Exploring the effects of the social and built environment on perceived safety in urban parks

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Colophon

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Photo on cover page: water feature in the Noorderplantsoen, Groningen (Author, 2021).

Abstract

A poorly planned park can have undesirable effects on human wellbeing. Given the strong evidence that the feeling of safety in urban parks is related to various positive mental and physical health effects (Lanza et al., 2021; Wu and Kim, 2021; Pearson et al., 2021), it is important to see which characteristics influence the perceived safety of people in urban parks. Therefore, this research addresses the question how socio-demographic, social, and built environment characteristics influence the perceived safety of people within urban parks, at different times of the day. The characteristics age, gender, race, maintenance, vandalism, other people, reference/meeting points, houses, facilities, street lighting, big streets, clear paths, and seeking refuge are discussed for their importance during the day and at night. The data, collected in a survey, and distributed in the Noorderplantsoen and Stadspark (Groningen), is analyzed by a frequency analysis based on error bars, and Spearman's rank correlations. This research concludes that, based on descriptive statistics, all above-mentioned characteristics are to some extent important for people's perceived safety, and that all characteristics are perceived more important at night than during the day. Especially the characteristics maintenance and presence of people are important during the day, and street lighting are most important at night. These results can be used in planning practice to improve the perceived safety in urban parks.

Keywords: urban park characteristics, perceived safety, Noorderplantsoen, Stadspark.

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1. Introduction

1.1. Background to the study

Urban parks are designed to carry multiple functions. Examples include stimulating people to improve their physical activity, and reduction of the urban heat island effect. In general terms, urban parks aim to improve people's health and well-being (Lanza et al., 2021; Wu and Kim, 2021; Akpinar, 2016).

However, when a park is poorly planned, it can actually have undesirable effects. Mak and Jim (2021) state that this has frequently been overlooked by planners and administrators. An example is given by Lis and Iwankowski (2021). They show how the density of trees in urban parks can have positive effects in terms of perceived privacy, but negative effects in terms of perceived safety. Therefore they advise planners not to make parks very densely vegetated if people already have a fear of crime. Foster and Giles-Corti (2008) argue that fear of crime also impacts people's physical behavior. Furthermore, Wu and Kim (2021) revealed that there are disparities in the health effects of green parks within various socio-economic and demographic populations. Misiune et al. (2021) agree with the above findings and add that distance and safety are the strongest push factors for not visiting a park.

Given the strong evidence that the feeling of safety in urban parks is related to various positive mental and physical health effects (Lanza et al., 2021; Wu and Kim, 2021; Pearson et al., 2021), it is important to see which characteristics are highly valued, and thus influence the perceived safety of people in urban parks. Policymakers can then improve these highly valued characteristics and adapt urban parks in a way that all people feel safer.

In their literature review, Foster and Giles-Corti (2008) have researched what characteristics influence perceived safety in urban parks. These characteristics include socio-demographic characteristics, social environment characteristics, such as the presence of people, and built environment (BE) characteristics, such as lighting, seeking refuge, and maintenance. A similar study, done by Dogrusoy and Zengel (2017), adds the on-site observation analysis to the methods for researching characteristics that influence perceived safety. On-site observations are used in this research as well, as these enhance the representativity of characteristics (Krutkin, 2020). Peters et al. (2010) specifically measured the social environment characteristics that influence safety. All these different characteristics influence perceived safety, however, they are not measured to what extent they contribute to perceived safety. That is the research gap that this research will address, and therefore add to the existing literature.

1.2. Research problem

This research aims to find to what extent characteristics of urban parks influence people's perceived safety, and what characteristics of urban parks are valued high or low for people's perceived safety during the day, and at night. The main research question arising from this research problem and research aim is:

How do the social environment and the built environment influence the perceived safety of people within urban parks, at different times of the day?

To answer the main question, different sub-questions will be answered:

- What socio-demographic, social, and built environment characteristics play a role in the perceived safety of people in urban parks?
- To what extent do socio-demographic, social, and built environment characteristics influence the perceived safety in urban parks during the day?
- To what extent do influences of socio-demographic, social, and built environment characteristics on perceived safety differ based on time of the day?

1.3. Structure

In the theoretical framework, the various relevant socio-demographic, social environment, and built environment characteristics are categorized and explained. The conceptual model highlights the hypothesis and the relations between all variables on perceived safety in urban parks. After that, the methodology explains the adopted method to research the main- and sub-questions. The section after that presents the results. The final section discusses the limitations of the current research, summarizes the main findings in a conclusion, and discusses future research.

2. Theoretical framework

For this research, various previous studies are examined to see what characteristics of urban parks influence the perceived safety of people within urban parks. These characteristics are categorized under three different overarching factors: socio-demographic characteristics of the people, social characteristics, and BE characteristics of the park. Thereafter, the influence of the time of the day is discussed.

2.1. Socio-demographic characteristics

2.1.1. Age

Dogrusoy and Zengel (2017) concluded that in urban parks, young adults between the ages of 15 and 24 feel less safe than older people over the age of 65. This is in line with Pain (2001), who earlier reported that older people suffer from the effects of anxiety less than previously believed, whereas younger people are gradually recognized as being more vulnerable to victimization and fear. However, Schafer et al. (2006) conclude that older men show a substantially higher level of fear regarding personal victimization.

2.1.2. Gender

Mak and Jim (2018) reported that gender is the most influential socio-demographic characteristic influencing perceived safety in urban parks. In previous literature, it is questioned if men's relative high perceived safety in urban spaces is valid, as men and women alike expressed concern about being robbed of their belongings (Pain, 2001). However, Schafer et al. (2006) reported that women, in particular, fear personal victimization more, and have a higher level of concern for their perceived safety than men. These articles are not consistent in their findings. De Jesus (2010) agrees with Schafer et al. (2006) and report that a significant proportion of female respondents (66%) described urban parks as not safe, mainly due to fear of sexual harassment.

2.1.3. Race

Pain (2001) states that race is a strong predictor for fear of crime. Fears of white people would arise out of stereotypes existing in the relationship between race and crime. However, many studies suggest that people of color are more afraid of violence than white people, which affects their health and wellbeing and how they use space (Radis and Nadan, 2020; Chaparro et al., 2019).

2.2. Social characteristics

2.2.1. Symptoms of social disturbance

Jamme et al. (2018) explain that the presence of "broken windows", meaning symptoms of social disturbance in the BE, is associated with violence and hence affects people's perceived safety. This is in line with the conclusions of Mak and Jim (2018), who observed that people who participated in an activity intended for that place (people playing basketball on a basketball field instead of hanging around) gave signals to other people to behave similarly in that place. A lack of **maintenance** attracts the wrong people and becomes an invitation to illegal behavior (Iqbal and Ceccato, 2016). In addition, abandonment of roads and parks contribute to the promotion of **vandalism** such as graffiti, and drug dealing (Evensen et al., 2021). Symptoms of social disturbance can be placed under built environment characteristics, as broken windows are physical, hence, due to the social nature of crime, it is placed under social characteristics.

2.2.2. Natural surveillance

In early work, Jacobs (1992) concludes that ''eyes on the street'' results in increased perceived safety. In more recent work, and also stated in the crime prevention through environmental design (CPTED) principles, this is referred to as natural surveillance (Thani et al., 2016). A paradox is that on the one hand **presence of people** who seem trustworthy, like citizens, store owners, and visitors of

facilities (discussed in section 2.3.2) in urban parks, reduce fear of crime. They are engaged in one's daily tasks and social encounters, thereby creating a safe atmosphere with their cooperative supervision (Jacobs, 1992; Thani et al., 2016). On the other hand, discussed in section 2.2.1, the presence of seemingly dangerous people, such as drug dealers or drunken people evoke fear of crime (Mak and Jim, 2018). Therefore, most people prefer going to a park together with familiar, trustworthy people, rather than alone (Maruthaveeran, 2017).

2.3. Built environment characteristics

Early conclusions about the BE suggested by Jacobs (1992), are that safety is influenced by the BE, and safety is especially improved in mixed-use, dense and dynamic areas. Wood et al. (2010) report significant and positive correlations between community architecture and safety expectations. With a dynamic BE around the urban parks, people enter the park for different reasons, on different days, and at different times, again stimulating natural surveillance (Taylor et al., 2020).

