

Navigating Urban Spaces: Mobility Experiences of Wheelchair Users at Groningen's Vismarkt

Author: G.T. Steringa

Student Number: S4093925

Master Thesis Population Studies

Faculty of Spatial Sciences (Demography)

Supervisor: T.A. Lowe, MSc

Date: 15-04-2024



**university of
groningen**

Abstract

This thesis aims to explore the mobility experiences of wheelchair users while moving around Groningen's Vismarkt. Focuses of this research have been the challenges and perspectives of wheelchair users while navigating the Vismarkt and its surrounding areas. The Vismarkt, known for its marketplace, as well as nearby cafes and restaurants, presents an interesting case for individuals making use of a wheelchair. Through semi-structured interviews, this thesis aims to research the mobility experiences of wheelchair users in this specific urban area. Focusing on physical, social, and spatial barriers, insights have been gathered from various wheelchair users. The findings highlight physical, as well as spatial constraints encountered by wheelchair users, most prominently uneven pavement, lack of public transport reaching the market area, and uneven distribution of market stalls on market days. Additionally, this research explores potential spatial measures that could be undertaken to improve mobility on and accessibility to the Vismarkt, aiming to create a better public space for everyone. In conclusion, the proposed measures are: removing the current cobbled surface of the Vismarkt, and creating a flat space where wheelchairs can move comfortably; reinstating alternative transport modes so that wheelchair users can reach the Vismarkt by public transport, and redistributing market stalls on market days, reducing busyness and alleviating congestion on the market itself.

Keywords: Mobility experiences, Wheelchair mobility, public space, immobilities, motility, accessibility

Table of contents

Introduction.....	3
Literature review.....	4
Methodology.....	9
Findings.....	16
Discussion & Conclusion.....	22
Bibliography.....	25
Appendix A: Interview guide.....	29
Appendix B: Toestemmingsverklaring (Empty Consent Form).....	30
Appendix C: Extra questions regarding participant demographics.....	31
Appendix D: Some code groups that were relevant within analysis.....	32

Introduction

Problem Statement

Estimates from 2018 have suggested that 5,7% of the total population of the Netherlands aged 12 or older are making use of a mobility aid (CBS, 2022). It has also been calculated that around 225.000 to 250.000 people in the Netherlands make use of a wheelchair (SCP, 2007). With the Netherlands having a population of around 18 million people at the time of research (CBS, 2024), this number would account for 1 in 72 people in the Netherlands making use of a wheelchair, either permanently or temporarily. Regarding these people's participation in society, it has been shown that people more often blame themselves and their own physical and mental condition for their dissatisfactions, than society itself being inaccessible (De Klerk, 2002).

From 2020 onwards, a Dutch law has been in place that states that every human being must be able to be autonomous according to their possibilities (Overheid.nl, n.d.). More recently, article 1 of the Dutch constitution was amended on 17 February 2023 to include disability within discrimination grounds (Rijksoverheid, 2023). Adding the aspect of disability within anti-discrimination law is a major step towards a more inclusive direction, most importantly within the aspect of mobility and its connections to spatial planning. The law implies that public areas, including outside areas, are not allowed to be of a standard that would exclude their use by alternative transport modes, for example, wheelchairs. The combination of the two aforementioned laws should thus improve and account for the general mobility of wheelchair users.

Research gap

In general, the concept of mobility experiences has been widely researched, such as in a wheelchair distribution program in southern India (Oliver, 2012). Research on wheelchair users may also be oriented towards medical aspects, with a special focus on wheelchair athletes (Lee et al., 2021). Some research has also been done regarding the inclusion of wheelchair users in society (Amanze & Nkomazana, 2020). An example of previously performed research on mobility participation, albeit in a quantitative way, is the research by Mortensen et al. (2012). They researched the associations between mobility, participation and wheelchair-related factors for wheelchair users. Their most important finding concerning this research is that environmental barriers are positively correlated with participation. This in practice means that wheelchair users who participate more often, are better at recognizing environmental barriers.

Little research has been performed on wheelchair users' experiences within specific small public areas, especially not in public market areas. Public market areas often represent and enhance local community-building, and their use is therefore important to local inhabitants (Petrović et al., 2021). Because of this, the study area of this research will be the Vismarkt, a long-standing market area in the city center of Groningen, in the north of the Netherlands. Specific features of the Vismarkt area are mentioned later in this research.

Literature review

Mobility, Disabilities, and Motility

Over the last twenty years, the field of mobility studies has seen changes and new approaches, both in coverage, as well as integration and application, which has resulted in the “new mobilities” paradigm (Sheller & Urry, 2006). Within the context of this research, this shift in paradigms is most importantly characterized by connecting the concept of mobility and its study field to immobilities, and its associated concepts of mobility rights and mobility justice (Hannam et al., 2006; Sheller, 2014). Mobility justice in the context of this research mostly considers that all people can safely navigate and enjoy freedom while moving in their environment, regardless of their identity, needs, or characteristics. For people with disabilities, and especially people having walking difficulties that confine them to a wheelchair, mobility justice may not be guaranteed. As Imrie (2000) describes, the mobility of disabled people is determined by sociocultural attitudes, practices, and the resulting design of the built environment. As they have found, the mobility of the urban environment for disabled people often revolves around the limited understanding of bodily limitations and disabilities by able-bodied people. This means that there is a disconnect in the interests of users of the urban streetscape, which results in disabled people being punished in an environment that mostly caters to people with an able-bodied status. Jackson (2019) reiterates that in neighborhood-scale policy around the built environment, input from people with disabilities in improving the built environment is hardly sought. This then causes policy makers to falsely assume that the condition and status of the current built environment in a neighborhood are sufficient, while it does not account for a sufficient level of mobility for people with disabilities.

An important concept that expands on spatial mobility and immobilities is motility, which explicitly focuses on the capacity and potential to be mobile (Flamm & Kaufmann, 2006). Motility considers the possibilities for mobility of a person, and how a person uses these possibilities to undertake personal activities. This does therefore mean that the aforementioned potential for mobility does not solely depend on physical or spatial aspects, but also the aspirations and ambitions of the person, and whether technical or communicative transportation systems, if needed, are sufficiently accessible. Flamm & Kaufmann (2006) consider motility to consist of three components: access, skills, and cognitive appropriation. Access considers the extent to which services or tools for mobility are available, and to what extent they may be used. The skills component refers to how well a person has the appropriate knowledge and organizational capacity to plan and execute an activity. Cognitive appropriation results from the access and skills components, as it is what people do with their access and skills with regard to the activity at hand. The combination of the three aforementioned components results in a person’s motility potential, which describes whether and how a person may or may not transform motility into travel (Flamm & Kaufmann, 2006).

