

**Identifying Barriers: Exploring Determinants of Green Climate Shelter
Access for Women and Queer Individuals during Extreme Heat
Periods in Groningen**

Qualitative research in the city of Groningen

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Abstract

This thesis investigates the barriers queer individuals and women face in accessing green climate shelters and specifically, focuses on urban parks in the Dutch city of Groningen during periods of heat stress. The central research question this thesis investigates is: What are the determinants of access to green spaces as climate shelters during climate extremes for women and queer individuals in Groningen? The research question was investigated using qualitative methodology, open-ended survey questions were distributed as a means to collect data, and analysed by coding themes in ATLAS.ti. Important determinants of going to a park during heat extremes this research has observed are the distance of women and queer individuals' homes or places of study to the park, good sanitary facilities, crowdedness, and feeling of safety. One important conclusion is that these barriers are identified for a small group of queer individuals and women living in Groningen, however, awareness is not the only factor necessary to achieve climate justice queer people should be more recognised in climate change procedures and policies. A suggestion for further research is to research this topic on a larger scale and also factor in the policies existing for the parks and how to make them more gender and LGBTQ+-inclusive.

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1 Introduction

Extreme heat is more prevalent in the contemporary world as a consequence of increasing climate change. Greenhouse gas emissions, in combination with the changes in land use, are causes of the extreme weather that is experienced by many communities across the world (Ebi et al., 2021). Temperatures in the Netherlands have been increasing steadily over the last century. In 2019, many heat records have been broken that were standing since the start of the measurements in 1906 (Compendium voor de Leefomgeving, 2023). Therefore, climate justice research is increasingly important. Heat stress can seriously affect vulnerable individuals, potentially leading to sickness and even casualties. Climate change is responsible for one-third of the heat-related deaths in the Netherlands. This means that nearly 250 people die annually due to heat caused by climate change (Kennisportaal Klimaatadaptatie, 2021). According to Goldsmith, Raditz and Méndez (2022), LGBTQIA+ communities are often more likely to be living in poverty. This comes from a historical process of violence and discrimination against the queer community. During climate extremes, these social disparities can be exacerbated (Goldsmith, Raditz & Méndez, 2022).

The importance of easily accessible green space goes beyond its role as a climate shelter. Urban green space plays an important role in improving public health. The benefits one can access by going to public parks are, for example, increasing physical activity, furthermore, it increases social cohesion in communities (Fors et al., 2021). Another benefit of visiting green spaces in urban areas is that it can improve mental health as exposure to outdoor environments can help recover individuals' stress levels (Liu et al., 2020). Therefore, it is societally relevant to study green climate shelters concerning accessibility and barriers limiting queer individuals and women from the benefits of going outside in public parks.

According to Davis and Edge (2022), access to greenspace and climate shelters during climate extremes is not equitable for women and queer individuals. Often there is acknowledgement of diverse access needs in a general way. However, policymakers often lack specific plans to reduce physical and spatial barriers for queer individuals and women. The perspectives of queer people are not always heard and documents mostly use binary language in policy (Davis & Edge, 2022). This means that they only discern between men and women, other genders and factors like sexuality are not accounted for.

Studies suggest that climate change impacts some communities and marginalised groups more than others. (Terry, 2009; Dalton, 2023). These authors found that sexuality and gender play an

important role in achieving climate justice, as these are not yet factors that are often considered. It is important to explore the subject of gender and sexuality in this research. Policymakers often see climate change as an event that affects the population as a whole, they see climate change as something that affects everyone equally. However, this is not the case, as many vulnerable groups and marginalised communities are often more at risk when experiencing extreme weather (Dalton, 2023). Furthermore, Dalton (2023), states that queer minorities are rarely considered in policy-making for climate adaptation plans. Hence, it is necessary to conduct a thorough investigation of this issue in the present research.

1.2 Research Problem

The research problem in this thesis is to explore what the barriers are that queer people and women experience, limiting them from accessing green spaces. More specifically, barriers limiting access to urban parks during extreme heat in Groningen. The main research question is: What are the determinants of access to green spaces as climate shelters, during climate extremes for women and queer individuals in Groningen? This research hypothesises that factors limiting access to climate shelters for queer people and women are: catcalling, previous negative experiences in the park relating to racism or homophobia, perceived safety, and distance from their home to the park.

The sub-questions necessary to answer the main research questions are:

- 1) How do women and queer people in Groningen use urban green spaces differently in times of climate extremes?
 - a) What are the determinants for the use of urban green space?
 - b) How do queer people perceive and frame urban green spaces?
- 2) Which barriers can be identified for women and queer people for climate shelters?
 - a) What is the role of perceived safety in using urban green space?
 - b) How does sexuality influence the feeling of safety?

The structure of the paper will be discussed in this paragraph. The already existing theories of previous research important for this thesis will be discussed in the theoretical framework. Then, the research design will be explained and how the data has been analysed. After that, the results

of the research will be presented. Lastly, a conclusion will be provided that will discuss the main findings of the study. Besides, the conclusion will discuss the limitations of the research. In addition, suggestions for future research will also be provided in the conclusion.