2.3.1. Visibility

Thani et al. (2016) argue that proper planning of public spaces can increase natural surveillance, and this, in turn, increases perceived safety, as well as decreases potential crime. Baran et al. (2018) argue that **houses near parks** can improve natural surveillance. Also, **street lighting** has been linked to reduced crime and increased park visitors, resulting in increased natural surveillance (Rahm et al., 2021). Baran et al. (2018), Jansson et al. (2013), Rahm et al. (2021), and Lis et al. (2019) found that parks with lots of vegetation are significantly perceived less safe than less vegetated parks, so **clear paths** are important. A related theory is the ''prospect and refuge theory'' (Appleton, 1975; El-Metwally, 2021). According to this theory, ensuring citizens' ability to see potential dangers and abusers early, seeking **refuge**, and having **big streets** strengthened their perceived safety (Dogrusoy and Zengel, 2017; Rahm et al., 2021).

2.3.2. Land use diversity

The strategic positioning of buildings public spaces, and opportunities to communicate, such as **reference/meeting points** and benches to sit on, encourages natural surveillance of the park's surroundings and generates greater social interaction as well as enhanced perceived safety (Kerishnan and Maruthaveeran, 2021; Peters et al., 2010). Good land-use planning increases visibility, as well as people's reasons to visit the park (Jacobs, 1992). The presence of **facilities** attracts visitors, and encourages concentrations of people in doing activities (Wang and Wu, 2020; Dogrusoy and Zengel, 2017).

2.4. Time of the day

People have varying feelings of perceived safety in public environments at different times of the day (Pain, 2001). The biggest difference in perceived safety regarding time, is the day/night division (Rahm et al., 2021; Boomsma and Steg, 2014). Evensen et al. (2021) for example find a paradox that considers privacy behind vegetation, so no **clear paths**, as potentially attractive physical features during the day because it provides protection, but it can also be risky at night because it can attract attackers. Mak and Jim (2018) found a related paradox, with the **presence of people**. As stated earlier, the presence and type of people in a park are also depending on time of the day (Rahm et al., 2021; Painter, 1996; Bahriny and Bell, 2020). Therefore time of the day may influence **vandalism**, **presence of people**, visibility, and how different **facilities** will be used through time of the day.

2.5. Conceptual model

After carefully studying existing literature on characteristics that influence perceived safety in urban parks, the characteristics that are included, and also the answer to sub-question one, are included in the conceptual model (figure 1). This model shows the connection between all characteristics.

It is expected that these characteristics show a relationship with perceived safety in urban parks, and that their influence differs based on time of the day.

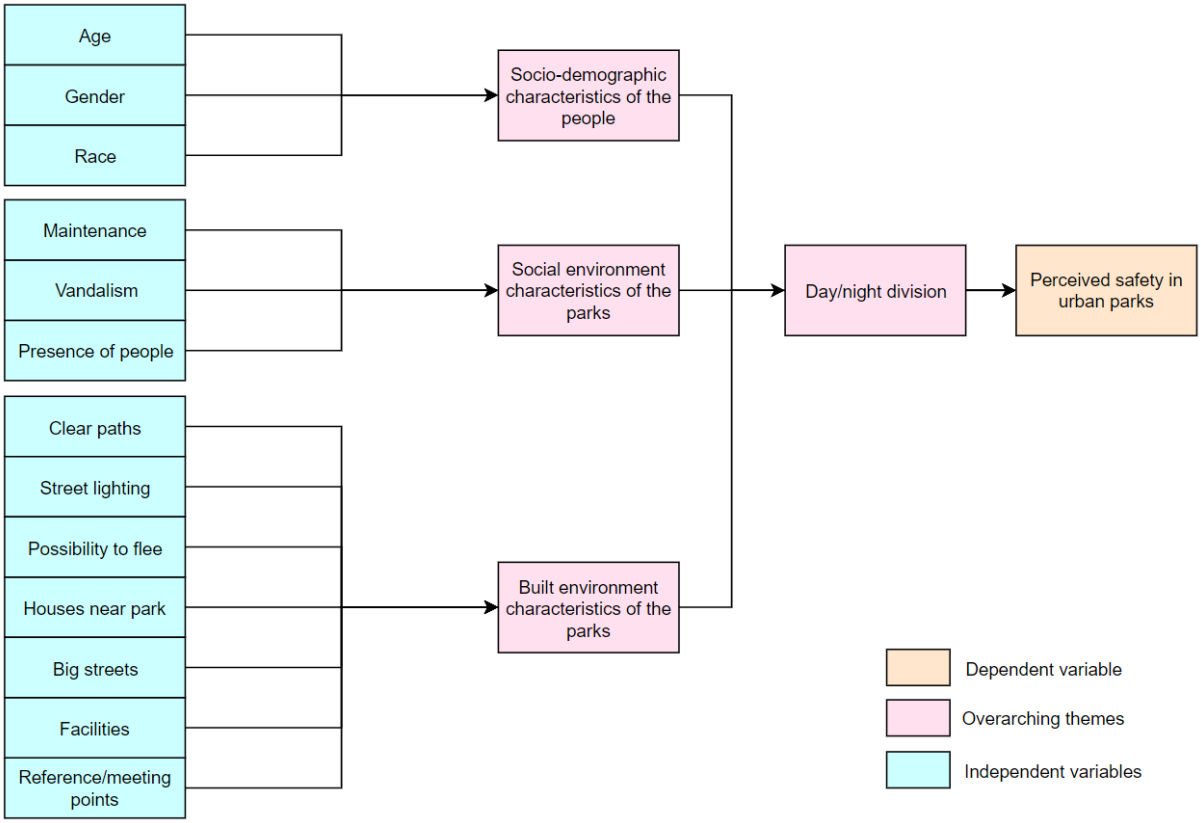


Figure 1: conceptual model of the study (Author, 2021).

3. Methodology

In this research, a literature review and a survey are used to collect data. An ordinal regression, a frequency analysis with error bar plots, and Spearman's rank correlations are used to analyze the data and answer the main question. The case studies are introduced first. Thereafter it is explained how the data collection and the data analysis answer the main question of this research.

3.1. Case studies and setting

Figures 2 and 3 show an overview of what the two case studies, Noorderplantsoen and Stadspark, look like. Noorderplantsoen lies to the north, and Stadspark lies to the southwest of the city center of Groningen. Stadspark is approximately twice as big as the Noorderplantsoen.

When reading both reports of Kolstein (2018; 2019), about the perceived safety and accessibility of the two urban parks, an important difference was visible. From the local inhabitants surrounding the Noorderplantsoen, 73% regularly walk there, and 70% regularly pass Noorderplantsoen to get to work. Furthermore, 81% of the inhabitants say they (almost) never feel unsafe, and according to their research 0%, feel unsafe often (Kolstein, 2019).

In the Stadspark, local inhabitants indicate that 47% regularly walk there, and 50% regularly pass Stadspark to get to work. Furthermore, 21% of the respondents indicate that they think the Stadspark has to be made safer for people to feel comfortable, and 15% think that the safety in the Stadspark is very bad (Kolstein, 2018).

These parks are selected as case studies, as it is interesting to see what characteristics of both parks influence this difference in the perceptions of safety.

Now, sections 3.2., 3.3., and 3.4. explain the different data collection methods.

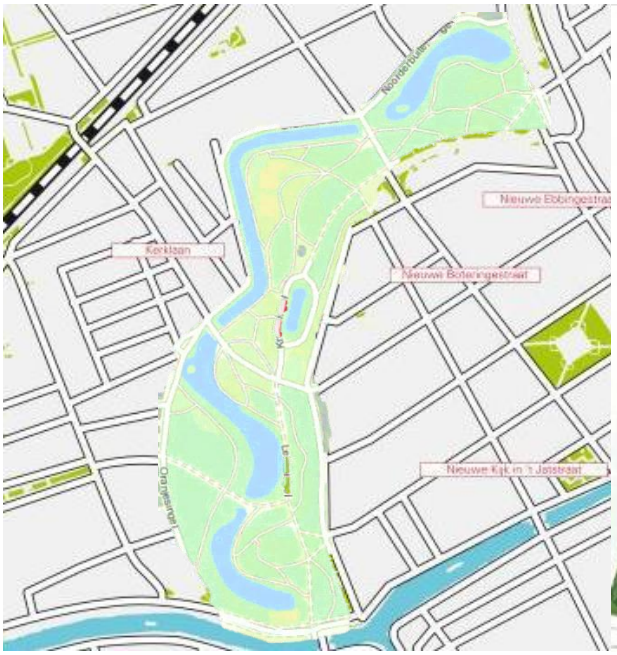


Figure 2: map of Noorderplantsoen (Author, 2021).