Perceived Mobility, Mobility Experiences, and Social Roles

Another concept that relates to how and whether motility is used is perceived or experienced mobility. The basics of experiences of the mobility concept have been outlined by Cresswell (2010). As they outline, the full mobility concept consists of three aspects: movement, representation, and practice. Movement in this sense is seen as getting from A to B. Representation considers the meaning of mobility, and for example looks at the purpose of mobility, or what it tries to achieve. Practice considers how mobility is sensed and experienced. It is argued that context and time are imperative factors when considering meanings and sentiments that contribute to mobility. As for how perceived mobility differs from motility, while motility refers to the actual physical, spatial, and knowledge abilities of a person to change their position in space, perceived mobility considers how a person perceives or experiences mobility (Shliselberg et al., 2020). Perceived mobility therefore focuses more on the mental aspect of mobility than motility does, and this might show in the sense that a person may feel restricted in their mobility due to fear, social barriers, or confidence issues, while they technically would have the physical capability to move.

As Faber & Van Lierop (2020) have shown, the influence on a person's perceived mobility can be caused by multiple factors and in multiple ways. One example they name is that a poorly planned built environment increases the experience of anxiety and fear of having an accident while moving, which results in lower confidence in the person's ability to move freely. Another example they name is that people are more relaxed while moving when having family or friends with them, therefore improving their perceived mobility. Narratives and discourses surrounding the person moving, the way of moving, and the space of moving are all dependent on contexts and time scales (Committee for the Study on Improving Mobility and Safety for Older Persons, 1988). Additionally, as found by Urry (2009), the developing modern urban life has emphasized people being different from others, whether this is perceived positively or negatively. This also contributes to a person's confidence in their mobility within an urban area in relation to others, as it is often compared to other people's confidence and abilities. These differences and contexts between people are thus very much connected to both culture and politics, and society's role in mobility experiences is therefore recognized. Considering the direct effect of society and social roles on wheelchair users historically, work by Gleeson (1999) serves as a means to show how society's perceptions towards disabled people have been historically portrayed. A good example of this is the so-called "disability oppression", in which oppressive stereotypes have been promoted, especially within Western societies, leading to cultural, social, and labor exclusion for disabled people (Gleeson, 1999).

Wheelchair Mobility

Mobility experiences are heavily influenced by certain characteristics, such as time and context. With the characteristics of the wheelchair having proven to be of significant importance (Medola et al., 2014), the characteristics of a person should not be overlooked. One example of this notion is the findings that have been performed by Korotchenko & Clarke (2016), who have researched experiences of mobility-impaired people with power mobility devices. One of their major findings was that the age of the user plays a crucial role in both mobility experiences as

well as one's perceptions of their body. Additionally, they also found that the use of a power mobility device can be felt as threatening by the user, and the user can experience potential bodily deterioration heavier because of it.

There are five important factors that wheelchair mobility is influenced by, namely: the user, the wheelchair, the (built) environment, daily activities and social roles, and training received to operate the wheelchair (Routhier et al., 2003). It has also been found by Medola et al. (2014) that a wheelchair user's mobility performance can be greatly improved by certain wheelchair features and setups, which have a substantial impact on how wheelchair users move around. The wheelchair itself is important, but the environment arguably has the greatest impact, as the wheelchair user depends on the environment's characteristics and potential. A wheelchair user's independence in moving around can be severely restricted by a lacking environment, and there is almost nothing the wheelchair user can do to change this. Zooming in on the environmental aspect, rough and uneven surfaces pose the biggest transportation challenges for wheelchairs, making general mobility and transportation challenging for wheelchair users (Hillman, 1994). Combining the human and mechanical aspects of wheeled transport, it seems as though both carry significant weight in the dynamics of wheelchair users' mobility experiences. As aforementioned, there is also the environment component, on which a wheelchair user is heavily dependent. Within the context of mobility experiences, the most important notion is that mobility is crucial for self-sufficiency, and the current state of the built environment is not in an adequate state to guarantee this yet (Labbé et al., 2020). Additionally, when considering wheelchair mobility from a bigger perspective, wheelchair users have been experiencing difficulties in moving around inaccessible public spaces, and their knowledge is often ignored (Stock, 2023).

Conceptual Model

By combining all concepts and aspects recognized in the previous sections, and dividing them into different categories, Figure 1 has been created. Four different categories have been identified in the literature to influence mobility and associated mobility experiences for wheelchair users.