2 Theoretical framework

2.1 Climate Justice in Urban Green Space

Climate change is disproportionately affecting marginalised groups. The extreme weather conditions resulting from climate change are an issue of justice, for the reason that marginalised groups face disproportionate burdens. These effects are exacerbating the already existing social, economic and health inequities marginalised groups experience (Trott et al., 2023).

In their article, Bulkeley, Edward and Fuller (2014) explain that looking into climate justice with an urban lens is important, as it moves past a more simple assumption of shared responsibility of any one urban community responding to climate change. This urban lens can be used to examine how the practice and politics of climate change action affect justice. Figure 1, shows the most important facets of climate justice in a three-dimensional pyramid. These factors are the rights, procedures, responsibilities, distributions and recognition of climate justice (Bulkeley, Edwards and Fuller, 2014).

Climate Justice Pyramid

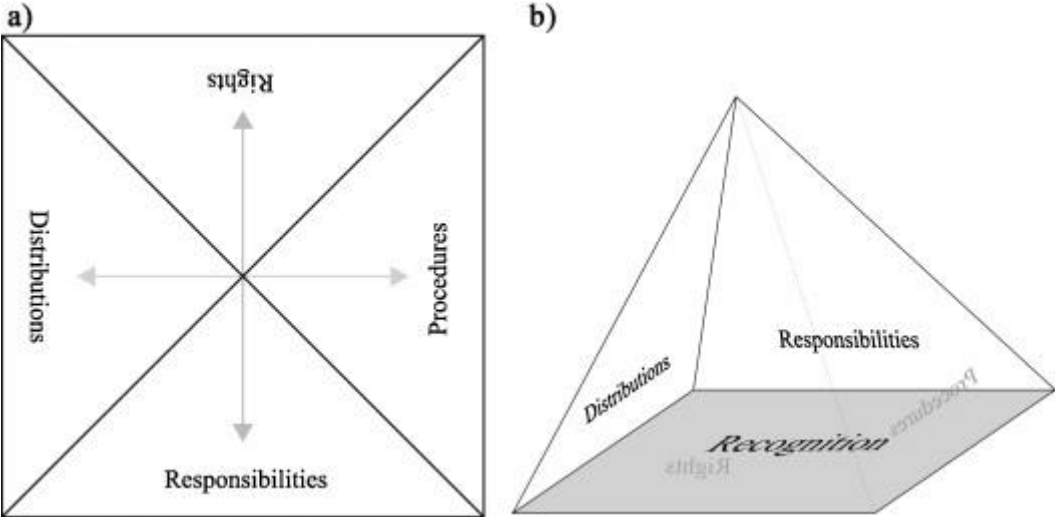


Figure 1 The three-dimensional pyramid of climate justice (Bulkeley, Edwards and Fuller, 2014).

2.1.1 Climate Justice Pyramid in Practice

Only shared responsibility is not enough to combat climate change (Bulkeley, Edwards and Fuller, 2014). Awareness of climate justice in policymaking is important, as without recognition there is no problem to be aware of. The rights and responsibilities should not be a bottom-up approach as climate change is a large-scale international problem (Porter et al., 2020). Gender-blind climate change policy is occurring less frequently, however, there is still a need for more awareness. Especially, as challenges for equity in gender and sexuality in climate adaptation planning still occur (Gonda, 2019).

Inequality is prevalent in climate change, as mentioned in the previous paragraphs, this also includes inequality in gender and sexuality. According to Pearse (2017), women are not equally represented in governing agencies. Consequently, women can be negatively affected by climate change policies as they do not have the same responsibilities and recognition in the procedures to achieve climate justice.

2.2 Climate Shelters and Urban Green Space

Climate shelters are refuges for people to find shelter in extreme weather conditions. These extreme weather conditions include, for example, extreme heat and heavy rainfall. (Amorim-Maia et al., 2023). Climate shelters are mainly important for vulnerable groups during climate extremes, as these individuals are more often exposed to the dangers of climate change. Many people who are seen as part of marginalised communities are experiencing difficulties in trying to visit climate shelters during heat extremes (Sampson et al., 2013). Furthermore, Sampson et al. (2013) explain in their article that marginalised groups are more susceptible to heat-related morbidity and fatality. According to Cucca and Thaler (2023), green and blue urban spaces diminish the negative impacts of climate change. However, climate justice in the development of new green spaces is often still overlooked. Creating more green climate shelters could displace vulnerable communities, as it may lead to gentrification. The solution of creating more climate shelters does not improve accessibility nor address the issue of climate justice (Cucca, Friesenecker and Thaler, 2023). Looking into the previous statement, climate justice is a difficult and multi-faceted problem, a seemingly simple solution as creating more and better parks does not necessarily lead to more climate justice.

