Accessible tourism does not only affect the disabled such as people with mobility restrictions or people who are blind or deaf, it also helps the frail elderly, pregnant people, families with small children and those with chronic or temporary health conditions (ENAT 2016). This Bachelor's thesis focuses on mobility restrictions, especially people travelling with a small child in a baby pram. Wheelchairs, rol-lators, canes and other mobility aids are also taken in consideration.

2.1 Accessibility in Finland

The Finnish law defines a disabled person as someone who due to disability or illness has long-term difficulties in managing everyday life matters. The law forbids discrimination based on disability and states that a disabled person has the right to live a normal life, for example, to study, work and start a family. By law, the municipalities are required to organize services such as transport and assistant services for disabled people who need them. The Non-Discrimination act states that employers and those in charge of education must improve the education and employment possibilities of the disabled and make the working environment accessible for a disabled person. (Infopankki 2015)

The Finnish Association of People with Physical Disabilities published an Accessibility guide in 2009. The guide is called "Esteettömyysopas - mitä, miksi, miten" (Free translation in English: Accessibility guide - what, why, how) and it was written by architect Kirsi Pesola. She writes that originally the legislations about accessibility concerned only public buildings and places but these requisitions have been extended to houses and workplaces. Pesonen remarks that accessibility is not an obstacle in creating good architecture. She feels like some criteria in the law have been expressed illogically or insufficiently. (Pesola 2009, p17)

Year 2015 Helsinki won the second place in European Access City Award contest for accessible city. The winner that year was city of Borås in Sweden. Finland has no victories from the contest but cities such as Turku have previously ranked high in the competition. The European Access city Award is awarded to the city that has improved accessibility aspects for living such as transport, information and communication, public facilities and that is committed to continue to improve accessibility. Accessible tourism products are not specifically included in the criteria. (ENAT 2016)

2.2 Research Methods

Qualitative Research Consultants Association (QRCA) defines qualitative research method as “Qualitative research is designed to reveal a target audience’s range of behavior and the perceptions that drive it with reference to specific topics or issues. It uses in-depth studies of small groups of people to guide and support the construction of hypotheses. The results of qualitative research are descriptive rather than predictive.” Qualitative research is typically in-depth descriptive research conducted by a small group. Originally Qualitative research methods were developed for the social and behavioral sciences and because of this the methods are best suited for studying social and cultural phenomena. The methods are used to capture the customer’s personal experiences and emotions. (QRCA 2015)

When planning a research, the research methods must be well chosen to suit the needs of the study. Qualitative research methods were chosen for this Bachelor’s thesis because it was recognized that the in depth analysis of few routes would be most useful for a study like this. Use of test persons was specially chosen because of the practical nature of these methods and also because people who need accessible services know best how they should work. The test person in question was a friend of the author with a year-old daughter. The field study with a test person was made in two separate days. Both test days ended with interviews in a cafe.

Author also made observations of the public transport alone to complement the findings made with test people. Observation can be defined as “the systematic description of events, behaviors, and artifacts in the social setting chosen for study”. Observing helps the researchers to learn of their topic in natural setting. (Kawulich 2005)

Interviews conducted for this thesis were two separate semi-structured interviews. A semi-structured interview is an interview with predetermined purpose. The topics of conversation are chosen beforehand but the conversation is informal and free. However, it is important to stay focused in the topic on hand. For semi-structured interview it is important to carefully choose the interviewee. (Tilastokeskus 2016)

By use of test people the author refers to a field test conducted on two separate days with a mother and her child in baby stroller. User testing services is one of the easiest way to evaluate new or already existing service. Of course it should be remembered that one person cannot represent a whole group and needs and abilities of people vary a lot.

Usability.gov defines user testing as “-evaluating a product or service by testing it with representative users. Typically, during a test, participants will try to complete typical tasks while observers watch, listen and takes notes. The goal is to identify any usability problems, collect qualitative and quantitative data and determine the participant’s satisfaction with the product.” Some benefits of Usability testing are immediately seeing if the person or people are able to complete the task, seeing how much time it takes for the person to complete the task and Identifying changes required to improve user performance. Not needing a formal lab for this type of study and finding out the general satisfaction of the users are also benefits test using. (Usability.gov)

2.3 Previous Studies on the Topic

Topic of accessibility on tourism has been on the rise lately. The author of this thesis studied several other theses that used similar methods on the subject. In 2014 Janni-Julia Heiskanen wrote a thesis titled “Istanbul Inspirations - Case: A Study on the Accessibility of Historical Attractions” where she used qualitative methods to study accessibility of tourist attractions and public transport in city of Istanbul in Turkey. Aino Laine and Mila Toivanen conducted a comprehensive accessibility research for their thesis “The Accessibility of Cultural Attractions for All Senses in Kerava” in 2014.

In 2012 Kumar Khatri, Rajkumar Shrestha, and Ujjwal Mahat used mixed research methods to study accessibility in several locations in Helsinki, also including public transport, what made the study very interesting for the author. Their methods were a combination of qualitative and quantitative methods. Their thesis was titled” A Study of Accessibility in Hotel Chains, Public Transportation, and Ferry Companies in Helsinki”.