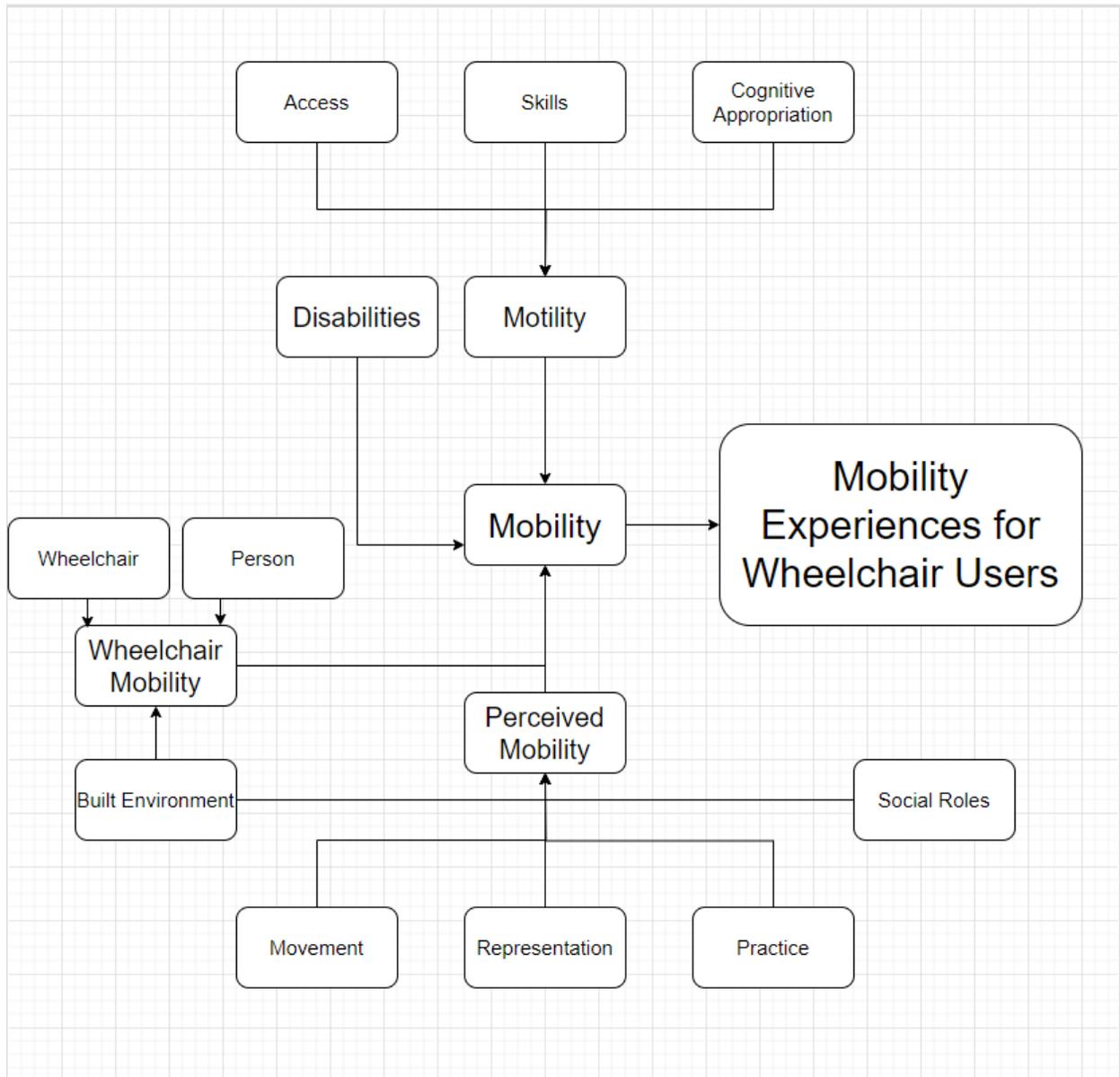


Figure 1: Conceptual model of the study

Research Objective

The objective of this research was to explore wheelchair users' experiences with mobility in Groningen's Vismarkt area. Focuses of the research were to gain a better understanding of perceived difficulties, as well as social roles' contributions to mobility experiences. Finally, potential spatial measures were to be explored for the future.

Research Questions

a. Main research question

How do wheelchair users experience mobility within Groningen's Vismarkt?

b. Research sub-questions

- What is the perceived mobility for wheelchair users within the built environment of the Vismarkt?
- How do social roles play a role in influencing mobility experiences for wheelchair users on the Vismarkt?
- What improvements to the built environment could be undertaken in the future for wheelchair users in the Vismarkt?

Methodology

Data collection

As the research question and sub-questions have indicated, the research revolved around experiences, which especially within a specific and niche study population would not have been fit for statistical methods (Rahman, 2020). This indicated that qualitative methods were best suited for this research. As for possible qualitative data collection methods, creative methods, such as graphic elicitation or move-along interviews were not considered to be suitable, as the researcher had little useful experience using them. Therefore, the traditional qualitative data collection methods, such as interviews, focus groups, and participant observation were considered. With the research focusing on the personal experiences of wheelchair users, collecting data by participant observation was disregarded, as the resulting data would not have suited a fitting analysis. Focus groups were also deemed suboptimal, as the research considered potentially sensitive topics, which participants may not have talked about in a group, and the entire goal of data collection was to gain an understanding of individual experiences. Therefore, in terms of data collection, the research has employed the use of semi-structured interviews. The interview guide has tried to seek lived experiences in wheelchair users' mobility and their perceptions, both in the mobility context, as well as potential spatial measures that could be taken for the future to improve future experiences. The interview guide that was used for this research has been shown in Appendix A. Since the interviews tried to gather lived experiences, open-ended questions were deemed most suitable, and different probes per question were used to increase the depth of answers from the participants (Pulakos & Schmitt, 1995). Open-ended questions were also suitable as the participant could answer the question in their own words and give extra input where desirable.

The research focused on wheelchair users who in some way or form make use of the Vismarkt and its market facilities. Considering inclusion or exclusion factors, one important distinction to make is that a wheelchair user is seen as a person who uses a wheelchair for transportation but does not necessarily require one. What this means is that both permanent and situational wheelchair users have been included in the study population. Also, mobility scooters have been considered suitable within the study population as well, since they serve similar purposes as a wheelchair does.

Data analysis

After interviews were performed and transcribed, an analysis of interview transcripts followed. As the interview questions sought to acquire personal experiences from different people, reflexive thematic analysis seemed to be the most suitable and fitting option (Braun et al., 2019). Firstly, the transcripts were thoroughly read to gain a deep understanding of the content of the data. Secondly, the interview transcripts were coded to highlight key thoughts and concepts apparent within the data. In the case of this research, the coding was done inductively, looking explicitly at the interviews themselves. Thirdly, the codes were grouped into themes based on similar subjects or concepts. The coding and the resulting themes were then reviewed and refined until a representative reflection of the data was achieved. Some of the most relevant

code groups have been shown in Appendix D. Quotes were greatly important in analyzing the experiences that have been researched. Within the inductive coding process, themes have been focused on as having meaning within the context and reality of the participant. Through the interpretation of the researcher and comparison of the opinions and realities of the participants, narratives have been created to give a voice to the thoughts and ideas that are present within the data.

Ethical considerations

Considering potential ethical issues during the research process, the most important issue could be the dynamics between the researcher and participants. As for positionality, the researcher is able-bodied, and the participant is a wheelchair user. For the researcher, it is therefore imperative that no prior assumptions should have been made that could have potentially offended the participant. The researcher was born and raised in the Netherlands, more specifically in the city of Groningen, where the study area is also located. Since interviews have been held in Dutch, this might have given participants better opportunities to give answers in their own words. Additionally, the researcher is a white male, which might have influenced the feelings respondents experienced during the interviews.