2.3 Sexuality, Gender and Perceptions

2.3.2 Important Definitions of Gender and Sexuality

To comprehend gender inequality, it is crucial to have a clear and concise understanding of what gender means. Usually, in quantitative studies, gender is used as a binary variable. Often it is not explained how a researcher perceives gender and what the definition is (Lindqvist, Sendén and Renström, 2021). Vijlbrief, Saharso, and Ghorashi (2020) state in their article that gender, sexuality and sex are three different concepts that cannot be used interchangeably. This research uses gender and not sex. Tompkins (2014) states in their article that, sex is a physical characteristic, and is assigned at birth. Gender is a feeling someone has and behaviour someone exercises in a social context, this is often a sensitive and personal feeling someone has. When the assigned sex at birth matches the gender a person perceives themselves as they are considered cisgender. If sex does not match the gender of a person it is often referred to as trans*. Trans* is used in this thesis with the asterisk to signal greater inclusivity than the term transgender or transsexual (Tompkins, 2014). Transsexual is an outdated term and should not be used in research as it has a negative connotation (Vincente, 2021). Another scenario is that someone does not feel or act like a man or a woman. One of the most common labels for this phenomenon is non-binary (Yeadon-Lee, 2016). Sexuality has to do with a sexual or romantic attraction that a person can experience (Vijlbrief, Saharso and Ghorashi, 2020). The term queer is described by Levy and Johnson (2012) as a liberation of fixed genders and sexualities. In this research, queer will be used as an umbrella term for people who identify as not heteronormative or cisgender.

2.3.3 Perceived Safety as Barrier to Climate Shelters

Perceived safety could be a barrier to the use of public parks. Fear of crime is an important factor in the perceived safety of space. This phenomenon is caused by a fear of possibly becoming a victim (Pérez-Tejera et al., 2022). According to Navarrete-Hernandez, Vetro and Concha (2021), when concerns about personal safety are present, this fear could limit a person's freedom to move in public space. It might even lead to terminating travelling to places that one perceives as dangerous.

There is a significant difference between genders in the perception of safety, as stated by Polko and Kimic (2022). The authors describe how women often have a lesser sense of security in public spaces, which could have the consequence of women avoiding climate shelters as climate

shelters are in public spaces. Women are often concerned about personal safety when going outside in public (Navarrete-Hernandez, Vetro & Concha, 2021).

2.4 Conceptual Model

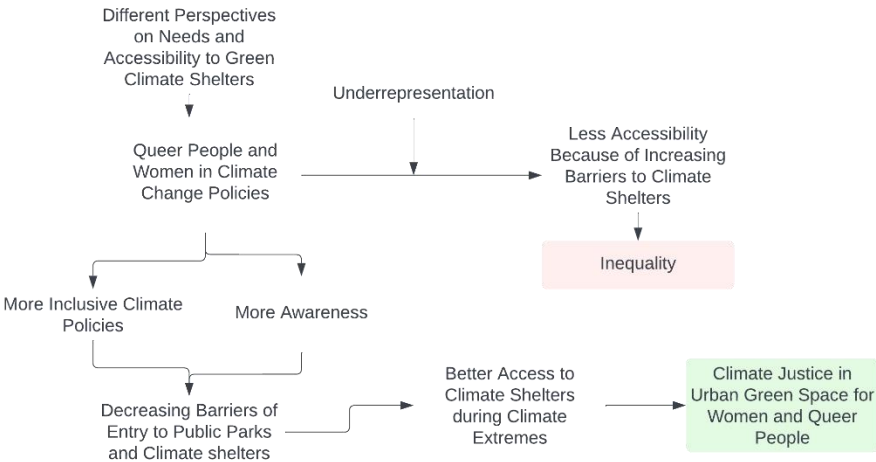


Figure 2 Conceptual Model

This conceptual model illustrates how climate justice is an important concept in this thesis. Women and queer people in climate change policies are often underrepresented. Queer people and women have different needs for accessing climate shelters and a different perspective on safety in public parks. As women are underrepresented in climate change policy, barriers to entry will increase or not improve. However, if climate policies will be more inclusive and have more awareness of the different perspectives women and queer folks have, barriers to entry to public parks as climate shelters could decrease. This could lead to better access during climate extremes and help in achieving equality and more climate justice.

3 Methodology

3.1 Research Method

As the main research question is what are the determinants of access to green spaces as climate shelters during climate extremes for women and queer individuals in Groningen? The choice of data collected was qualitative data. To acquire data, surveys have been distributed by purposive and snowball sampling methods to the participants. Surveys were distributed in week

45 of 2023 by sending the link of the survey on WhatsApp targeting women and queer individuals. These people sent the survey to people in their social circle that they knew would be of the target group and willing to help out with this research. The target group was queer people and women from the age group of 18 to 34 living in or nearby Groningen. This research hypothesised that catcalling, previous negative experiences in the park relating to racism or homophobia, perceived safety, and distance from their home to the park were factors limiting people from accessing climate shelters. To make some comparisons with heterosexual men, the surveys have also been targeted at some possible participants of this group.