2.4 Risks and Limitations for the Study

There of course are some risks and limitations for this study. One of these risks is the test user having to delay or cancel altogether her participation. The other test user being an infant also poses certain risks such as her getting ill or needing all the attention so her mother cannot focus on the study. Public transport strikes or unscheduled maintenance breaks or vehicle simply breaking down could delay the study. Worst case scenario for this would be

having to cancel studying one or several transport methods. Weather also could be a possible risk. For semi-structured interviews there is a risk of getting too much off-topic.

Due to limited time and resources the study concentrates purely on the people with mobility limitations, so people with hearing and vision limitations are left out from the study. The test person was not a disabled person, and this can affect the test results. Time limitations from the author and the test persons limited the number of public transport lines tested. The author also uses the public transport in Helsinki on daily basis what may affect her perception of the accessibility there.

2.5 Accessibility Evaluation Criteria

There are several readymade sets of criteria and checklists about accessibility by different Finnish disability organizations such as Invalidiliitto (The Finnish Association of People with Physical Disabilities). Most lists that one can find are for buildings or specific places or events. Criteria and guidelines below base on Helppo Liikkua (Easy to Move) criteria of Invalidiliitto. The criteria were familiar to the author beforehand since it was previously used on a Laurea project she participated on. (Invalidiliitto 2016)

A= excellent (fully accessible independently or with a helper)

B= good (partially accessible independently or with a helper)

C= poor (lots of barriers, a customer needs lots of help)

D= impossible (lots of barriers, the place does not suit for a disabled customer)

Signalization: outside and inside

- Clearly marked, location
- Height, audio, contrast colors, Braille
- Barriers
- Esthetic

Entrance:

- Illumination
- Ramp, rails
- Automatic or manual doors (how heavy), cloak room services, info desk
- Carpets
- Resting place / bench

Service environment:

- Illumination
- Any hinders on a way (A-stand, carpets)

- Service area / shops / restaurant, café
- Resting place / bench

Accessible WC:

- Illumination
- Signalization, Location
- Size (door 90 cm), rails
- Buttons + alarm

Elevator:

- Illumination
- Signalization, Location
- Size (door 90 cm)
- Buttons + alarm, audio

Hearing accessibility:

- Induction loop
- Flashing alarms / vibrating alarms
- Audio options / services

Visual accessibility:

- Clearly marked information, contrast colors and materials
- Braille
- Miniatures to be touched
- Magnifying glasses

This study concentrates on mobility limitations and travelling with small children, so not all listed above were used. Since the testing was made by the test user, the doors and such were not measured with tape. The importance was placed upon how easily and independently the test person could use the vehicles, stations and platforms.

3 Helsinki and General Accessibility in Helsinki

Helsinki has been the capital of Finland since Czar Alexander I of Russia moved the capital from Turku to Helsinki in 1812 in attempt to lessen the Swedish influence in Finland, and to bring the capital closer to Saint Petersburg. Population in Helsinki in January 2016 was 630 752 people, making Helsinki the largest city in Finland when judging by the population (Väestökisterikeskus 2016).

According to Visit Helsinki's most recent statistics in April 2016 247 000 overnight stays were recorder in Helsinki. 128 000 of these stays were made by Finnish people and 119 000 foreign-

ers and 8 000 of these were Russians. Finnish people stayed 21% present and foreign travelers 8% more than in April 2015. Overall staying in Helsinki in April increased 14% from the last year. In the year 2015 there were 5 510 350 trips to Finland. (Visit Helsinki 2016)

3.1 Visitor-Friendly Helsinki

There was a cooperation project called Helsinki for All between Helsinki City Board and Public Works Department. The project ran from 2002 till 2011. The aim of the project was to find solutions in making the city of Helsinki accessible for everyone. Buildings, streets, parks and public transport were all thought of. The project also had participants for example from associations for the elderly and disabled, representatives of city offices and government. (City of Helsinki 2012)

The project used accessibility indicators to monitor the progress of the accessibility. Some examples of the indicators include accessibility incorporated in city plans and local detailed plans, number of low floor buses and trains, number of accessible public transport stops, number of accessible sports facilities, number of accessible parks and play parks, number of accessible public toilets and number of accessible terminals (City of Helsinki 2013).