In general, the anonymity of participants is employed through the pseudonymization of data within the data analysis. Additionally, any locations or places within transcripts or other data that could lead to the participant have been censored, and for example, replaced by "LOCATION" in transcripts and quotes. As for confidentiality, any data connected to the research process has been stored on safe digital servers that only the researcher can access.

Study population

Recruitment of participants for the interview process was done through snowball sampling. Several organizations within the city of Groningen were contacted about potentially interested participants. Among the organizations that responded positively or indicated that they distributed the researcher's message were Toegankelijk Groningen, Groningen Danst, and Gehandicapt en Sportclub Groningen. Aside from this, participants were also sought through the researcher's network. Following the recruitment process, ten participants were interviewed. The interviews were held either on-site, at a location that the participant chose, or online when either the participant or the situation called for it. Before the interviews were performed, a consent form was signed by both the researcher and the participant. The consent form for the interviews can be found in Appendix B. Additionally, before the interview, participants were asked specific questions regarding certain characteristics and demographics, such as age, gender, and wheelchair use. The full list of extra questions is shown in Appendix C. Among the participants, the age distribution is diverse, with people from three different generations present in the data. The gender distribution leans slightly to the female majority, but this has not been determined to harm the diversity of the data. Additionally, all three wheelchair types that were considered are present in the data, and although most participants use their wheelchair permanently, there was one participant who used it temporarily. A table with all participants and their characteristics has been shown in Table 1.

Table 1: Characteristics of participants

Participant	Age at time of interview	Gender	Reported Wheelchair type(s)	Wheelchair use (duration)	Reason for use of Vismarkt
1	24	Female	Manual	Permanent (20 years)	Nearby shops
2	72	Male	Mobility scooter	Permanent (6 years)	Market
3	72	Female	Electric	Permanent (40-50 years)	Market
4	Prefer not to say	Female	Manual	Permanent (10-11 years)	Nearby shops
5	75	Male	Manual	Permanent (12 years)	Leisure
6	49	Female	Manual/Electric	Permanent (42/6 years)	Market & nearby shops
7	51	Female	Manual	Temporary (6 months duration, 23 years ago)	Market
8	36	Female	Electric	Permanent (30 years)	Nearby shops
9	75	Male	Mobility scooter	Permanent (10 years)	Market
10	24	Female	Electric	Permanent (8 years)	Nearby shops

Research context

The Vismarkt, literally meaning “fish market” has been functioning as a market area in the city center of Groningen since the 15th century (Marketing Groningen, n.d.). In the beginning, the Vismarkt was a market where fish were sold, hence the name. Today, the Vismarkt offers many other options alongside fish. As of today, the Vismarkt operates on Tuesday, Friday, and Saturday from 09:00 to 17:00, together with the nearby Grote Markt. (Gemeente Groningen, n.d.a).

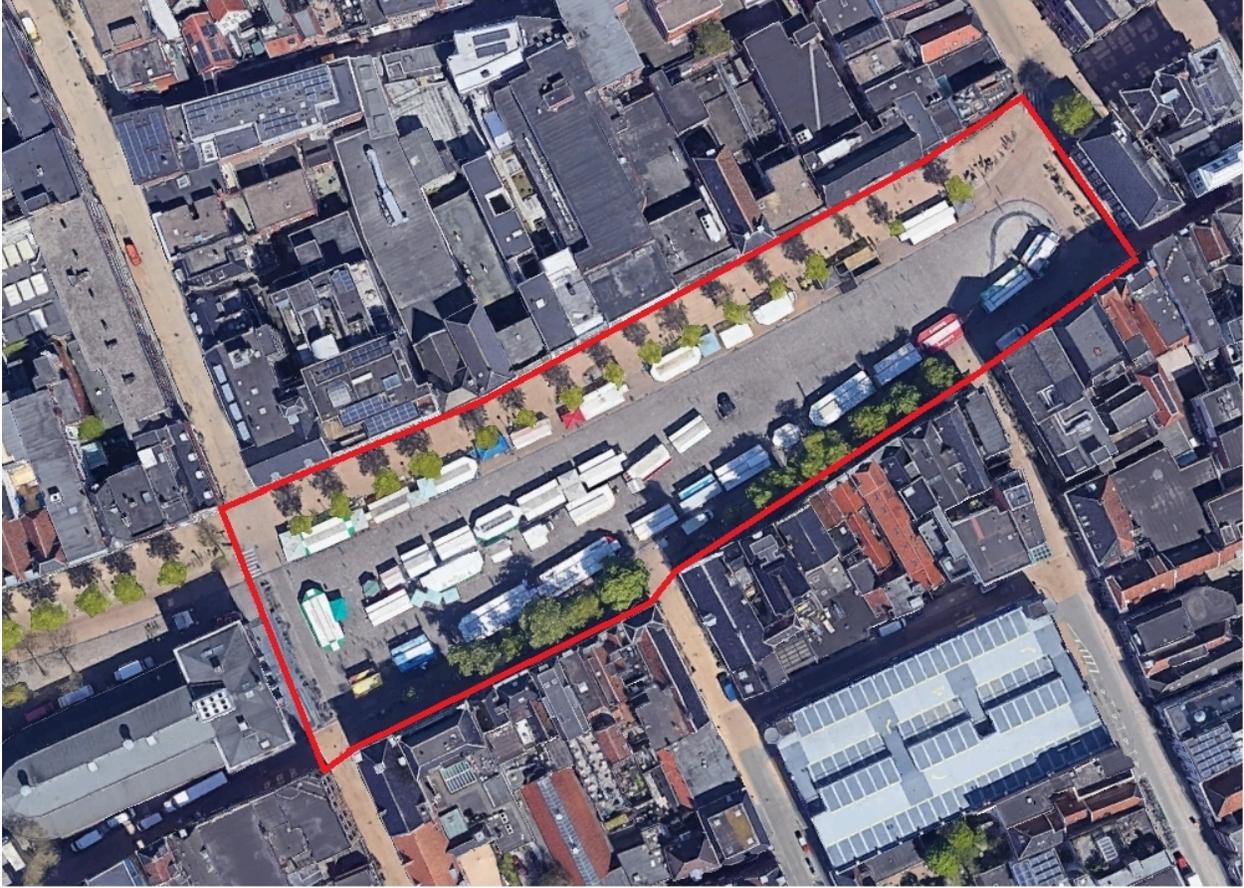


Figure 2: Satellite image, with the Vismarkt outlined in red. Source: Constructed by author

To place the Vismarkt into spatial context, and to give a broad overview of the area, Figure 2 has been established using Google Earth (n.d.).