Qualitative surveys have been chosen as the main data collection method for this research. The questions in the survey were primarily open-ended. Participants were asked about their perceptions and experiences of park use and their tactics for dealing with extreme temperatures. The survey had 33 respondents. The survey questions are listed in Appendix A.

3.2 Data Analysis

The data has been analysed using a thematic approach. The codes developed to analyse the data are deductive thematic codes. The deductive codes created for this research are illustrated in Figure 3. The first step of analysing the data was to organise the data to attain a better overview. This has been done by creating two separate data files. The answers have been split based on sexuality and gender. The groups created were: heterosexual men and everyone that answered that they were a woman, genderqueer, trans* or not heterosexual. The split has been made between these two groups as the aim of this study is to focus on queer individuals and women. The open-answer questions of the survey have been transferred to ATLAS.ti. This program was used to code the data thematically. In ATLAS.ti the data was put in per question to keep the data manageable. Once the data was put in, the coding process continued. The deductive codes were mainly used as code groups, to keep a more organised coding system. Inductive codes were created during the coding process. A list of all codes can be found in Appendix B.

The survey questions were more detailed than the research questions, so the data was coded per survey question. The research questions were more general. Multiple survey questions had to be analysed to answer one research question. To answer the research questions, the codes and the quotes that have been highlighted in ATLAS.ti are used. Quotes of the participants' statements highlighting the important findings are published in the results section. Some of the

participants answered the survey questions in Dutch. When a quote is translated it is mentioned between brackets behind the quote itself.

Some findings were unexpected, consequently, these concepts were not mentioned in the theoretical framework. Therefore, some academic sources are used in the result section to further elaborate on these concepts, as clarity and integrity are important in qualitative studies (O’Sullivan & Jefferson, 2020).

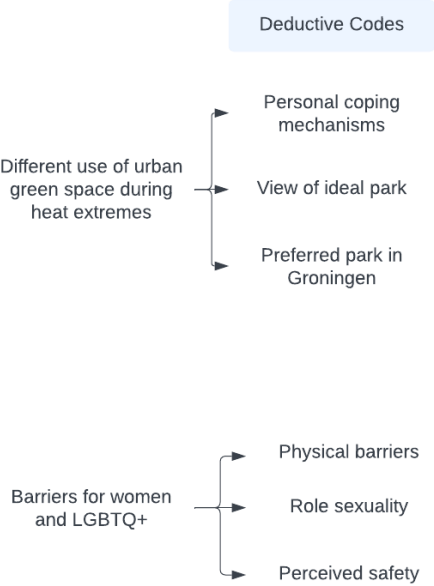


Figure 3 Code Themes for Open Question Analysis

The next step was to make some graphs using the ordinal data that had been collected. These graphs were made using Excel. In Excel, formulas were used to count the ordinal data variables, these counts were then later used to create percentages of respondents per group. The formula to count the variables per question was: =COUNTIF(range; criteria). The colours of the graphs were purposefully edited to show if an occurrence is perceived as positive or negative in this research, concerning the research questions and hypothesis. This has been implemented by illustrating a colour gradient, with green illustrating a positive view, to red illustrating a negative view.

3.3 Ethics

In this research, ethics are important to discuss. Some of the data collected is privacy-sensitive information—especially the data about gender, sexuality and sex. Furthermore, data is collected on personal experiences in public spaces, and negative experiences in parks of people they have experienced in the past. This is all sensitive information that has been kept completely anonymous, no information could link back to the person that participated in the survey.

The data has been stored on a USB-C drive as a backup and has also been stored on my personal computer. All information will be deleted after this research has finished. The data is not stored online to prevent data leaks.

4 Results and Discussion

4.1 The Different Uses of Public Green Space

4.1.1 Frequency of Park Visits During Climate Extremes

Out of the 33 respondents, 21 identified as queer or a woman. The main focus of this result section will be on the 21 respondents who identify differently than a heterosexual man. The first sub-question in this thesis is how do women and queer people in Groningen use urban green spaces differently in times of climate extremes? To help depict the findings of the research Figure 4 was created. Figure 4 shows a difference in behaviour between the two groups during climate extremes. The second group of heterosexual men stated more often than the other group that they would never go out to a public green space to escape the heat. This is a surprising find, as this research hypothesises that heterosexual men would be more likely to go to public spaces as they have a lower chance of being intimidated than queer individuals or women. Something else worth mentioning is that of the group women and LGBT, not one of the participants responded that they always use the park to escape the heat.