Figure 3: map of Stadspark (Beeldbank Groningen, 2015).

3.2. Literature review

The theoretical framework explained which characteristics contribute to perceived safety in urban parks. The selection of the right literature was done via Scopus and ScienceDirect. The keywords ''Urban parks'' AND ''Perceived safety'' gave 27 matches on Scopus, and 21 matches on ScienceDirect. These articles are analyzed in terms of relevance and date. After this, additional articles are found on Google Scholar on each specific characteristic, providing some more insights into how this characteristic is discussed in the literature. For example: searched is on ''influence of race on perceived safety in urban parks''. The relevant articles are discussed in the literature review, and these characteristics are used in the survey to investigate to what extent people think the presence of these characteristics influences their perceived safety in urban parks.

3.3. On-site observations

Before performing the survey, on-site observations on the social and built environment characteristics in both parks are executed by camera. Krutkin (2020) addresses the importance of using images to represent feelings and emotions in his article. The selection of on-site observations is done by walking all paths of both parks and capturing the specific visible social and built environment characteristics. These pictures represent different social and built environment characteristics in the survey.

3.4. Survey

A survey is conducted to analyze to what extent different socio-demographic, social, and built environment characteristics influence perceived safety in urban parks according to the respondents.

The survey is distributed to people making use of the Noorderplantsoen, the Stadspark, and people not walking in a park, distributed around Westerhaven. The survey is distributed on different days and at different times, as research found that different people will be recruited as they have different reasons to be in the park (Misiune et al.,2021; Taylor et al., 2020; Jacobs, 1992). The respondents have been handed a card with a QR-code on it, which led them to the survey. This way, respondents filled in the survey at home, and the COVID-19 regulations at that time were lived up to. A more detailed explanation of the recruitment of people is included in Appendix 1.

First, the socio-demographic characteristics were asked. Then, on-site observation images which differ in social and built environment characteristics were presented to the respondents. The extent to which people think social and built environment characteristics influence their perceived safety in urban parks is measured on a Likert-scale, as ordinal data. Respondents could choose 5 answers ranging from 'completely disagree' to 'completely agree'.

Thereafter, respondents were asked for their overall perceived safety in the Noorderplantsoen and the Stadspark during the day, and at night.

To account for characteristics that are not found in existing literature, the last questions in the survey asked respondents if they felt that other characteristics also influence their perceived safety. The discussion in section 5.1 further elaborates on this. The complete survey is included in Appendix 2.

Regarding ethical considerations, respondents were informed before filling in the survey what the aim of the survey and the research was, how the data is used, and that the data will not be used for future research. Furthermore, no names are requested, to guarantee anonymousness.

3.5. Analysis

From the literature review, sub-question one is answered. For sub-question two and three, the results of the survey were used and analyzed with descriptive statistics and statistical analysis.

The survey data is analyzed through SPSS. The quality of the data is discussed in section 5.1. The analysis starts with descriptive statistics on all characteristics.

An ordinal regression is performed on the variables age and gender as the dependent variable is ordinal, and the independent variables are nominal. This regression shows how the variables age and gender relate to the perceived safety scores in both urban parks.

Race is treated as qualitative data, to get a more in-dept understanding of how race can influence perceived safety, and therefore not included in the ordinal regression. The social and BE characteristics are also not included in the ordinal regression, as there are too many variables, making it easy to make mistakes in interpreting the outcomes. To account for this, other methods are used to analyze the social and BE characteristics. These methods are explained below.

A lot of researchers have called for the median to be used as the measure of central tendency for ordinal data (Sullivan and Artino, 2013). However, researchers have also indicated that especially for Likert scale data, other descriptive and inferential statistics can be used for research analysis, such as the mean (Norman, 2010; Sullivan and Artino, 2013). This is mostly done in settings where respondents have to tell to what extent they agree to, or use a certain phenomenon (Corazza et al., 2021; Richter et al., 2021; Schafer et al., 2006). This also applies to this survey. To be sure, medians are analyzed first to see if these do not deviate much from the means. As they closely corresponded, it is argued that the mean is a proper measure of central tendency. The full analysis of medians is included in Appendix 3.

For answering sub-questions two and three, a frequency analysis with error bars is adopted, to see how strongly each variable affects the dependent variable ’perceived safety in urban parks’. This is placed in a ranking based on the means to see which variables are more important than others for perceived safety in urban parks.

Furthermore, due to the ordinal origin of the variables ‘overall perceived safety’ in both parks, Spearman’s rank correlations are performed to check how strong the relationship is between the independent variables (socio-demographic, social, and built environment characteristics) and the dependent variable (perceived safety in urban parks).

The variables are asked twice in the survey, for during the day and at night. The variables focusing on daytime are tested against the overall perceived safety of people in the Stadspark and Noorderplantsoen during the day, and the variables focusing on nighttime are tested against the overall perceived safety at night. This answers sub-questions two and three. These answers add to the existing theory discussed in section 2. Figure 4 gives a summary of the analysis.

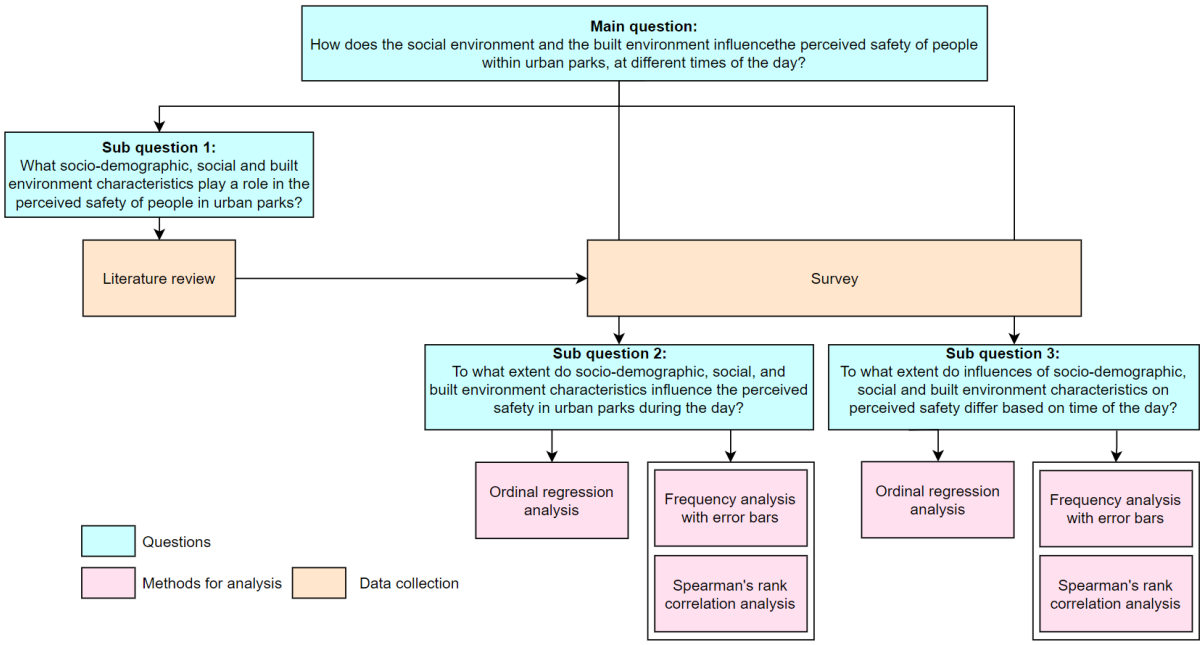


Figure 4: Research design (Author, 2021).

4. Results

This section discussed the results obtained from the survey, and answers sub-question two and three.

4.1. Socio-demographic characteristics of the data

The raw dataset is included in Appendix 4. A total of 107 respondents participated in the survey. The respondents are approximately evenly distributed among the variables age and gender. A more detailed description of the socio-demographic characteristics is included in Appendix 5.

Some people preferred not to include information on age and gender. Also, for gender, one person responded 'other'. Nowadays including this group is seen as important, but an analysis based on one person will not generate trustworthy conclusions. After removing these cases, the ordinal regression on age and gender is based on 100 cases.

The independent variables age and gender are analyzed with an ordinal regression, where the overall perceived safety scores of the Noorderplantsoen and the Stadspark, both during the day and at night are the dependent variables. The full ordinal regression can be found in Appendix 6.