Figure 3: Vismarkt (outlined in red) as it is located within the city of Groningen. Source: Constructed by author

Shown in Figure 3 is the Vismarkt within the bigger picture, the city center of Groningen plus its surrounding areas. To give some historical context, the shapes of parts of the old fortifications can be seen in the greenery area in the top left of the image. Additionally, the Vismarkt is also situated in between the canals that flow through the city. The Vismarkt is thus in the middle of the city center of Groningen.



Figure 4: Pavement of the Vismarkt market area. Source: Google Maps (n.d.)

Looking at specifics of the Vismarkt area, one of the first and most relevant observations that can be made is the pavement, as can be seen in Figure 4. The market area itself consists of stones and granite cobbles (Gemeente Groningen, 2016). Additionally, it is on a plateau compared to the surrounding street.



Figure 5: Vismarkt street, with sidewalk on the right, and market on the left. Source: Funda (2021)

To compare the surfaces of the market area and the surrounding street and sidewalk, Figure 5 is shown above. As can be seen, the two surfaces vary substantially, but mostly in the sense that the market area is on a plateau demarcated by a curb.

Nearby public area development

Currently, there is work being done on the Grote Markt, a market area to the northeast of the Vismarkt. After the conclusion of bus traffic around the Grote Markt in 2022 (car traffic has been prohibited since 1977), a project has been started to renovate the Grote Markt, primarily and most importantly to make it more attractive to pedestrians (Binnenstad Groningen, n.d.). One of the major aspects that has already been put into place is that parking bikes on or around the Grote Markt is no longer allowed, and special bike parking garages have been constructed (Gemeente Groningen, n.d.b). Additionally, the surface of the pavement would also be adapted, to make it more convenient for pedestrians.

Findings

Perceived mobility in the Vismarkt

Participants perceived wheelchair mobility around the Vismarkt to be insufficient, with multiple factors and characteristics playing a significant role in explaining difficulties and hindrances in moving around the Vismarkt. As is also evident from the data, the general purposes of using the Vismarkt for the participants are visiting the city, and buying products at the market itself and the nearby shops and restaurants. How often participants go to the Vismarkt for these purposes, however, depends on their capabilities and opportunities to move around. Participant 6, who has used both manual and electric wheelchairs for around 50 years, explains her thoughts and motives when considering her experiences going to and moving around the Vismarkt.

“Well, I would like to go more often if it was more accessible. I can not go alone to the Vismarkt anyhow. Looking at the kind of stones that are there, I can not use the wheelchair by myself to get there.”

What Participant 6 says above is that the surface of the Vismarkt prevents her from going there by herself, and since she uses the area for both the market and nearby shops, it shows the accessibility and moveability of the inner market area to be insufficient. Participant 7 also indicated this, emphasizing that the issues were even bigger for the person pushing her than for herself. The above quote also shows that participants' motives and incentives for moving to and around the Vismarkt are strongly influenced by not only the aspects of the market itself but may also be influenced by the surrounding areas. This sentiment was shared among multiple participants, and although not initially targeted within research or interview questions, it was prevalent throughout the data.

As all participants mentioned, the biggest difficulty of moving around the Vismarkt itself is the terrain. As mentioned and shown in the methodology, the terrain is composed of stones and granite cobbles, and as can be seen in Figure 3, these prove difficult to traverse while riding a wheelchair. Participant 8 explains how she has reached the point where she does not even consider crossing the market area anymore.

“I would be less likely to choose to say, well... ‘I will cross diagonally and go over the cobbles to get to the other side’. No, then I would rather choose to go around it and choose comfort.”

What the above quote shows is that the mobility characteristics of the inner market area for Participant 8 have become so difficult that it is a better experience to use the flatter terrain around it, but uses significantly more time. Since Participant 8 mostly used nearby shops in the area, it may seem that the navigability of the inner market area has become so undesirable that it is simply not worth it to try to use it, which may be why Participant 8 predominantly uses nearby shops. While Participant 5 agrees with the sentiment that the cobbles are one of many obstacles that make it undesirable to move around, he does explain the general thought process that could have gone on to keep them there, and his opinion from his perspective.

“From the viewpoint of quality, there are always three aspects that should be taken into account. These are sustainability, user-friendliness, and aesthetic value. The cobbles are very sustainable. Considering aesthetics, you can argue about that. I think they are pretty, but user-friendliness is 0.0 for a wheelchair, so it has no quality.”

In addition to the quote above, Participant 5 mentioned later during the interview that when viewing the three aspects, and considering potential change or development in quality, sustainability, and user-friendliness should be valued considerably more than aesthetic value. This is understandable since better user-friendliness would benefit wheelchair use.

Aside from the characters of the market, and the area itself, the market day factor is also prevalent among the participants.

“There are a lot of obstacles, so you often can not get where you would want to, because there are electricity cables, or that the area is just too packed.”

The quote by Participant 6 indicates that there is a difference in the opportunity to move around during market days, as compared to non-market days. Most participants agreed that the area was less navigable on market days, especially because of the market stalls and everything around it, but also because on market days, the number of people present would be a lot higher.

Another factor in moving around the Vismarkt that participants mentioned is their physical condition. Especially the link between the cobbles that are currently present at the Vismarkt, and the consequences they have on the physical well-being of a wheelchair user, is explained by Participant 1.

“The area where the market is, I find it really awkward, but that is mostly because of the stones that are there. They are very bumpy and you just get thrown around by them. Your body becomes a little stiff... really unpleasant. And then you just become tired, and especially, it costs a lot of energy. You have to watch out to prevent falling out of the wheelchair, because these things are so tough. It is really stressful, like, you notice it in your body, all tense and focused on the stones.”