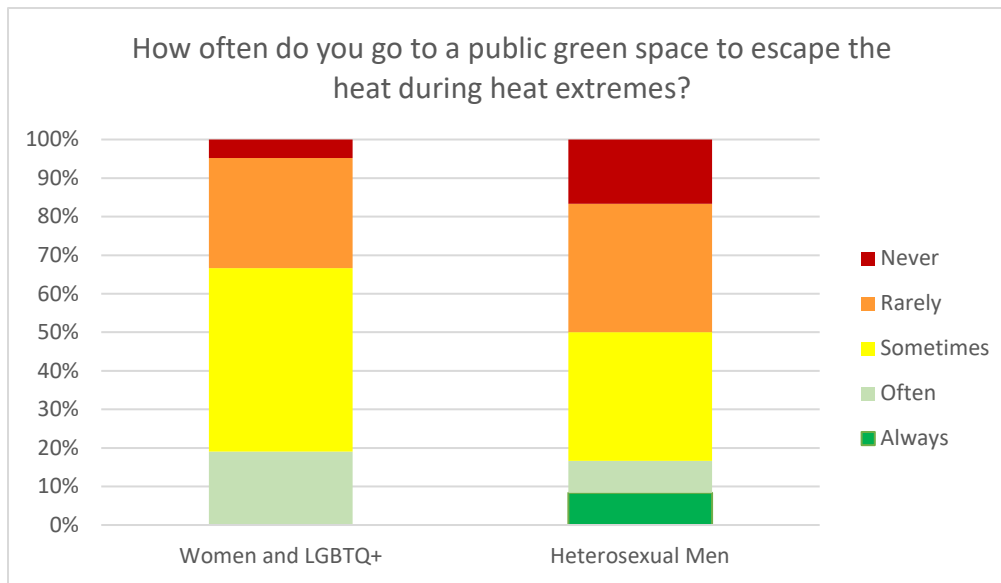


Figure 4 Frequency of Park Use During Heat Extremes

4.1.2 Determinants for Visiting Climate Shelters During Heat Extremes

During events of extreme heat or heatwaves, how often did you consider it too hot to stay inside your home?

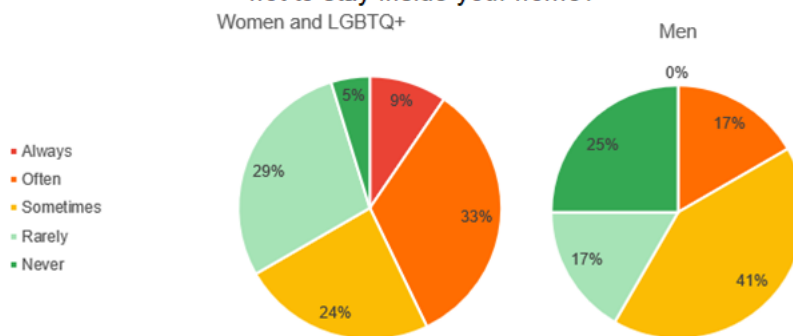


Figure 5 Frequency Experiencing Heat Stress at Home

Women and queer people more often indicated that they always or often feel as if it was too hot to stay inside their homes compared to men. As seen in Figure 5, this might be one factor that determines if a person would want to go out and find shelter for climate extremes.

4.1.3 Perceptions of Green Space

Preferred park use is according to women and queer individuals often to socialize, relax and escape the heat. With socialising being answered most frequently, with 15 out of 21 times.

Queer people and women often defined their ideal park or green space as a place of leisure, with many benches and places to sit and rest. This is often in combination with the code cooling down, as many queer people and women want to sit on a bench in the shadow to escape the heat. There is also a need for places to swim and cool down. Nature was the most important factor in this analysis and was implemented for this question 22 times. In Figure 6 the frequency of codes is shown in a bar chart, showing the most important factors the respondents replied with to the question: What does your ideal park or green space look like?

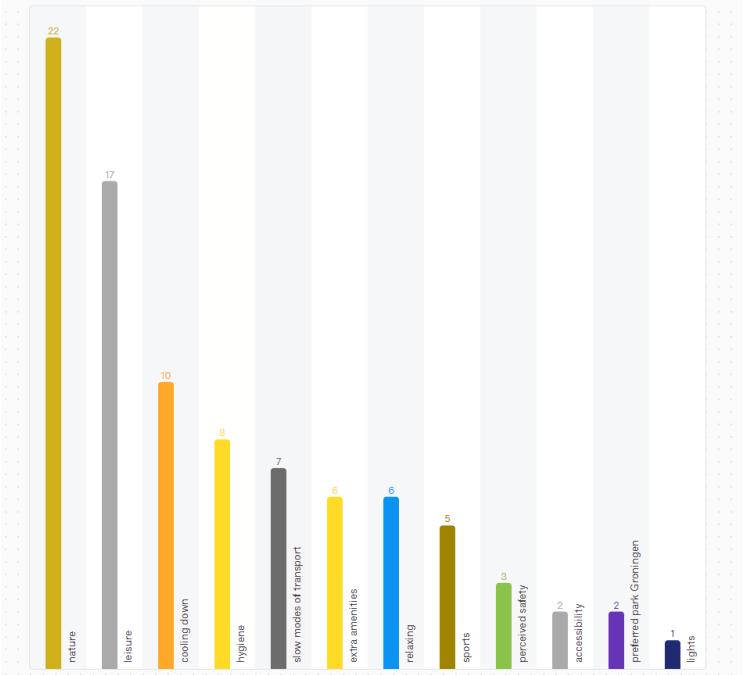


Figure 6 Frequency Codes Ideal Park

“Lots of trees so there is shadow, some places to get drinking water, more light so it is safe in the dark”

The quote above shows an interest in cooling down by using nature and amenities for drinking water. The respondent also states that lights for when it turns dark are important to feel more safe.