According to Visit Finland site, the city of Helsinki is rather easy to navigate with a wheelchair despite the cobbled stone streets. Helsinki is rather accessible city compared to many other capitals. Many museums and theaters are also made entirely accessible. The site also mentions that Finland's public transport system is considered to be one of the best ones in Europe and that lately changes have been made to make it more accessible. Ramps, wheelchair seats, lifts to the stations, audio announcements and stop display boards have been added for everyone's convenience. Only some of the older trains and trams remain inaccessible. According to Visit Helsinki foreigners travel to Finland increases 4-5% every year. (Visit-Finland 2016)

Suomenlinna, an old sea fortress is a UNESCO World Heritage site located only 15 minutes' ferry trip from the market square. The environment in Suomenlinna is challenging for those with mobility impairments since the uneven and occasionally hilly streets and paths are either covered in cobblestones, gravel or sand. There is a wheelchair route, but it is not marked with signposts. To see the route one needs to either download the wheelchair map or ask for it from the Visitor Centre. The map is also available as a mobile app. There are five accessible toilets in Suomenlinna. (Suomenlinna 2016)

Finland's Ministry of Transport and Communications (Liikenne- ja viestintäministeriö) conducted a research published as "Transport system accessibility. A summary of legislation, planning guidelines and development challenges", in 2015. The publication is about the then current state of accessibility in the public transport in Finland and the legislations and guidelines concerning this. (Ministry of Transport and Communications 2015)

In the study they discovered that concerning the road environments the biggest need for improvements were safety of the pedestrian safety, separating pedestrians and cyclists in the city centers, aftercare of construction sites and winter maintenance of the roads and road environments. In railway transport they found that elevation of some station platforms was lacking and overall the older stations tend not to be very accessible. According to the report in bus transport improvements need to be made about long distance transport, bus stop accessibility and winter maintenance. It was also suggested that the drivers need more training in taking into account different types of passengers. (Ministry of Transport and Communications 2015)

3.2 Helsinki Regional Transport Authority

Helsingin Seudun Liikenne (HSL), is in charge of arranging and providing public transport in Helsinki metropolitan area and in Kerava, Kirkkonummi and Sipoo. Official English name for HSL is Helsinki Regional Transport Authority. HSL has taken accessibility in account in both practical design of the vehicles and ticket sales. (HSL 2016)

Majority of the HSL buses and over half of the trams have low floor that make getting in with a wheelchair or a stroller easier. It is planned to increase the amount of low floored trains. Parents who travel with a child younger than six years old in a stroller travel free of charge. One reason given to this is that the customer in bus or tram would use the middle entrance and to purchase the ticket, or to show the travel card in the bus, they should move to the driver and that could be difficult or even dangerous since a person with a stroller would have to leave their child alone in the moving vehicle for a while. (HSL 2016)

4 Test Users

The tests with test users were conducted on two separate days, 18th of March and 4th of May. The test persons were the author's friend and classmate Maliha Raqip and her year-old daughter Rozelyn. Mrs Raqip usually uses public transport in Helsinki many times on the week so she is a test user with experience. Test days were agreed on around a week before the date and they both ended with an interview in a cafe. The tests did not have a strict schedule or plan, but a well prepared list of things that should be tested and discussed. Photographs and notes were made throughout the day. The camera used was equipment belonging to Laurea Univer-

sity of Applied Sciences. The test user used the transport methods independently and the author was mainly observing from the background.

The scenario tested was how well could Mrs Raqip with her daughter in pushcart use the public transport unassisted. The Author did not interfere with the testing, so when help was required the test person got it from the other passengers. Time prepared for each transport type was the duration of the ride to the destination plus ten to fifteen minutes at the station. Accessible everyday travel is important for the parents of small children such as the test person. Pavements should be designed in the way that they are wide enough for pushcarts too. Walkways need to have an even, flat surface so there is no danger of falling or tripping. The walkways also need to be clear of street lamps, benches or flower boxes. (Helppo Liikkua 2014)

4.1 Overview of the First Test Day

The first test was conducted on Friday 18th of March from approximately 10.00 till 12.30 o'clock. The test day was chosen approximately a week before so it would suit the best the author and the test persons. The author met the test person and her daughter at Tikkurila station because it is closest to the test persons' home and because the airport train stops there, even if that station is not part of this study. The test day had originally been planned to last longer but due to the unexpectedly cold and rainy weather it was decided to finish early for the safety and comfort of the infant.

On 18th the first thing tested was the airport train I from Helsinki to the Airport via Tikkurila of course including the central Helsinki railway station and the airport train station. Next was the metro from central station till Kamppi shopping center. The test persons departed to home using the bus from main station, Rautatientori, and this was also documented. Any specific tourism related bus routes were not chosen for the day, but the author travelled couple of stops with the test people in the bus.

4.2 Overview of the Second Test Day

The second test day was conducted on Wednesday 4th of May. The test day started approximately at 16:00 at the central railway station of Helsinki and ended at the same place around 18:30. Again the test day was chosen almost a week beforehand so it would suit the best the author and the test persons. The time gap between the first and the second test day was be-

cause of busy schedules of the test person and the author and because of poor weather conditions during the early spring.

On 4th of May we had two subjects to test, the 4T tram from Lasipalatsi platform to Katajanokka cruise ship terminal and ferry from Kauppatori to Suomenlinna and back. The test day ended with a semi-structured interview in a nearby cafe.

4.3 Semi-structured Interviews With the Test Person

After the test days Mrs. Raqip was interviewed in a cafe to find out her general opinion of how well the public transport usually works for her, maybe including few suggestions for improvements. There were not specific questions but it was an open conversation loosely following written guideline to find out points that might have not come up with the test rides. She noted that in general she thinks public transport in Finland is *“accessible, easy to use and very family-friendly”*.