As Participant 1 elaborates on the physical repercussions wheelchair users experience while moving over the cobbles, this quote not only shows that it is physically challenging to navigate the area, but that it is also dangerous, as the risk of falling out of the wheelchair is relevant enough to be mentioned explicitly. Other respondents did not always mention the same extent of feelings of risk, but most agree that their physical condition plays a role in how they would navigate around the Vismarkt, and the danger of falling over was always present. An important factor that could explain reasons within this context was the characteristics of the wheelchairs. As the participants made use of three different wheelchair types (manual wheelchair, electric wheelchair, and mobility scooter), there were some differences mentioned in how participants would approach certain situations. Participant 10, having used both a manual and electric wheelchair, gives an interesting notion regarding combating uneven surfaces.

“When you are talking about bumps, if there is a small bump, with a manual wheelchair, you can lift yourself over it, or let yourself be helped by someone, while this can not be done with an electric wheelchair.”

The quote by Participant 10 unveils the dilemma that is present between the use of manual and electric wheelchairs, which seems to offer the choice between risking getting stuck with an electric wheelchair and all the consequences this might bring, or using a manual wheelchair, and compromising physical strength by increased effort to push the wheelchair forward yourself. Participant 6 has the same dilemma and adds that when being pushed by an able-bodied person, this person suffers physically as well.

“Yeah, I can not use the electric one [when at the Vismarkt], I use that one by myself, so I can move by myself. The other, the manual wheelchair, I can use, but still it is really difficult, and I have to really watch out that I do not fall out of the wheelchair as the wheels get stuck. And it is really heavy for the person that walks behind me.”

The notion about the able-bodied person suffering by pushing a wheelchair over the cobblestones was also shared by other participants.

Influences of social roles in perceived mobility

Aside from spatial features of the market, social and situational features of both the area and the market were named in the dynamics and difficulties of moving around. As for general impressions of the Vismarkt, a prevalent factor that participants noted was the general amount of people that would be on or near the market, and the busy environment that this creates. For wheelchair users, this causes significant issues, as Participant 6 explains in the following quote:

“As a wheelchair you are low and not well visible in the crowd”

This was further emphasized by other participants, who also mentioned that in some cases it was handy, or even necessary to have an able-bodied person with them while moving around the Vismarkt because they felt they were either not seen or noticed. Participant 4 gives a more extensive view of the feelings that are associated with moving around the busy market while in a wheelchair.

“You cannot just drive someone’s ankles off their shoes. You could, but that is not how you are raised, but you just cannot get through. People just do not see you.”

The fact that the possibility or thought of having to run over people just to be able to move around indicates the perceived powerlessness that someone might experience while using a wheelchair in a crowd of people. This combined with the lower head position compared to surrounding people also seems to amplify this effect. In general, participants indicated that moving in big crowds of people is rather difficult, but there seems to be a divide in perception of what one should aspire to do while in a wheelchair, and when one should accept the situation. Participant 7 exclaimed her attitude during her time using a wheelchair in the following quote.

“I will not let people walk all over me of course. I had my eyes looking straight ahead, so I would warn in time, or you would say ‘hey, look out!’. Always in a friendly or funny manner, I think, not like how it goes today with nasty words, not like that. But it is a fact that people overlook you.”

Participant 5 on the other hand had a contrary view on this matter.

“I do not get bothered by it. In general, people take it into account. I do not get irritated that quickly, it’s okay, everyone is busy. Look, you should not... some things are not accessible for me, like [SPECIFIC MARKET STALL]. If there is a line there, I will avoid it. Busy places like that, wheelchairs have no business being there, and you just have to accept that.”

The difference in opinion between Participant 7 and Participant 5 shows that while the issue may be prevalent, it is up to the person to determine how to deal with specific matters. Additionally, Participant 2 noted how features of the market, and the interaction between his mobility scooter and the surface, impacted himself and the people around him.

“You are riding or you are not. When there is someone in front of you, a child for example, you have to look out very much, because look... if you drive over bumps, you may end up a decimeter further, and sometimes you can not assess how you drive and that there is a child in front of you, and they are not to blame, but you have to look out that you would not hit that child, because you can not anticipate how far you will roll on.”

Following on from the quote above, the aspects of the built environment, the wheelchairs, and social roles seem to be interlinked. Other participants agreed with the sentiment that it is relatively difficult to navigate close to people, especially with a mobility scooter, which Participant 9 also confirmed, stating the desire for a brake mechanism on his mobility scooter.

Use of Vismarkt in the future

Looking at the future use and potential existence of the Vismarkt, the participants were asked both how they would see the concept of the market in the future, and how they would improve the Vismarkt to make it a more navigable and enjoyable space to be. Overall, it was agreed by the participants that the market as a concept works, and that the market aspect itself should continue to exist in the future. However, this also prompted the first complaint which translates into the first improvement a few participants noted. Participant 3 explains it in the following quote.

“The market should stay, but almost all bus lines have been canceled, so people do not come here so easily, from other neighborhoods certainly not anymore, especially people who are less mobile.”

What Participant 3 says here is that people find it increasingly difficult to get to the Vismarkt in the first place, meaning that aside from the troubles experienced while moving on and around the Vismarkt, it is already challenging to get to it. Multiple participants also reported this issue, and Participant 9 even explained that there had been alternative transport modes to use for a short time, but they seemed to have vanished over time.

“And then they had these small buses, which you could transfer to, but they are not there anymore. Then the municipality bought a couple of rickshaws, but you do not see those anymore either. If I did not have a mobility scooter, I would not be able to get to the market.”

It seems that institutions have made an effort to accommodate less mobile people in making reaching the market areas easier, even though the specific measure in the quote above is not prevalent anymore. Accessibility of the market itself has however shown to still be an important factor in the decision to go to the Vismarkt or not for wheelchair users.

As for the potential improvements for the Vismarkt itself, the most reported improvement that participants would like to see is the removal and overhaul of at least parts of the market area itself to make it sufficiently navigable while using a wheelchair. The primary measures for this would be the removal of the current cobbles that are present within the inner market area, and to flatten the entrance of the inner market area, as there is currently a curb around it. Participant 8 gives her idea of what improvements should be considered.

“Say goodbye to the cobbles, but maybe in such a way that there is still a plaza on the Vismarkt, but that it is marked with other kinds of stones that are flat and on the same height as the cobbles, so that you keep the image of the plaza, but in a different way. So make everything flat on the same level, but for example with stones in different colors, so you keep the idea of a plaza, but something that would be comfortable both for walking and riding”

It seems from the quote that the image of the public square holds value in the view of Participant 8, and that this should be kept, but altered to fit a more functional use for both pedestrians and wheelchair users. The idea that the surface of the Vismarkt should be flattened was widely named among the participants as the imperative measure to make the Vismarkt more comfortable to move around. Another idea that was prompted by multiple participants was moving or rearranging parts of the market stalls on market days, as Participant 6 explains in the following quote.