“A lot of space and greenery. Water-like ponds are always nice and I think places to sit and accommodations like bathrooms or a cafe are a must”

This next quote is highlighted as it again shows the combination of nature and spots to relax and cool down during heat extremes. Furthermore, it stresses the importance of hygiene, as

bathrooms are described as necessary in their ideal park. Bathrooms are a topic that came up often in these responses. Many respondents described the existing bathrooms in their area as unhygienic and places they would rather avoid.

4.1.4 Preferred Parks in Groningen

Noorderplantsoen is the most popular park in Groningen under the respondents this is in both respondent groups. This has mostly to do with the accessibility of the park. Many respondents stated that it is near their university or their home. Noorderplantsoen is according to the participants cosy, beautiful and lovely to walk in. The shadows created by trees and the view of water inside this park are also factors that are important to the participants.

“Noorderplantsoen, because for me it is the easiest to access. I like the atmosphere, the decent amount of benches to chill and relax on, and the people-watching I can do while walking there. I also really like to see the ducks.”

“Noorderplantsoen, nice vibe and lots of shadow and greenery. Also, close to the city centre and friends.”

In second place is Stadspark, respondents mentioned Stadspark as their preferred park because it is often less crowded than Noorderplantsoen. Most people who chose Stadspark as their preferred park stated that it was close to their home, making it more accessible. Another bonus for Stadspark is that there are often events, which makes it a lively park.

“Stadspark is my preferred park as it is beautiful, big and near my house. It is large with a lot to do” (quote translated from Dutch)

4.2 Barriers of Entry to Green Climate Shelters

4.2.1 Sanitation Facilities

A few barriers have already been identified by looking into the description of the ideal park of the respondents. Bad hygiene of sanitary facilities in parks is one factor that is seen as a barrier to entry to climate shelters. This is an interesting find as it was not in the hypothesis and this is not a factor that was found in the literature research stage of this thesis. According to Colliver and Duffus (2022), for queer people, accessibility to toilets and especially gender-neutral toilets

is important for inclusive public space. These authors state that especially trans* people experience risks of violence, hostility and prejudice as a result of gendered toilets.

4.2.2 Barriers Identified by Participants

One of the questions asked in the survey was: which barriers are stopping you from going to a park? An interesting result of this question is that it is close to the hypothesis of this research. The research hypothesised negative experiences in the park relating to racism or homophobia, perceived safety, and distance from their home to the park were factors limiting people from accessing climate shelters.

Frequent answers to this question given by queer people and women were not being able to go once it gets dark outside. Parks feel unsafe at night and some even described them as dangerous.

“One of the reasons park visits are difficult for me is that I have to use the bathroom often, and these are many times not clean. As I cannot pee standing up it is difficult. During the night I would never visit a park on foot, it feels unsafe as it is dark and there are often men smoking on benches or groups of men in the park. Another reason I would not use the park is when I do not have friends with me, a park is for me a place to socialize and I want to do that with friends and not with strangers.”

This quote summarised many barriers mentioned in the responses. This respondent further mentions the sanitary issues of parks, which are described in the previous paragraph. It also stretches the importance of feeling safe in a public setting. Groups of men can be seen as intimidating in public spaces, especially at night. Perceived safety will be further explained in the next paragraph. Something interesting to mention is that a few men in this research also reported that they were avoiding parks during nighttime as they felt less safe. Though significantly fewer men compared to the group of women and queer individuals.

Another barrier LGBTQ+ people and women perceive is crowdedness, this translates to parks being too noisy or no comfortable places to sit. The responses were that there are not enough benches in the shadow to comfortably seek refuge for heat. Sitting on the grass is one solution mentioned, however, it is uncomfortable to sit on the ground for a longer period.

One person also mentioned a negative experience in the past with homophobia as a barrier to entry into climate shelters. This fits the hypothesis that states that negative previous experiences

with homophobia could be a barrier to entry into climate shelters. As stated in the quote below this paragraph.

“At night I feel less safe because the park is difficult to access for police and there is little lighting. I’ve also had experiences of homophobia in the Noorderplantsoen before at night.

The distance to the Stadspark also limits me from visiting it often.”

Frequently mentioned as a barrier is the accessibility of the parks. Participants responded that parks are too far for them to visit. According to Schindler, le Texier, and Caruso (2022), park users are willing to travel up to 1.4 to 1.9 kilometres. Climate shelters should be easily accessible for people to go to during climate extremes as it could lead to increasing vulnerabilities in marginalised groups, as mentioned before in the theoretical framework. (Amorim-Maia et al., 2023). As the results show that women and queer individuals indicated having trouble accessing green climate shelters, it might be possible that this is an example of how marginalised people are more vulnerable during climate extremes.