In the author’s opinion the most interesting point was that the test person noted that she had not been aware of the fact that parent with a child in a stroller can use public transport free of charge, so she had been paying for the service that should have been free from over half a year. It can be deduced that this important piece of information has not been made clear enough. The accessible services do not work if the customers are not available of them. Mrs. Raqip mentioned in multiple occasions that the elevators for train and metro platforms are often quite *“unclean and have a bad odor”* in them and this makes using them a rather tedious experience.

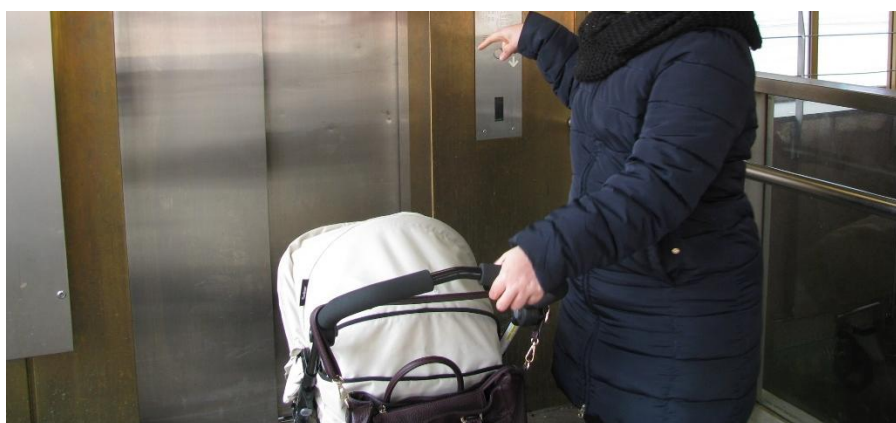


Image 1: Test person at metro elevator (Asp, 2016)

The test person noted that in her opinion the train is most accessible form of transport. However, this only is the case of the low-floored trains, getting in the older models with steep

stairs with a stroller is near impossible with no help. It can be gathered from this that with a wheelchair it would be impossible. She noted that sometimes she had to wait for the next train in hopes for it to be the low floored one. Being able to tell in advance what type of train is coming would make daily planning easier.

Busses are the type of transport that the test person uses the most due to the extensive amount of bus lines in Helsinki and closeness of the stop to her home. Buses generally have only room for two strollers or wheelchair users, so again sometimes the test person has to wait for the next vehicle.

The test person also wished that photographs that show her or her daughter's face would not be used in this report.

5 The Airport Train

The train route to the airport was opened on 1.7.2015. Originally the route did not quite reach the airport, but the traveler had to change to the buss from the last stop. Nowadays the train does directly to the terminal.

There are two trains that go from the central station to the airport and back. I train goes to the direction of Tikkurila first while P train heads to the direction of Myyrmäki first. Both trains have the same route that starts and ends at the Helsinki central railway station. I trains mainly leave from tracks 1-3, and P trains departure from tracks 16-18. I train was used for this study. A regional ticket is required for journeys from Helsinki to the airport and vice versa. (HSL 2016)

The train trip was rather effortless since all of the airport trains are the newer model low floored trains with large places specially tailored and marked for the strollers and wheelchairs. The trains are well lit. At the entrance the doors are automatic and open with a button placed low enough that it is easy to use. The double doors are also very wide, thus getting in and out with a mobility aid or a baby pram is easy.

Signalization for the baby pram place was easy to find as it is marked on the doors with a large, clear wheelchair picture and all the text in these trains is available in Finnish, Swedish and English. Getting in and out of the train was easy for the test person. At the time of the study there was a lot of space to move around, but during the rush hours that would not be that easy.



Image 2: Test person entering the train (Asp, 2016)

Special wheelchair and pushcart places had enough space for multiple people and the railing made these safe to use, as the cart or wheelchair cannot slip very far away. Using brakes is still recommended for carts and mobility aids to stay on the place. The train cart has sturdy railing for safety and large windows. On the other hand, there are no contrast colors.



Image 3: Seats and railing in the train (Asp, 2016)

5.1 The Airport Train Station

The station was remarkably clean, well illuminated, spacious and easy to move around. There were not much contrast colors. There is a help button (instructions pictured below) meant for disabled people who need assistance. The idea of it is that if you need assistance in catching your flight you push the button that opens a direct call to the assistant service. The instructions are written on three languages, Finnish, Swedish and English. In general, the signalization at airport and airport train was the best of all placed tested; being very visible, easy to understand and available in three different languages.



Image 4: Pick up point at the airport for those in need of assistance (Asp, 2016)

The elevators were spacious enough and easy to use. The elevators were equipped with alarm buttons and clear weight limit. Signalization at the airport was clear, well placed and easy to understand. After the elevators the gate from the station to the airport itself has automatic gate with a button. The button (pictured below) has instructions on three languages and was easy to use. The text was not available on braille.