4.1.1. Age

The null hypothesis of the ordinal regression is that there is no relationship between the different age groups, and the overall perceived safety scores.

Ordinal regression **1** (see Appendix 6) shows that for the safety in Noorderplantsoen during the day, all age groups younger than 65+ show a significant result ($P < 0.05$). The positive estimate tells us that for each younger age group, higher perceived safety scores are expected than for the reference age group (65+). This means that there is a positive relationship between age and overall perceived safety in the Noorderplantsoen during the day.

Ordinal regression **2** shows that for the safety in Stadspark during the day, only the age groups '30-49' and '50-64' are significant ($P </= 0.05$). The positive estimate explains that for these age groups, higher perceived safety scores are expected than for the reference age group (65+). This means that there is a positive relationship between age and overall perceived safety in the Stadspark during the day.

Ordinal regression **3** shows that for the safety in the Noorderplantsoen at night, only the age groups '18-29' and '50-64' are significant ($P < 0.05$). The positive estimate explains that for these age groups, higher perceived safety scores are expected than for the reference age group (65+). This means that there is a positive relationship between age and overall perceived safety in the Noorderplantsoen at night.

Ordinal regression **4** shows that for the safety in the Stadspark at night, no age group shows a significant result ($P > 0.05$). This means that for the overall perceived safety score of the Stadspark at night, no relationship between age and overall perceived safety in the Stadspark at night is found.

To conclude, a stronger relationship is found between age and overall perceived safety during the day. Also, all age groups younger than 65+ show higher perceived safety scores, meaning that people aged 65+ feel the least safe of all age groups. This is in contrast to the conclusions of Dogrusoy and Zengel (2017) and Pain (2001), but in line with Schafer et al. (2006).

4.1.2. Gender

The null hypothesis of the ordinal regression is that there is no relationship between gender and the overall perceived safety scores.

Ordinal regressions **1** and **2** explain that for the safety in both parks during the day, gender doesn't show a significant result (P > 0.05). This means that for the overall perceived safety during the day in urban parks, no relationship between gender and overall perceived safety is found.

Ordinal regressions **3** and **4** explain that for the safety in both parks at night, gender does show a significant result (P = 0.000 < P = 0.05). Both estimates tell us that for men, higher perceived safety scores in urban parks are expected at night. Men are more likely to perceive both parks as safe at night. This means that for the overall perceived safety at night in urban parks, a positive relationship between gender and overall perceived safety is found.

As opposed to age, a stronger relationship between gender and perceived safety in urban parks at night is found. Men show higher perceived safety scores than women, which is in line with the conclusions of De Jesus (2010) and Schafer et al. (2006).

4.1.3. Race

To get a more in-dept understanding of how race can influence perceived safety, race is treated as an open question. People had to respond if they felt that their perceived safety was influenced by their race.

73 respondents, which is almost half, answered 'no', of which 8 people responded that this is because they are white (for example respondents 1, 18, and 102). 10 people did respond 'yes' exactly because they are white (respondents 5 and 51). Of these 10 people, some addressed that because they are white they feel safer as they feel they have less risk to be judged (respondents 64 and 100). Others, however, addressed that because they are white they feel less safe due to harassment (respondents 40, 41, and 74).

Other people admitted that race might play a subconscious role, which includes having prejudices:

''Subconsciously, I am more attentive when I see boys in hoodies, for example. This clothing style is more suited to the hip-hop scene, which is associated with Moroccans and Turks. So indirectly I think.'' (Respondent 29).

''Depends. I am white and when I see a group of black youths on a bench, with a boombox, who are smoking a bit in the meantime I feel less safe. It does not make much difference and does not happen often, but when it happens it does.'' (Respondent 16).

People also admitted that minorities might be discriminated based on their race (respondent 66).

For example respondents 76 and 98: ''Since I belong to the "majority" I have never felt insecure. If you belong to the minority, it can, unfortunately, affect your perceived safety.'' This is in line with Radis and Nadan, (2020) and Chaparro et al. (2019).

4.2. The effect of social and built environment characteristics on perceived safety in urban parks

This section discusses sub-question two: *To what extent do socio-demographic, social, and built environment characteristics influence the perceived safety within urban parks during the day?*

In figure 5 the ranking of the overall perceived safety means of all characteristics during the day is presented. We can see that all characteristics are higher than 3 (=neutral), and therefore, based on descriptive statistisc, all characteristics are to some extent important for people's perceived safety in urban parks. The next sections discuss the statistical results on the characteristics.

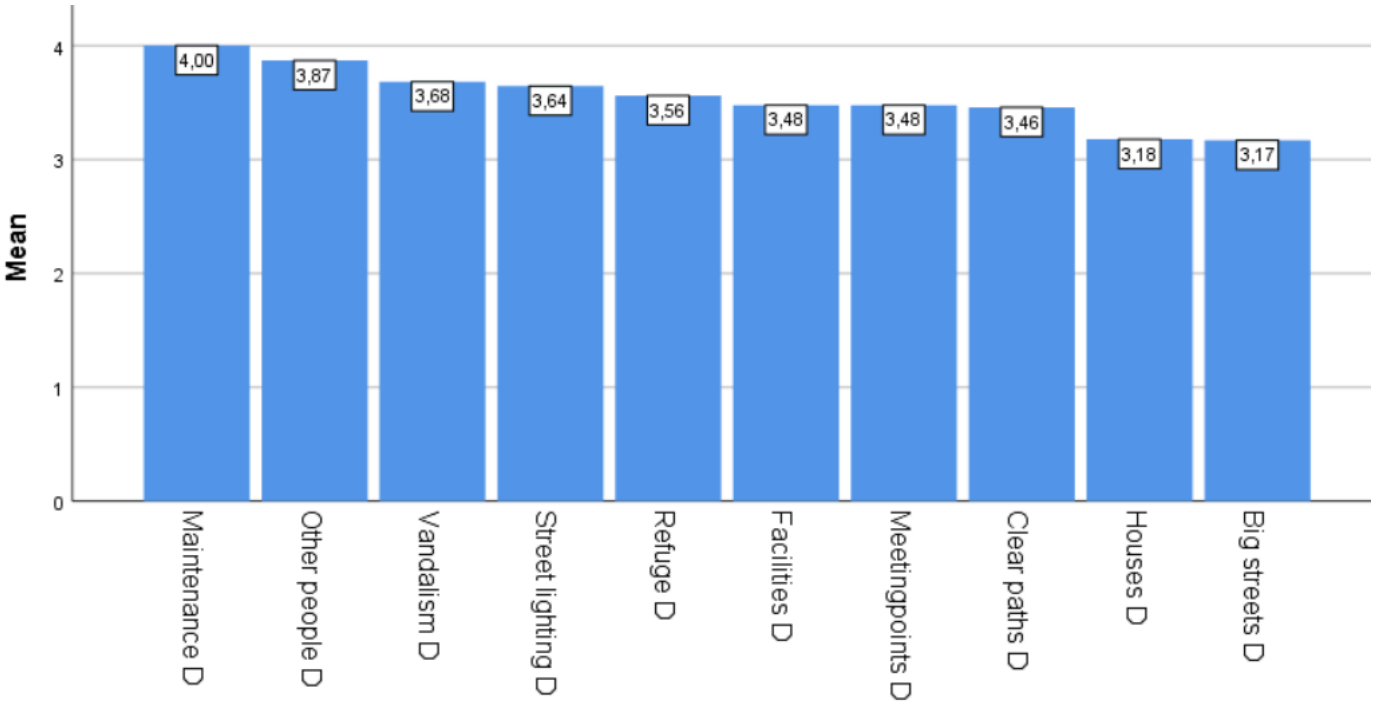


Figure 5: overall perceived safety means for all characteristics where D=day (Author, 2021).

4.2.1. Frequency analysis with error bars

Figure 6 shows error bar plots. The error bars are based on the mean, which is explained in section 3.5. If an error bar of a characteristic is higher then another error bar of a characteristic, and they do not overlap, we can say that with 95% confidence, this characteristic is statistically significantly higher valued than the other characteristic.

The characteristics with the highest error bars during the day, are the maintenance of the park, and the presence of other people. These are significantly higher than 5 other characteristics of urban parks. This means that maintenance and presence of people are valued highest for peoples perceived safety during the day. This is in line with the findings of Evensen et al. (2021) and Iqbal and Ceccato (2016).