The last factor limiting access to climate shelters that will be discussed in this paragraph is a social barrier. The results of the survey show that public parks are not only used as climate shelters. Besides being a shelter, parks are used by the participants for socializing and people coming together and meeting outside. Some participants stated that they feel hindered by their limited social connections to visit climate shelters. One person indicated that they did not go to public green spaces as often as they would want because they did not have someone to join them.

4.2.3 Role of Sexuality and Gender on Perceived Safety

In the previous paragraph, the role of perceived safety as a barrier to entry to climate shelters has briefly been mentioned. This paragraph will discuss this issue more thoroughly.

Out of the 21 respondents that are queer or a woman 11 people answered that they have felt or feel limited going out into public space because of their sexuality or gender, this is illustrated by figure 7. Compared to heterosexual men this is a large difference as in this research not one of the respondents identifying as heterosexual men indicated that they ever felt limited going out because of the factor of gender or sexuality. This result corresponds with the theoretical framework. In the theoretical framework is stated that women are often more concerned about personal safety compared to men, this is also evident in the results of this analysis.

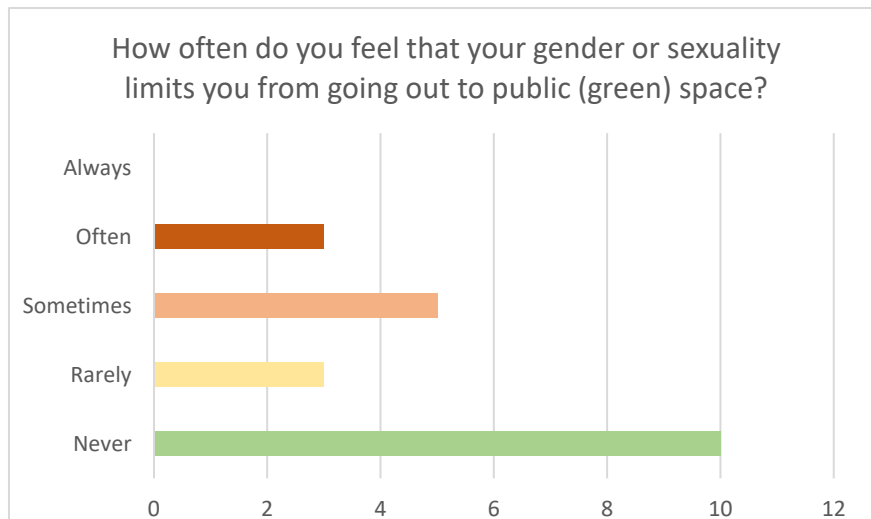


Figure 7 Frequency of Feeling Limited by Sexuality or Gender Going Out in Public Space

Reasons given for not going out to public spaces and climate shelters because of gender or sexuality are described in this section. Gender is an important factor in this behaviour. Some of the women responded that they felt unsafe. Fear of being attacked or harassed in public is one of the reasons described in the results. Women describe themselves as less resilient than men and that they never feel 100 % safe in public spaces. One respondent described that going out during heat extremes is difficult as they are more prone to being catcalled or harassed, as people often wear fewer clothes during warm temperatures. Trans* people in this research also expressed a fear that they could be victim of a hate crime in a park. According to these results, it is evident that gender does play a role in accessing green climate shelters.

“As a woman it is relatively scary to go into public alone, as sadly scary men exist that abuse the situation. I feel that this is mostly in the evening, and during the day I do not experience this myself. In the summer it is worse because I am wearing shorter clothes and some people find it necessary to catcall you and make inappropriate comments.” (translated from Dutch)

Sexuality also has a role in perceived safety and climate shelter access. One interesting find is that when queer people explain how they do feel safe in public parks it is often that it depends on how they express their identity. When someone does not express themselves in a heteronormative way they are more inclined to perceive a space as unsafe.

“As a female and sometimes obviously queer-looking person I do have to watch out for my own safety, for example when there are groups of men hanging out in a park. Also, I do have to consciously think about what I'm wearing at times in order to prevent and not risk any possible comments from others, especially in busy public areas.”

Another way sexuality influences perceived safety is when going out in a public space with a partner. The results of the survey show that some participants have experienced negative comments or feel too unsafe in general showing affection in public spaces. This might also limit queer people from seeking shelter during climate extremes in parks. As they cannot be themselves, the quote below illustrates this phenomenon.

“Being expressively gay might cause some people to harass me, so I’m less inclined to visit parks in other cities, especially at night. Holding hands with a same-sex partner is also something I don’t dare to do in public, which limits me from being myself in parks as well.”