Image 5: Button that opens the gate to the airport (Asp, 2016)

5.2 Central Helsinki Train Station

The station is at same level as low floored train so it is easy to navigate from the platforms to the station. The main door from the train tracks to inside the station was heavy and rather hard to open alone when using a wheelchair or a pushcart. Pictured below is the test person getting through the heavy door that is being held open by a stranger. It would have been difficult for the test person to open these doors alone for the pushcart. Biggest development suggestion for the station would obviously be making these doors automatic. The station is rather old so it is not the most accessible place, however it is spacious.

Tickets can be bought either on the train from the conductor, or from machines at the station. Ticket sales automats are located both inside and outside of the station and are rather low and thus easy to access even when using a wheelchair. One can also purchase ticket inside the train cart that is clearly marked with the ticket sales symbol.



Image 6: Test person entering the Central Train Station (Asp, 2016)

Overall grade by the test person and the author for Train and the stations tested is A, fully accessible independently or with a helper. Test user with a baby pram was able to use everything with just minor help.

6 Metro

Helsinki Metro is Finland's only metro system and it was opened in August 1982. Yearly people take 62 million metro trips. The Metro system currently has 17 stations in use, and 9 of those

are underground. The Metro system in Helsinki is made of one single forked line and the total length of this line is 21.1 kilometers. Currently the metro serves the East Helsinki and the city center the best, but the metro is going to expand to Espoo, western Helsinki. (City of Helsinki 2016)

The metro trains themselves are rather accessible since they have no steps and the platforms are always at the same level with the train floor and the automatic doors are rather wide. There is space for wheelchair or pushcart at every door. The test person could easily get in and out of the metro train. Metro is well illuminated and brightly orange colored with contrasting black color.

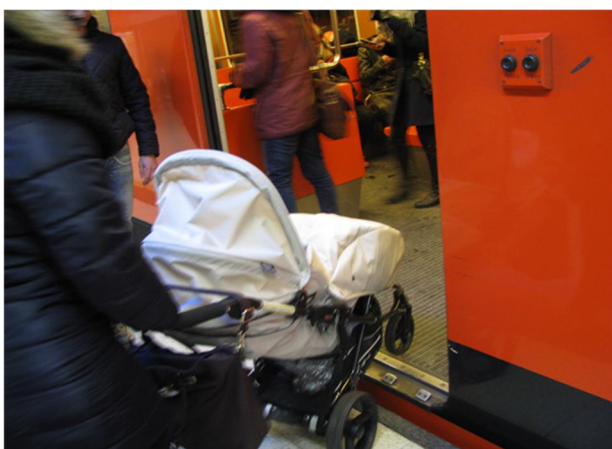


Image 7: Test person entering the metro (Asp, 2016)

6.1 Central Station

The elevator from the train station down to the metro station is outside the train station, but there is no signalization for it at the station. Person who can take the stairs can get to the metro station straight from inside of the train station but person in need of the elevator has to take a detour. Test person says she found the elevator the first time she needed to use it by following other people who used baby prams. If one is already outside the elevator is easier to find since it has a big “M” sign. From outside you need to take two elevators to get to the metro tracks. Both elevators are according to the test person constantly unclean.

The station itself is rather accessible since it is spacious and the signalization is good. There are benches for people to rest while waiting for the metro. The station has metro maps on display and the illuminated monitors show the arrival time of the next train in real time. Area that is too close to the metro tracks is well marked with black line that contrasts well from the white floor.



Image 8: The test person at the metro station (Asp, 2016)

6.2 Kamppi

Kamppi station is located on the Kamppi shopping center. There is also a large bus station in Kamppi. The signalization in Kamppi station was adequate but inconsistent. For example, one elevator has instructions written on braille when other had not. The directions for the elevators and where they lead are big and well light. The elevators of course were equipped with the obligatory emergency buttons. The maximum weight capacity was also clearly marked inside.



Image 9: Signalization at Kamppi station (Asp, 2016)

Overall grade by the test person and the author for metro and the stations tested is A, fully accessible independently or with a helper. Test user with a baby pram was able to use everything with just minor help.

7 The Bus

The Finnish people make approximately 346 million bus trips per year and bus trips makes up almost 60 percent of all public travel in Finland. Outside of Helsinki metropolitan area the percentage of bus trips from all forms of public transport is 80%. Buses are often used by commuters and children on their way to school. Buses reach the places in the city where one cannot get with other forms of public transport. Bus is also very safe form of transport for the passenger. The oldest still operating bus companies in Finland were found in the 1920s. (Linja-autoliitto 2016)

Bus 724 from Helsinki Central Railway Station to Päiväkumpu was a low floored one so the test person had no problem getting from the ascended rock platform in the bus. The bus had clearly marked place for the baby pram and there were no other pram users in the bus. Place for the prams and wheelchairs are at the middle door of the buss, where the foldable seats are. The Bus was the test person's favorite and most used form of transport. Bus stops generally do not have room for more than two or three people to sit and rest while waiting for their bus.