The characteristics with the lowest error bars during the day, are the presence of houses near the park, and the presence of big streets. These are significantly lower than 5 other characteristics of urban parks, and means that presence of houses and big streets are valued lowest for peoples perceived safety during the day. This contrasts the findings of Baran et al. (2018).

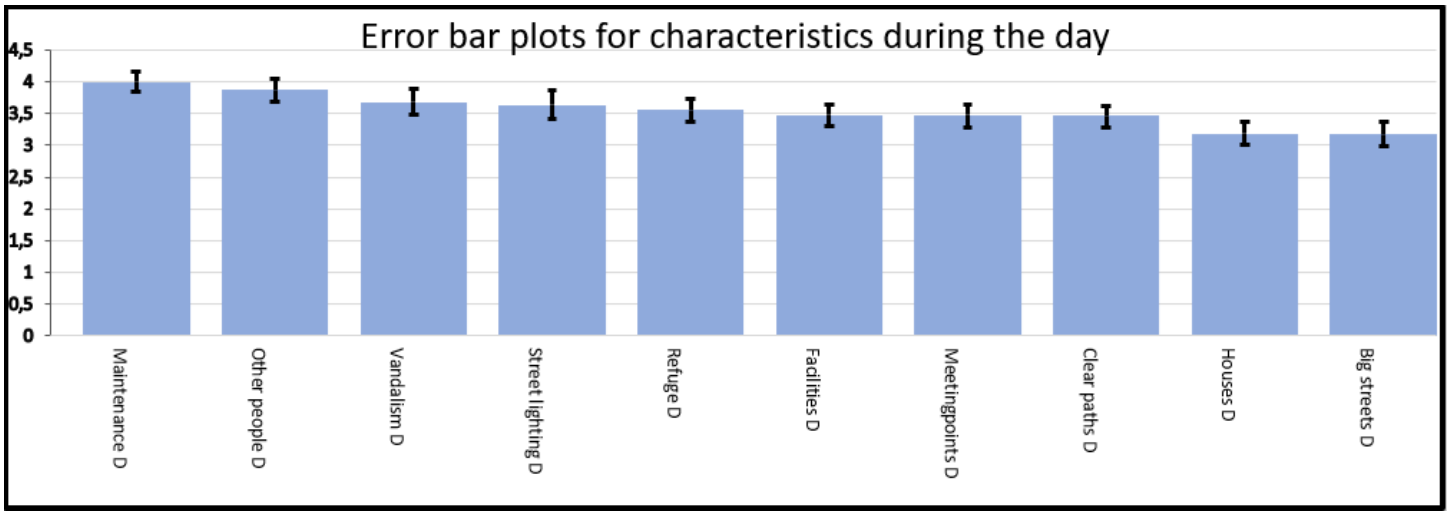


Figure 6: Error bar plots where D=day (Author, 2021).

From the error bars, we cannot see if these characteristics are present in both urban parks or not. This is done with the Spearman's rank correlations, which show the relation between the characteristics and the perceived safety in both parks.

4.2.2. Spearman's rank correlation analysis

In Appendix 7, Spearman's rank correlations are executed. H_0 is rejected ($P<0.01$) for two characteristics, meaning there is negative relationship between how the characteristics presence of houses near the park and clear paths are ranked, and the overall perceived safety in the Stadspark during the day.

As both estimates are negative, the perceived safety in a park is going to be lower if respondents rank a characteristic higher. This means that if respondents rank presence of houses and clear paths higher, the perceived safety in the Stadspark is going to be lower. An explanation for this can be that presence of these characteristics is insufficient.

4.3. Perceived safety in urban parks based on different times of the day

This section discusses sub-question three: *To what extent do influences of socio-demographic, social, and built environment characteristics on perceived safety differ based on time of the day?*

In figure 7 the ranking of the overall perceived safety means of the characteristics at night is presented. We can see that all characteristics are higher than 3 (=neutral), and therefore, all characteristics are to some extent important for people's perceived safety in urban parks.

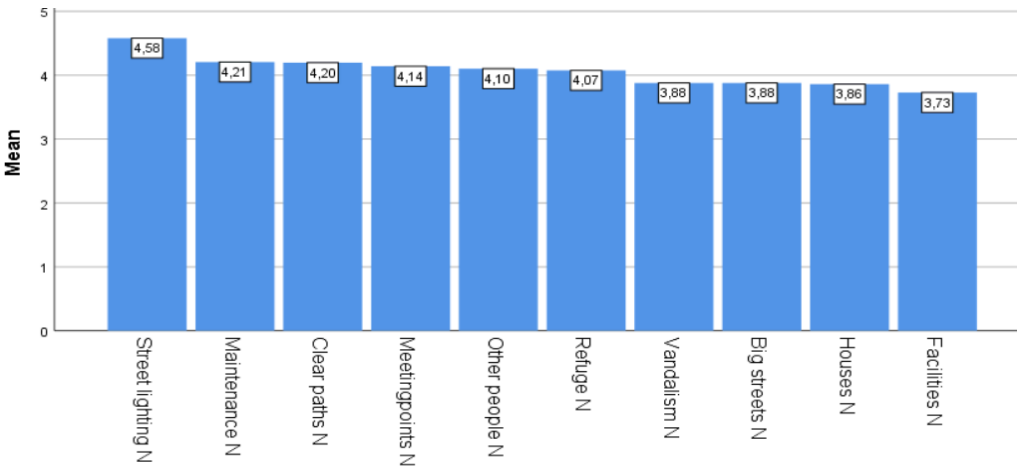


Figure 7: overall perceived safety means for all characteristics where N=night (Author, 2021).

In figure 8 we can see the change in mean valued during the day and at night. Each characteristic scored higher at night, meaning that the presence of all characteristics in urban parks at night does contribute more to people's perceived safety than during the day, according to descriptive statistics. The biggest change is in the characteristic street lighting.

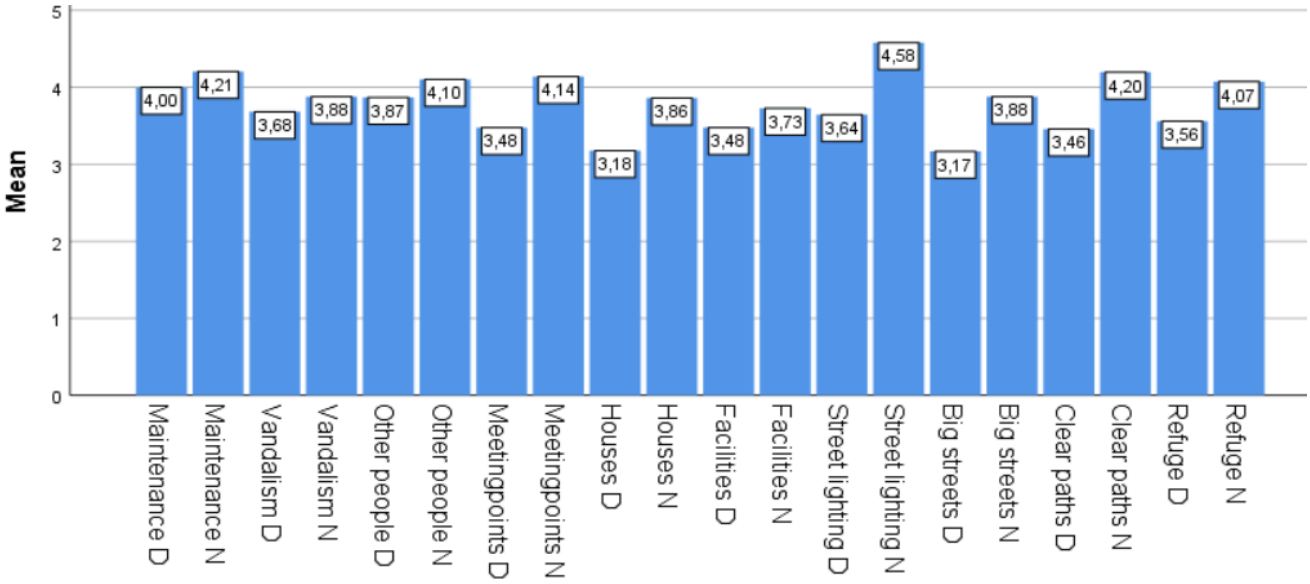


Figure 8: overall perceived safety for all characteristics with the mean over time, with D=day and N=night (Author, 2021).