5 Conclusion

5.1 Conclusion

By exploring the barriers queer people and women experience limiting them from accessing urban parks during extreme weather in Groningen, this thesis aimed to find out what the determinants are for park use during heat extremes. Climate shelters are important for vulnerable groups in climate extremes, therefore, it is important to look into the barriers hindering women and queer people. Women and LGBTQ+ people are considered more vulnerable during climate extremes, which happen increasingly frequently because of climate change.

Some determinants for the use of urban green space have been identified in this research. Women and queer people were likely to go to public parks to escape heat. Not one of the group queer individuals and women responded that going to public parks was the strategy they always used in heat extremes. However, this group of respondents are more likely to often go to public green spaces as a means to escape. Factors identified to explain this are that queer people and women more often experience heat stress within their homes than men. Distance to parks is as hypothesised also a determinant to using climate shelters. According to many participants, the park they prefer in Groningen is the one located near their home or university.

Queer people and women in this study perceive and frame urban green space as a place to socialize, relax and escape the heat. Most respondents' ideal park has shadows from trees and is an overall green space with a place to swim and extra amenities like clean bathrooms. Sanitary was an interesting find as this was not one of the hypothesized barriers. Women and queer

people attach more value to public bathrooms than men. (Colliver and Duffus, 2022). Lack of hygienic sanitary facilities can be a barrier to green climate shelter access.

Crowdedness of public parks is another barrier identified, parks were too busy to relax or socialize. There are not enough spots to sit and escape the heat. Other barriers identified are related to perceived safety. This is following the broader theory that women have more sense of personal safety than men. According to respondents, groups of men are intimidating in public spaces. Especially during hot weather, women are often more prone to being harassed and catcalled in public. The trans* perspective is that they always have an unconscious fear of being a victim of a hate crime when going out into public space. Gender plays a role in this research as a factor of perceived safety. Sexuality also plays a role, as queer respondents reported being conscious of their surroundings and how they express themselves, which could be a limiting factor in accessing public green space.

These barriers that have been identified are only one part of the climate justice pyramid as identification of the problem is only awareness. Queer people should be more recognised in procedures and climate change policies to achieve more climate justice.

5.2 Research Limitations and Future Research Suggestions

A limitation of this research is the number of cases, for qualitative analysis, there is enough data to give some meaningful insights. However, more cases would improve the integrity and rigidity of the research. Another factor that could have limited this research is positionality. As an inexperienced researcher, there might have been a bias in approaching the data. In qualitative research, the role of the researcher is important, as a queer woman doing this research there might have been a bias in discovering barriers. Some barriers have already been identified previous to the research by the lived experience of the researcher. This has influenced the way the survey questions have been phrased and how the hypothesis is formulated, which has the consequence that different data might have been obtained. However, this can also be seen as a strong point of the thesis as it offers a unique perspective on the topic.

In the future, it will be useful to conduct large-scale research on this topic, as the role of sexuality in accessibility to climate shelters is still not adequately researched. It might be interesting to compare different cities and different types of climate shelters, as this research only addressed green climate shelters. Another recommendation is to research how policy can

be changed to improve climate shelter accessibility for queer people as there is still limited research on this topic.

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Appendix A. Survey Questions

1 What is your age?

- 18-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70+

2 With what gender do you identify?

- Man
- Woman
- Non-binary
- Agender
- Genderqueer
- Prefer not to say

3 What is your sexuality? (Multiple answers possible)

- Queer
- Bisexual
- Trans*
- Heterosexual
- Gay
- Lesbian
- Asexual
- Prefer not to say

4 What is your preferred park use? (Multiple answers possible)

- Socializing
- To escape the heat
- Relaxing, leisure time
- Sports
- Taking care of children
- Walking the dog

5 During events of extreme heat or heatwaves, how often did you consider it too hot to stay inside your home?

- Always
- Often
- Sometimes
- Rarely
- Never

6 How often do you go to a public green space to escape the heat during heat extremes?

- Always
- Often
- Sometimes
- Rarely
- Never

7 What other personal methods of coping with extreme heat do you have?

8 Which parks do you like to visit in Groningen and why? (for example accessibility reasons, friends, amenities, distance, or a feel of the park or greenery, etc.)

9 What would your ideal park or green space look like?

10 Which barriers are stopping you or limiting you from going to a park? (For example: feeling of safety (day/night), previous experiences in a park that you experienced as negative, accessibility, distance, etc.)

11 How often do you feel that your gender or sexuality is limiting you from enjoying or going out to public (green) space? (because of the feeling of safety or other reasons)

- Always
- Often
- Sometimes
- Rarely
- Never

12 Why does or doesn't your gender or sexuality influence your use of public (green) space?

13 Do stories in the media influence your feeling of safety in public green space and why?

Appendix B. Codes Qualitative Analysis

Codes used in ATLAS.ti
personal coping mechanisms
preferred park in Groningen
physical barriers
role sexuality
perceived safety
nature
hygiene
leisure
cooling down
accessibility
extra amenities
relaxing
sports
lights
slow modes of transport
gender