“Like if you would put market stalls more on the road in between [both markets], then you would have a long straight market. I get that that would cause a cycling issue immediately, but well...”

The idea by Participant 6 would make use of the road that is currently in between the Vismarkt and the Grote Markt to connect the two markets and create one long straight-line composition of market stalls. Some participants also proposed to move some market stalls to the Grote Markt to divide the distribution, and therefore alleviate the compact nature of the Vismarkt as it currently is.

To sum up, the most prominent findings that were gained were that participants experienced difficulties with navigating the surface of the inner Vismarkt area, as the cobbles present many bumps and create an uneven surface in general. Considering market days, the increase of people and the presence of market stalls amplified the difficulties that were already experienced. As for social roles, participants explained how they felt less visible when moving in a wheelchair, but the extent to which it was felt and how it was dealt with seemed to differ per person. As for

recommendations for the use of the Vismarkt in the future, mostly the surface of the market area, accessibility of the market area, and distribution of market stalls were mentioned. The implications of the findings will be discussed in the conclusion.

Discussion & Conclusion

This paper had the objective to explore wheelchair users' experiences with mobility in Groningen's Vismarkt area. It has been found that mobility experiences were manifested in both the decision-making to go to the Vismarkt and feelings when at the Vismarkt. The findings have covered different topics when considering mobility experiences for wheelchair users. The findings have, however, exposed various ideas and perspectives that feed into policy recommendations and potential measures to improve the situation for wheelchair users in the future. The general notion regarding mobility on the Vismarkt itself has shown that both the quality and movability of the market area are limiting wheelchair users in their capacity to reach and move around the Vismarkt. Considering social roles, participants identified that it is difficult to move around in busy areas, and considering the position of a wheelchair user, able-bodied people do not always recognize issues experienced by wheelchair users. As for spatial improvements to the Vismarkt in the future, the most important themes that were identified were the removal of the current cobble surface on the market itself, the reinstatement of bus lines or alternative transport modes operating to the nearby Grote Markt, and the potential relocation or redistribution of market stalls on market days.

The findings have suggested that the surface of Vismarkt as it is in its current state prevents wheelchair users from making use of the inner market areas, or in some cases even coming to surrounding areas in the first place. This is in line with Hillman (1994) and carries the notion that a flat surface is imperative for moving comfortably while in a wheelchair. It also holds value within the context of Routhier et al. (2003) that the built environment is an important aspect of wheelchair mobility. Although not explicitly mentioned in the interviews, it would seem that taking into account the current state of the Vismarkt concerning wheelchair mobility, there seems to have been limited knowledge by policy makers about difficulties experienced by wheelchair users while moving at the Vismarkt, confirming findings by Imrie (2000). Furthermore, whether there is a disconnect in interests between policy makers and wheelchair users can not be fully determined, but in the current situation, wheelchair users are limited in navigating the Vismarkt and are currently punished into using a built environment that caters mostly to able-bodied people.

This research emphasizes the importance of a sufficiently navigable built environment to be able to move around a public space. As for measures that could combat this, it is recommended that the cobbles in the inner market area be replaced by a stone type that would make a flat surface across the market. Additionally, it is advised that the curb around the inner market is removed, so that wheelchair users can enter the market area comfortably. When looking at potential stone types to renovate the market area with, it is recommended to take into account the three categories used by Participant 5 (aesthetics, user-friendliness, and sustainability), and to prioritize user-friendliness and sustainability in choosing a new surface type.

The study has also revealed that during market days especially, the Vismarkt experiences crowdedness, which makes it difficult for wheelchair users to navigate. This combined with a reduced view of surroundings creates a feeling of powerlessness, which has led to some wheelchair users stopping to come to the Vismarkt, as they found it not feasible to navigate

around the market comfortably. The findings by Urry (2009) that confidence in mobility is influenced by comparing abilities to others are therefore confirmed since participants have mentioned that the presence of other people has decreased their confidence in moving, and willingness to come to the Vismarkt. Additionally, the risk of falling out of the wheelchair was present in the data, and it was recognized that when requiring a person to push the wheelchair forward, this person suffered a lot from the effort it takes to get the wheelchair around the Vismarkt. This confirms Faber & Van Lierop (2020), as wheelchair users experience a loss of confidence, and increased risk of having an accident, attributed to planning of the built environment. The wheelchair type that was used proved to be relevant, as electric wheelchairs were seen as less capable to combat the uneven surfaces, and especially the cobbles. This confirms the findings of Medola et al. (2014) that a wheelchair user's mobility performance is affected by certain wheelchair features and setups. The findings by Korotchenko & Clarke (2016), where wheelchair use was felt as threatening by users, which in some cases resulted in bodily deterioration, can not be confirmed. While physical condition played a role in moving around the Vismarkt, it can not be stated through this research that it plays an inherent role in the general mobility-related wheelchair use, as participants with powered wheelchairs and mobility scooters made no explicit comments on their physical condition deteriorating caused by using their wheelchair.

The final aspect this research has uncovered is the lack of accessibility participants have experienced going to the Vismarkt and its surrounding areas. This also played a role in deciding whether to go to the Vismarkt or not, as some participants indicated they had almost not been able to go after public transport stopped servicing the Grote Markt. This confirms the findings by Labbé et al. (2020) that accessibility plays a role in deciding whether to go or not. This research also confirms Stock (2023), as it confirms that people who need alternative transport modes to get to the Vismarkt have not been heard, as alternative transport modes had been present at the Vismarkt, but are not there anymore, while they are still deemed desired or even necessary by participants. This means that Jackson (2019), who found that input for local planning development from people with disabilities is hardly sought, can be confirmed since there were alternative transport modes to get to the Vismarkt in the past. However, these ceased without seeking input for a solution to the decreased accessibility that it caused. This also relates to the motility concept by Flamm & Kaufmann (2006), and specifically to the access component, as the cessation of alternative transport modes has decreased the availability of tools for mobility at the Vismarkt itself. Since there have been on-demand alternative transport modes, such as small buses or rickshaws in the past, it is advised that these transport modes are reinstated again to accommodate the transport needs of wheelchair users who rely on public transport systems to get to the Vismarkt.