4.3.1. Frequency analysis with error bars

As explained before, if the error bars do not overlap, there is a statistically significant difference. When comparing figure 6 and 9, it can be concluded that 6 of the 10 characteristics of urban parks are statistically significantly ranked higher for people's perceived safety at night than during the day. These are the presence of reference/meeting points, houses, street lighting, big streets, clear paths, and seeking refuge.

Figure 9 shows that the highest-ranked characteristic at night is presence of street lighting. This characteristic is significantly higher than all other characteristics. This is in line with the findings of Rahm et al. (2021), Evensen et al. (2021), and Iqbal and Ceccato (2016).

The lowest-ranked characteristic is facilities. This characteristic is significantly lower than 5 other characteristics. This can be explained by the fact that people believe that groups of 'unwanted' people gather there at night (Thani et al., 2016; Mak and Jim, 2018).

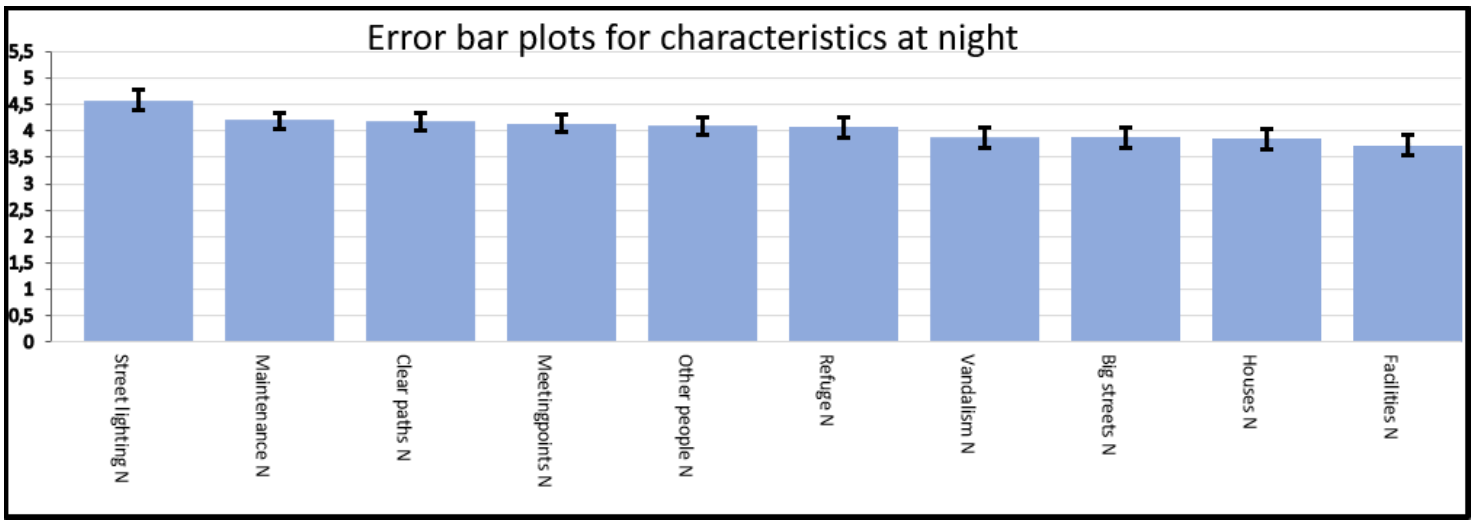


Figure 9: Error bar plots where N=night (Author, 2021).

4.3.2. Spearman's rank correlation analysis

The Spearman's correlations (tables 29 and 30 in Appendix 7) show that all characteristics are statistically significant ($P < 0.05$) in the Stadspark at night. This means that H_0 is rejected for these characteristics and that there is a negative relationship between how all characteristics are perceived as important for people's perceived safety, and the overall perceived safety in the Stadspark at night.

For the Noorderplantsoen, only the characteristics presence of reference/meeting points, houses, facilities, big streets, and seeking refuge are statistically significant. This means that H_0 is rejected for these characteristics and that there is a negative relationship between how the characteristics are perceived as important for people's perceived safety, and the overall perceived safety in the Noorderplantsoen at night.

As all coefficients are negative (see Appendix 7 again), the perceived safety in the parks is going to be lower if respondents rank a characteristic higher. An explanation for this can be that the parks do not score high in terms of their presence of these characteristics.

The fact that the other characteristics in the Noorderplantsoen do not show a statistically significant result can mean that, as all statistically significant characteristics have a negative estimate, the not significant characteristics are sufficiently present in the Noorderplantsoen.

In the last questions, respondents could add more characteristics that weren't asked in the survey. Respondents highlighted that also the presence of police is making people feel safe. The theoretical framework did not mention the presence of police, so this characteristic was not included in this research. Other mentioned characteristics were sexual offenders or harassment. This last characteristic is sometimes interpreted as presence of other people. Therefore, it depends on what kind of people there are present.

5. Conclusion

5.1. Discussion

The conclusions of this research are based on the statistical tests and descriptive statistics coming from the survey, in which 107 people participated. Therefore, generalizing these conclusions must be done with caution.

Also, there may be more characteristics and complex interrelationships that are not included in this theoretical framework and conceptual model. For example, the positive feedback loop described by Rahm et al. (2021), in which an enhanced local ambiance may boost the number of pedestrians, which in turns increases the area's perceived safety and make it much more appealing for pedestrian usage (Bahriny and Bell, 2020; Christian et al., 2017). These may be weaknesses of this research.

To take care of this weakness, the respondents had the opportunity to include extra information, about characteristics that have not been asked yet. A strength of this research is the recruitment of participants, and therefore the dataset. Based on existing literature on different reasons to enter a park, and how people enter urban parks at different times and days, the survey is distributed at different moments and places, thereby striving to include the most diverse population of respondents in the dataset.

5.2. Findings

Different socio-demographic, social and built environment characteristics in and around urban parks influence the perceived safety of people making use of the park. The theoretical framework in section 2 concludes that the characteristics age, gender, race, vandalism, presence of people, maintenance, facilities, houses, big streets, street lighting, clear paths, reference/meeting points, and seeking refuge, are important characteristics for perceived safety. This research examined how these socio-demographic, social, and BE characteristics influence the perceived safety of people within urban parks, at different times of the day.

The conclusions are in line with the hypothesis that all characteristics are to some extent important for people's perceived safety. The ordinal regressions, error bar analysis and the spearman's rank correlation analysis gave more insights into what characteristics are valued more or less for people's perceived safety.

The ordinal regression shows that age is of greater importance for people's perceived safety during the day than at night. Also, all age groups younger than 65+ show higher perceived safety scores, meaning that people aged 65+ feel the least safe. This is in contrast to the conclusions of Dogrusoy and Zengel (2017) and Pain (2001), but in line with Schafer et al. (2006).

As opposed to age, gender is of greater importance for people's perceived safety at night than during the day. Men show higher perceived safety scores than women, thus tend to feel more safe in urban parks than women. This is in line with the conclusions of De Jesus (2010) and Schafer et al. (2006).

For race can be stated that people who belong to the 'majority', especially white men, feel safer, which is in contrast to Pain (2001). Yet, minorities may feel less safe because they feel they are a ''faster target'', which is in line with Radis and Nadan, (2020) and Chaparro et al. (2019).

From the descriptive statistics concluded can be that both during the day and at night, all characteristics are to some extent important for people's perceived safety. At night, all characteristics are more important than during the day.

The error bars conclude that maintenance and presence of people are valued as the most important during the day. This is in line with the findings of Evensen et al. (2021) and Iqbal and Ceccato (2016),

and can be explained by the fact that these characteristics are closely related to other characteristics like vegetation, vandalism, and facilities. Presence of houses and big streets are valued as the least important for people's perceived safety, which contrasts the findings of Baran et al. (2018). An explanation could be that people prefer natural surveillance coming from the presence of people in the park.

At night, Street lighting and maintenance are valued as the most important. This is in line with the findings of Rahm et al. (2021), Evensen et al. (2021), and Iqbal and Ceccato (2016). Street lighting and maintenance improve visibility. Presence of houses and facilities are valued as the least important, which is in contrast to Dogrusoy and Zengel (2017) and Baran et al. (2018). An explanation for this can be that houses and facilities at night attract 'unwanted' people (Thani et al., 2020).