Image 10: Baby Pram in the bus (Asp, 2016)

7.1 Helsinki Railway Station

The station is located right next to the central train station and consists of many bus stops that are set on a cobbled stones and high thresholds (pictured below). All the platforms at the station do have stone ramps.



Image 11: Stone threshold at the bus station (Asp, 2016)

Overall grade by the test person and the author for bus and the bus platforms tested is A, fully accessible independently or with a helper. Test user with a baby pram was able to use everything fully independently. Only possible minuses for the bus are during rush hour when there might not be enough space in the buss, or the old bus stops that are hard to access because of high thresholds.

8 Tram 4T

Trams are main public transport form in the inner city. There are approximately 200 000 passengers on the trams on every weekday. There are 10 tram lines in Helsinki though some of the lines have varied version, for example 4 and 4T. Regular 4 goes to Merisotilaantori and 4t to the Katajanokka terminal but otherwise the line is the same. Tram 4t is soon being replaced with line 5 that goes from Katajanokka terminal to the central train station and back. Horse drawn tram service in Helsinki started year 1891 and the modern day tram transport system began to evolve in 1950s. (Finnish Tramway Society 2016)

The author and test people took Tram 4T from Lasipalatsi to Katajanokka terminal. Since it was the rush hour, getting space for the pushcart was bit difficult. The tram only has one door where people on wheelchairs or with pushcarts can get in so this part gets crowded very quick, especially on the tram to terminal because people travel with large suitcases. Like the bus, the tram has pram and wheelchair area in front of foldable seats. Especially on this tram it would be useful to have more than one place for baby prams, wheelchairs and large suitcases. Because of the low floor getting in and out however was easy for the test person. Tram is well illuminated.



Image 12: Baby pram in the tram (Asp, 2016)

8.1 Lasipalatsi Platform

Lasipalatsi platform is placed between the traffic on Mannerheimintie. The platform is easy to access since it has stone ramps at the ends. Anyhow, pushing the cart over the tram tracks and cobblestones might be mildly difficult. The location is also slightly worry some since it is indeed in the middle of traffic. During rush hour one might have to wait a whole to reach it.



Image 13: Lasipalatsi tram platform (Asp, 2016)

8.2 Katajanokka Terminal

Tram 4T arrives right in the front of the Viking Line cruise ship terminal that is the building in the picture below, taken from the tram platform. After the testing Tram 4T has been replaced with Tram 5 that goes from central train station to the Viking Line terminal.

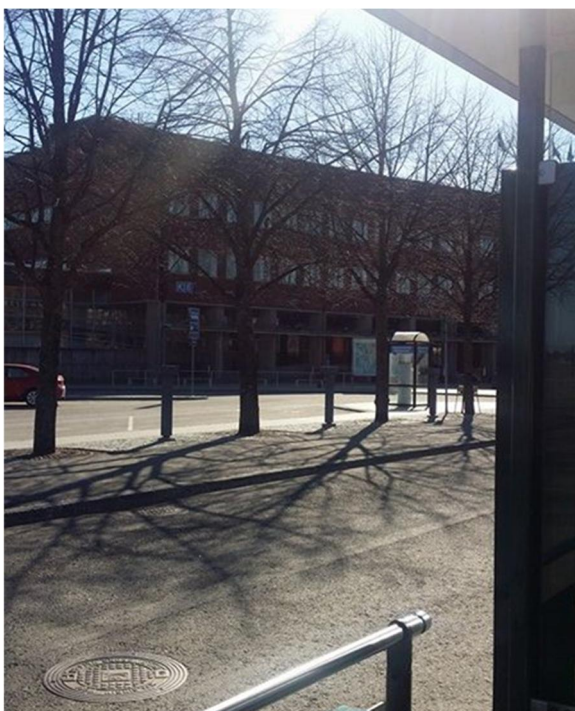


Image 14: Katajanokka terminal seen from the tram platform (Asp 2016)

The alternative tram to the terminal, 4, arrives one at the corner of Hotel Katajanokka and Eurohostel. The platform is similar to the one at Lasipalatsi and has ramps at the ends of the platform. The stone ramp is easy enough to use with pushcart, but the small threshold might make it bit more difficult for a wheelchair.



Image 15: Stone ramp at the tram platform (Asp, 2016)

Overall grade by the test person and the author for tram and the tram platforms tested is A, fully accessible independently or with a helper. Even during the rush hour, the test user with a baby pram was able to use everything fully independently.

9 Suomenlinna Ferry

The ferry from east side of the Market Square to Suomenlinna sea fortress runs one to four times an hour depending on the season. In Suomenlinna the ferry arrives and departs from the main dock of Iso Mustasaari Island that is on the north side of Suomenlinna. The ferries go from early morning till late night through the whole year. The ferry has space for one to two vehicles and reservation for a vehicle should be made in advance. Since the ferry service is part of HSL city transport network the standard HSL tickets and travel cards are accepted. Tickets need to be bought beforehand from the machines at the ports or from ticket booth that operates during the summer months. Tickets are not sold on board of the ferry. (Suomenlinna 2016)

The ferry to Suomenlinna and back was the last public transport method tested. It was the first time the test person used the ferry with a pushcart, but she had been to Suomenlinna before.