This research has both strengths and limitations. The participants that were interviewed are diverse in age, gender, and wheelchair use. One aspect that proved difficult initially was finding enough suitable participants. Initially, there was rather limited response from relevant groups and institutions that were contacted, but as enough time progressed, more and more participants reached out, and eventually, a sufficient amount was reached. Throughout the recruitment process, some participants indicated they were not physically fit at the time to perform an interview.

Future research could benefit from looking specifically into certain aspects, such as a different study area, but also elements such as an increased focus on wheelchair characteristics, and what specific parts of a wheelchair define the ability to move around in difficult areas. Another aspect that further research could be performed on is the involvement of wheelchair users in local planning organizations, to get a better picture of to what extent their interests are being heard. Additionally, interviews could be performed while moving around the study area itself, to try to gain specific insights into the area itself and the participants' views and memories.

In conclusion, this research argues that in the current situation, the Vismarkt is not of a sufficient standard to accommodate wheelchair transport. Experiences of wheelchair users were taken into account and showed multiple factors are limiting the movability of the market and its surrounding areas, but also the capacity or possibility to access them. By theoretically combining immobility and motility, this research has shown that there is an array of aspects that influence the mobility experiences of wheelchair users in public spaces and specifically within the study area.

As for policy implications that arise from this research, the most important measure that has been identified is the removal of the cobbles on the surface of the current market. The advice is to create a surface that is as flat as possible, to ensure that wheelchairs can move comfortably and can not get stuck. Looking at existing policy as an example, the renovations on the Grote Markt serve well here, since one of the purposes is to flatten the street surface, making it more comfortable for pedestrians, and wheelchairs especially (Binnenstad Groningen, n.d.). As for possible policy recommendations considering alleviating the human aspect of crowdedness on the market, it could be considered to redistribute certain market stalls, potentially to the Grote Markt, to try to spread the crowd more evenly over a bigger area. As for accessibility of the Vismarkt and the surrounding areas, it is advised that small buses or alternative transport modes are either reinstated, or newly provided to bring wheelchair users, and other people requiring it, from existing bus stations to the Vismarkt and its surrounding areas. The measures that have been mentioned should improve the situation for wheelchair users, and create a better space for everyone.

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Appendix A: Interview guide

Introductie

(1) Heet de geïnterviewde welkom

- Hoe gaat het met je?
- Introduceer jezelf en het onderzoek (Naam, Studie, Masteronderzoek)
- Tekenen van de toestemmingsverklaring (Al gedaan/nog te doen)

Kernvragen

- Hoe vaak ga je naar de Vismarkt?
 - Waar ga je er voor naartoe?
 - Waarom ga je zo vaak als je gaat?
- Wat voor indrukken krijg je van de Vismarkt als je er verplaatst?
- Wat voor invloed hebben marktkramen op hoe je je verplaatst?
- Zijn er nog andere specifieke problemen die je hebt ervaren terwijl je je verplaatste?
 - Marktdagen
 - Vlakke deel vs. klinkers
- In hoeverre spelen eigenschappen van je rolstoel een rol bij het verplaatsen?
 - Verbetering?
- Hoe heb je je rolstoelgebruik ervaren ten opzichte van je lichamelijke conditie?
 - Zekerheid, vertrouwen
- Hoe voel je de aanwezigheid van andere mensen tijdens het bewegen in een rolstoel?
 - Gevoelens, inhouden ervan, uitspreken

(SAMENVATTING VAN WERKZAAMHEDEN OP GROTE MARKT)

- **Bestrating aantrekkelijker voor voetgangers**
- **Ondergrondse fietsenstallingen, geen fietsen meer parkeren op of rond markt**
- Wist je zelf al iets af van de renovatie van de Grote Markt die momenteel aan de gang is?
 - Mening, toekomstbeeld
- Hoe zie je het gebruik van de Vismarkt in de toekomst?
 - Zelf, maar ook algemeen
- Wat voor maatregelen zou jij nemen om de Vismarkt voor jou beter te maken?

Afsluiting

- Zijn er nog dingen die je kwijt wil, of aan mij wil vragen?
- Bedankt voor de deelname aan het onderzoek!

Appendix B: Toestemmingsverklaring (Empty Consent Form)

Toestemmingsverklaring

Toestemmingsverklaring voor onderzoek: "Mobility experiences of wheelchair users in Groningen's Vismarkt"

Ik begrijp het onderzoek volledig. Ik heb genoeg tijd gehad om te beslissen of ik mee wil doen aan het onderzoek. Ik heb de kans gekregen om vragen te stellen en mijn vragen zijn duidelijk beantwoord. Ik begrijp welke gegevens worden verzameld in dit onderzoek.

Ik begrijp dat alle persoonlijke gegevens niet te herleiden zijn tot mij als deelnemer. Verder begrijp ik dat de data geanonimiseerd wordt.

Ik weet dat mijn deelname vrijwillig is. Ik begrijp dat ik mij terug kan trekken uit het onderzoek op elk moment, zonder een reden te hoeven geven.

Ik geef toestemming om de interviewgegevens te verwerken en gebruiken voor educatieve doeleinden.

Ik verklaar hierbij dat ik mee wil doen aan dit onderzoek.

Naam en Handtekening van deelnemer:

Datum:

Verklaring Onderzoeker

Ik verklaar dat ik de deelnemer volledig geïnformeerd heb

Als er meer informatie naar voren komt tijdens het onderzoek die invloed heeft op de toestemmingsverklaring van de deelnemer, breng ik die tijdig op de hoogte.

Naam en Handtekening van onderzoeker:

Datum:

Appendix C: Extra questions regarding participant demographics

Openingsvragen

- Wat is je leeftijd?
- Hoe identificeer je jezelf qua geslacht?
- Wat voor rolstoel gebruik je of heb je gebruikt?
- Gebruik je je rolstoel tijdelijk of permanent?
 - Hoe lang gebruik je je rolstoel al?

Appendix D: Some code groups that were relevant within analysis

- Frequency of going
- Surface and Obstacles
- Wheelchair type
- Attitudes self
- Attitudes others
- Social Interaction
- Recommendations