Maintenance is both during the day and at night important, and the presence of houses near the park is both during the day and at night not very important. This can be added to the existing theory, and policy recommendations on improving perceived safety in urban parks are to see if the most important characteristics, such as 'maintenance', can be improved, to improve the overall perceived safety in the park.

From the Spearman's rank correlations it can be concluded that certain characteristics are not sufficiently present in both parks, where Stadspark lacks the most characteristics which are important for perceived safety.

5.3. Future research

This research has mostly been in an explorative phase, to see how certain characteristics of urban parks are perceived important or not under different circumstances. For future research, it is therefore recommended to use different questions so more statistical tests can be used to strengthen the arguments made in this research. Questions could be posed in interval or ratio form, so that a multiple linear regression could be executed. Also a factor analysis could be performed, in which factor scores can be entered in an ordinal regression to test which of the factors among different sets of socio-demographic, social and BE characteristics are more influential on perceived safety. This way, a more detailed and more statistical analysis can be performed on what characteristics have more influence than others.

6. References

Akpinar, A. (2016). How is quality of urban green spaces associated with physical activity and health? *Urban Forestry and Urban Greening*, 16, 76-83.

Appleton, J. (1975). The experience of landscape. *Landscape Research*, 1(10), 15-16.

Bahriny, F., Bell, S. (2020). Patterns of Urban Park Use and Their Relationship to Factors of Quality: A Case Study of Tehran, Iran. *Sustainability,* 12(4), 1560.

Baran, P.K., Tabrizian, P., Zhai, Y., Smith, J.W., Floyd, M.F. (2018). An exploratory study of perceived safety in a neighborhood park using immersive virtual environments. *Urban Forestry & Urban Greening*, 35, 72-81.

Beeldbank Groningen (2015). *Stap voor stap door Groningen.* Retrieved on 19-05-2021 from: https://www.beeldbankgroningen.nl/beelden/detail/ed227c8e-9e90-47c3-de9a-85dc029fc76a?mode=gallery&switch=1

Boomsma, C., Steg, L. (2014). Feeling Safe in the Dark: Examining the Effect of Entrapment, Lighting Levels, and Gender on Feelings of Safety and Lighting Policy Acceptability. *Environment and Behavior*, 46, 193-212.

Chaparro, M.P., Pina, M.F., De Oliveira Cardoso, L., Santos, S.M., Barreto, S.M., Giatti Gonçalves, L., Alvim De Matos, S.M., De Jesus Mendes Da Fonseca, M., Chor, D., Griep, R.H. (2019). The association between the neighbourhood social environment and obesity in Brazil: A cross-sectional analysis of the ELSA-Brasil study. *BMJ Open*, 9(9).

Christian, H., Knuiman, M., Divitini, M., Foster, S., Hooper, P., Boruff, B., Bull, F. & Giles-Corti, B. (2017). A longitudinal analysis of the influence of the neighborhood environment on recreational walking within the neighborhood: Results from RESIDE. *Environmental health perspectives*, 125(7).

Corazza, I., Gilmore, K.J., Menegazzo, F., Abols, V. (2021). Benchmarking experience to improve paediatric healthcare: listening to the voices of families from two European Children's University Hospitals. *BMC Health Services Research,* 21(93).

De Jesus, M., Puleo, E., Shelton, R.C., Emmons, K.M. (2010). Associations between perceived social environment and neighborhood safety: Health implications. *Health & Place*, 16(5), 1007–1013.

Dogrusoy, I.T. and Zengel, R. (2017). Analysis Of Perceived Safety In Urban Parks: A Field Study In Büyükpark And Hasanağa Park. *Meta journal of the faculty of architecture,* 34(1), 63-84.

El-Metwally, Y., Khalifa, M., Elshater, A. (2021). Quantitative study for applying prospect-refuge theory on perceived safety in Al-Azhar Park, Egypt. *Ain Shams Engineering Journal*.

Evensen, K.H., Hemsett, G., Nordh, H. (2021). Developing a place-sensitive tool for park-safety management experiences from green-space managers and female park users in Oslo. *Urban Forestry & Urban Greening*, 60.

Foster, S., Giles-Corti, B. (2008). The built environment, neighborhood crime and constrained physical activity: An exploration of inconsistent findings. *Preventive Medicine*, 47(3), 241-251.

Iqbal, A., Ceccato, V. (2016). Is CPTED Useful to Guide the Inventory of Safety in Parks? A Study Case in Stockholm, Sweden. *International Criminal Justice Review*, 26(2), 150-168.

Jacobs J. (1992). *The Death and life of great American cities*. Vintage Books ed. New York: Vintage Books.

Jamme, H.W., Bahl, D., Banerjee, T. (2018). Between “broken windows” and the “eyes on the street:” Walking to school in inner city San Diego. *Journal of Environmental Psychology*, 55, 121-138.

Jansson, M., Fors, H., Lindgren, T., Wiström, B. (2013). Perceived personal safety in relation to urban woodland vegetation – A review. *Urban Forestry & Urban Greening*, 12(2), 127-133,

Kerishnan, B.P., Maruthaveeran, S. (2021). Factors contributing to the usage of pocket parks—A review of the evidence. *Urban Forestry & Urban Greening*, 58.

Kolstein, M. (2018). *Stadspark: een stadspanel onderzoek.* Groningen: Onderzoek, Informatie en Statistiek Groningen.

Kolstein, M. (2019). *Noorderplantsoen*. Groningen: Onderzoek, Informatie en Statistiek Groningen.

Krutkin, V.L. (2020). The concept of representation and the limits of its application in the study of photographic experience. *Praxema*, 2(24), 56-73.

Lanza, K., Alcazar, M., Hoelscher, D.M., Kohl, H.W., (2021). Effects of trees, gardens, and nature trails on heat index and child health: design and methods of the Green Schoolyards Project. *BMC Public Health*, 21(1).

Lis, A., Iwankowski, P. (2021). Why is dense vegetation in city parks unpopular? The mediative role of sense of privacy and safety. *Urban Forestry & Urban Greening*, 59.

Lis, A., Pardela, Ł., Iwankowski, P. (2019). Impact of vegetation on perceived safety and preference in city parks*. Sustainability (Switzerland*), 11(22).

Mak, B.K.L. and Jim, C.Y. (2021). Contributions of human and environmental factors to concerns of personal safety and crime in urban parks. *Security Journal*.

Mak, B.K.L. and Jim, C.Y. (2018). Examining fear-evoking factors in urban parks in Hong Kong. *Landscape and Urban Planning*, 171, 42-56.

Maruthaveeran, S. (2017). Exploring the urban park use, preference and behaviours among the residents of Kuala Lumpur, Malaysia. *Urban Forestry & Urban Greening*, 25, 85-93.

Misiune, I., Julian, J.P., Veteikis, D. (2021). Pull and push factors for use of urban green spaces and priorities for their ecosystem services: Case study of Vilnius, Lithuania. *Urban Forestry & Urban Greening*, 58.

Norman, G. (2010). Likert scales, levels of measurement and the “laws” of statistics. *Advances in health sciences education,* 15, 625-32.

Pain, R. (2001). Gender, race, age, and fear of the city. *Urban Studies*, 38, 899-913.

Painter, K. (1996). The influence of street lighting improvements on crime, fear and pedestrian street use, after dark. *Landsc. Urban Plan*., 35, 193-201.

Pearson, A.L., Clevenger, K.A., Horton, T.H., Gardiner, J.C., Asana, V., Dougherty, B.V., Pfeiffer, K.A. (2021). Feelings of safety during daytime walking: associations with mental health, physical activity and cardiometabolic health in high vacancy, low-income neighborhoods in Detroit, Michigan. *International Journal of Health Geographics*, 20(1).

Peters, K., Elands, B., Buijs, A. (2010). Social interactions in urban parks: Stimulating social cohesion? *Urban Forestry & Urban Greening*, 9(2), 93-100.

Radis, B., Nadan, Y. (2020). Always Thinking About Safety": African American Lesbian Mothers' Perceptions of Risk and Well-being. *Family process*.

Rahm, J., Sternudd, C., Johansson, M. (2021). "In the evening, I don't walk in the park": The interplay between street lighting and greenery in perceived safety. *URBAN DESIGN International.*

Richter, J.G., Nannen, C., Chehab, G., Acar, H., Becker, A., Willers, R., Huscher, D., Schneider, M. (2021). Mobile App-based documentation of patient-reported outcomes — 3-months results from a proof-of-concept study on modern rheumatology patient management. *Arthritis Research and Therapy*, 23(1).