The ferry was big and not at all crowded so finding space for the pushcart was not difficult even if there was no predetermined place for them. One cannot get to the observation deck with pushcart or wheelchair because of the steep stairs picture below. A person can still observe the sea rather well from the lower deck too.



Image 16: Stairs in the Suomenlinna ferry (Asp, 2016)

Moving inside the ferry was rather effortless and there was a ramp over steep threshold at the door to inside and the doors were not too heavy. There however is no ramp to get back out, though the threshold inside was lower than the one at the other side. Both doors pictured below. The ferry was not very brightly illuminated. The ferry has a toilet, but it is very small and not accessible one.



Image 17: Ferry door ramp (Asp, 2016)



Image 18: Ferry door from the other side (Asp, 2016)

9.1 The Doc at Kauppatori

The pier at Kauppatori was and easy to navigate. There was a smaller gate for people traveling by foot and then gate for vehicles. The gate for vehicles is also used for people with baby strollers or wheelchairs or other reasons why they cannot proceed by the smaller gates Overall the docs are easy to use.

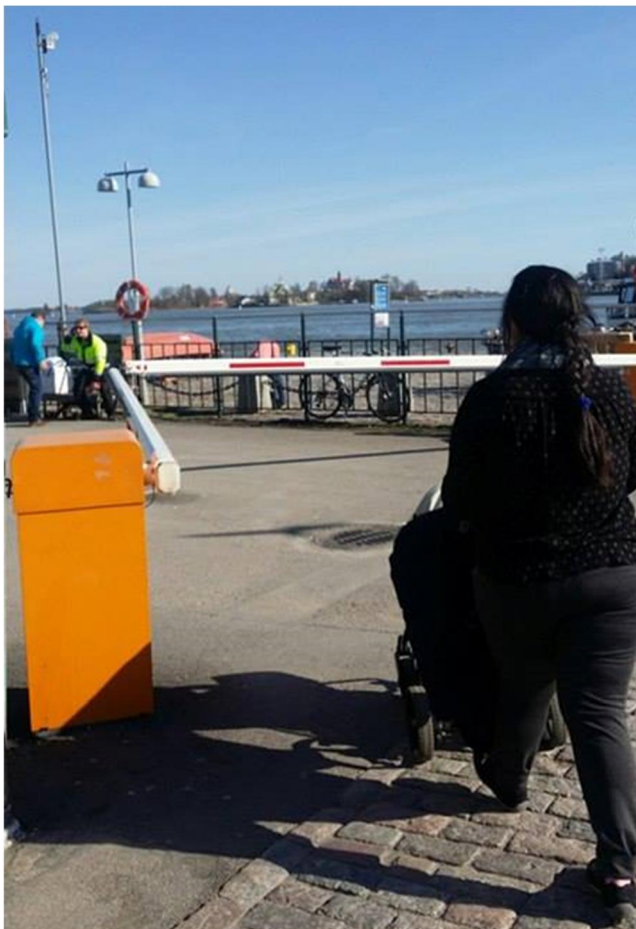


Image 19: The test person entering the dock area (Asp, 2016)

9.2 The Doc at Suomenlinna

The piers at Suomenlinna is very similar to the one at Kauppatori. There were also two gates, one for people on foot and one for vehicles, prams and wheelchairs at Suomenlinna. At the Suomenlinna end, the ground is first covered in sand and then cobblestones that make moving around bit more difficult.

Overall grade by the test person and the author for the Suomenlinna ferry and docs is B, partially accessible independently or with a helper. Test user with a baby pram was able to use everything but the sightseeing deck independently. Accessible moving around in Suomenlinna is possible with a bit of help.

10 General Improvement Suggestions

The author does not possess many new ideas for improvements. Accessible toilets equipped with child care facilities would of course benefit many people and such they would make excellent addition to the large stations at least. As some general suggestions the author sug-

gests adding some contrast colors and -stripes to stairs and other places in vehicles and stations. However, the aspects in need of most improvement are often the older pieces of equipment, such as older non-low floor trains and trams, that are already constantly being replaced with newer, better and more accessible models.

11 Conclusions and Reflection

The results for this study were rather positive. Accessibility in Helsinki has been studied in multiple occasions before, especially from the official authorities, and the city has even placed second in a contest for most accessible city in Europe, so in general the level of accessibility is satisfying. New and modern vehicles, stops, stations and platforms have been designed while keeping accessibility in mind. There also have been multiple accessibility related theses lately.

In conclusion it can be said that the Helsinki public transport network is rather accessible though there is room for some improvements. It can also be said that the accessibility matters related to the public transport are headed in the correct direction. An idea for further research topic that occurred to the author is finding out the level of accessibility of HSL website. Another further accessibility study in public transport could be made from the point of view of the visually impaired or deaf.

The author of this Bachelor's thesis feels like this was a great learning experience for her. She learned a lot not only about the subject but about conducting and reporting a research. The biggest challenge was to do everything alone, as the author has been used to conduct academic work in groups or pairs. The author prefers doing smaller tasks individually, but the thesis proved to be challenging to work on all alone. Interaction and communication with a work pair was something the author found herself missing when running into a problem. Time management was also slightly difficult, trying to balance Bachelor's thesis and work. The whole process stretched out to be longer than originally planned. Test days with a test person were most interesting parts of the thesis process for the author since she thinks her strengths lay in research and action rather than writing and reporting. Writing the Bachelor's thesis taught the author a lot about structuring and analyzing findings.

References:

Barbara B. Kawulich Participant Observation as a Data Collection Method

Accessed 22.6.2016

<http://www.qualitative-research.net/index.php/fqs/article/view/466/996>

City of Helsinki. 2012. Accessibility Plan. Accessed 1.3.2016

<http://www.hel.fi/hki/HKR/en/Helsinki+for+All/The+City+of+Helsinki+Accessibility+Plan>

City of Helsinki. Esteettömyyslinjaukset. 2016. Accessed 1.4.2016

http://www.hel.fi/static/hkr/helsinkikaiille/esteettomyyslinjaukset/accessibility_guidelines.pdf

City of Helsinki. 2016. Living in Finland. Accessed 1.4.2016

<http://www.infopankki.fi/en/living-in-finland/health/disabled-persons>

European Network for Accessible Tourism. Accessible Tourism. 2016. Accessed 10.4.2016.

<http://www.accessibletourism.org/>

European Union. 2016. Passenger Rights. Accessed 21.6.2012

http://europa.eu/youreurope/citizens/travel/passenger-rights/reduced-mobility/index_en.htm

Finnish Tramway Society. Tramways. Accessed 7.5.2016

<http://www.raitio.org/english/tramways.htm>

Heiskanen. 2014. Istanbul Inspirations - Case: A Study on the Accessibility of Historical Attractions. Accessed 25.7.2016

<https://www.theseus.fi/bitstream/handle/10024/82725/Istanbul%20Inspirations%20-%20Bachelor%20Thesis%20-%20Janni%20Heiskanen.pdf?sequence=1>

Helppo Liikkua. 2016. Accessed 24.4.2016

<http://helppoliikkua.fi/>

Helsinki Region Transport. Accessibility. 2016. Accessed 20.3.2016

<https://www.hsl.fi/en/information/how-use-public-transport/accessibility>

Invaliidiliitto. 2016. Esteettömyys. Accessed 1.7.2016

<http://www.invalidiliitto.fi/portal/fi/esteettomyys/>

Invaliidiliitto. 2016. Invaliidiliitto. Accessed 1.7.2016

<http://www.invalidiliitto.fi/portal/fi/invalidiliitto/>

Khatri, Kumar; Shrestha, Rajkumar; Mahat, Ujjwal. 2012. A Study of accessibility in Hotel Chains, Public Transport and Ferry Companies in Helsinki. Accessed 30.4.2016

https://www.theseus.fi/bitstream/handle/10024/45817/Accessible%20Tourism%20thesis%20Kumar_Rajkumar_Ujjwal.pdf?sequence=1

Linja-Auto.liitto. 2016. Accessed 11.4.2016

<http://www.linja-autoliitto.fi/fi/>

Pesola. 2009. Esteettömyysopas mitä miksi miten. Invaliidiliitto. Accessed 20.4.2016

http://inport2.invalidiliitto.fi/esteettomyysopas_pdf.pdf

Qualitative Research Consultants Association. QRCA. 2015. Accessed 2.4.2016

<http://www.qrca.org/>

Qualitative Research Consultants Association. 2015. What is Qualitative Research? Accessed 2.4.2016

<http://www.qrca.org/?page=whatisqualresearch>

The Governing Body of Suomenlinna. 2016. Accessed 31.3.2016

<http://www.suomenlinna.fi/en/governingbody/>

Tilastokeskus. 2016. Tilastollinen tiedonkeruu. Accessed: 22.6.2016

<https://www.stat.fi/virsta/tkeruu/>

Toivanen & Laine. 2015. The Accessibility of Cultural Attractions for All Senses in Kerava. Accessed 10.5.2016

http://theseus.fi/bitstream/handle/10024/98673/Bachelor_s_thesis_Aino_Mila.pdf?sequence=1

US Department of Health & Human Services. 2016. Usability Testing. Accessed 18.4.2016

<http://www.usability.gov/how-to-and-tools/methods/usability-testing.html>

Visit Finland. 2016. Accessible Adventures in Finland. Accessed 30.3.2016.

<http://www.visitfinland.com/article/accessible-adventures-finland/>

Visit Helsinki. 2016. Accessed 10.7.2016

<http://www.visithelsinki.fi/fi>

World Health Organization. 2016. Disabilities. Accessed 2.4.2016

http://www.who.int/disabilities/world_report/2011/report/en/

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