Schafer, J.A., Huebner, B.M., Bynum, T.S. (2006). Fear of crime and criminal victimization: Gender-based contrasts. *Journal of Criminal Justice*, 34(3), 285–301.

Sullivan, G., Artino, A. (2013). Analyzing and Interpreting Data From Likert-Type Scales. *Journal of graduate medical education,* 5(4), 541-542.

Taylor, L., Leckey, E.H., Lead, P.J. & Hochuli, D.F. (2020). What Visitors Want From Urban Parks: Diversity, Utility, Serendipity. *Frontiers in Environmental Science*, 8.

Thani, S.K.S.O., Hashim, N.H.M., Ismail, W.H.W. (2016). Surveillance by Design: Assessment Using Principles of Crime Prevention through Environmental Design (CPTED) in Urban Parks. *Procedia - Social and Behavioral Sciences*, 234, 506-514.

Wang, X., Wu, C. (2020). An Observational Study of Park Attributes and Physical Activity in Neighborhood Parks of Shanghai, China. *International Journal of Environmental Research and Public Health*, 17(6), 2080.

Wood, L., Frank, L.D., Giles-Corti, B. (2010). Sense of community and its relationship with walking and neighborhood design. *Social Science & Medicine*, 70, 1381-1390.

Wu, L., Kim, S.K. (2021). Health outcomes of urban green space in China: Evidence from Beijing. *Sustainable Cities and Society*, 65.

7. Appendices

7.1. Appendix 1: Recruitment of participants

Figure 10: In English: Survey about your perceived safety in parks (Author, 2021).

In English: *Thank you for participating in this survey. If you scan the QR code or enter the website https://www.surveylegend.com/s/35n9, you will be taken directly to the survey.*

You help me and my research enormously with this, thanks in advance!

Esther Bunk
e.s.bunk@student.rug.nl

The survey is distributed in Noorderplantsoen (blue) on a Monday, between 9 and 10 and between 2 and 6. The survey is distributed in Stadspark (green) on the next Tuesday, between 9 and 11 and between 2 and 6, and around Westerhaven (orange) on the next Wednesday between 1 and 4.

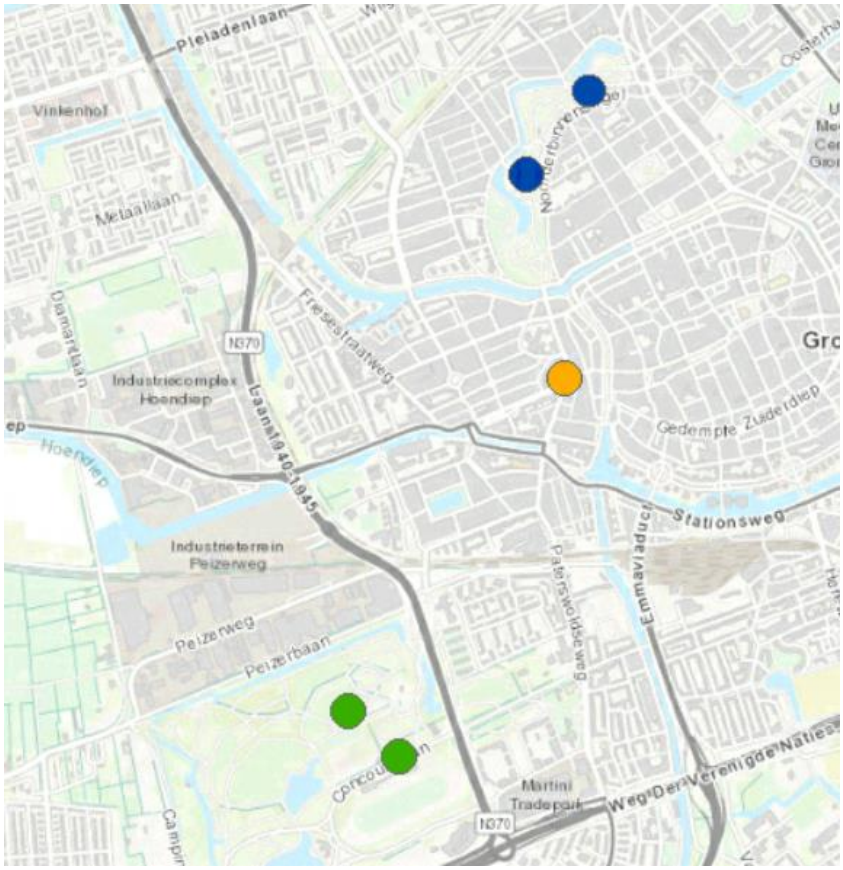


Figure 11: Locations for recruiting respondents (Author, 2021).

7.2. Appendix 2: Survey

Perceived Safety in Urban Parks

Dear respondent,

Thank you for taking the time to participate in this survey. The responses to this survey are used for my bachelor project at the University of Groningen. Here I investigate the sense of safety people perceive in parks, during the day and at night.

The survey is completely anonymous. All answers will remain confidential and will only be used for the analysis of this research.

If you have any questions about the survey, please contact me, Esther Bunk, at e.s.bunk@student.rug.com.

Socio-demographic characteristics

These will be analyzed to see if there are differences between certain demographic characteristics on how people perceive their own safety in urban parks.

1. What is your age?
Options: 18-29, 30-49, 50-64, 65+

2. What is your gender?
Options: Male, Female, Non-binary/third gender, Prefer not to say

3. Do you feel that your ethnicity plays a role in your perceived safety in urban parks? Please specify.

Now the questions about social and built environment characteristics DURING THE DAY will be asked. Each question highlights a specific characteristic. For each question, some pictures focusing on that specific characteristic are included. The pictures on the left (Stadspark) are assumed to give a low perceived safety, and the pictures on the right (Noorderplantsoen) are assumed to give a higher perceived safety. For each question, please indicate to what extent you agree with the following statements. Keep in mind that these statements are regarding your perceived safety when walking alone.

Social characteristics:

4. The fact that a park is well maintained will increase my feeling of safety


Strongly disagree – disagree – neutral – agree – Strongly agree

5. No broken windows or graffiti will increase my feeling of safety


Strongly disagree – disagree – neutral – agree – Strongly agree

6. Many other people in the park will increase my feeling of safety


Strongly disagree – disagree – neutral – agree – Strongly agree

Built environment characteristics:

7. The fact that there are clear reference/meeting points or points of reference in the park increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

8. The fact that there are a lot of houses with windows facing the park increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

9. The presence of mixed land use (e.g. cafes, playgrounds, sport facilities) increase my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

10. The fact that there is street lighting increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

11. Not having to go through narrow streets increases my feeling of safety


Strongly disagree – disagree – neutral – agree – Strongly agree

12. A clear path, so not very densely vegetated (trees/shrubs), will increase my sight forward, and this increases my feeling of safety


Strongly disagree – disagree – neutral – agree – Strongly agree

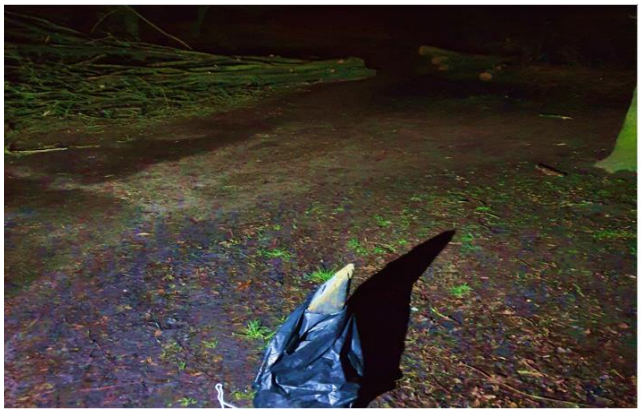
13. The fact that there are a lot of access/refuge points in the park increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

Now the questions about social and built environment characteristics AT NIGHT will be asked. With each question, some pictures will be present. The pictures on the left (Stadspark) are assumed to give a low perceived safety, and the pictures on the right (Noorderplantsoen) are assumed to give a higher perceived safety. Some pictures might not be very clear, but this represents the sight you have when walking in the park. For each question, please indicate to what extent you agree or disagree with the following statements. Keep in mind that these statements are regarding your perceived safety when walking alone.

Social characteristics:

14. The fact that a park is well maintained will increase my feeling of safety

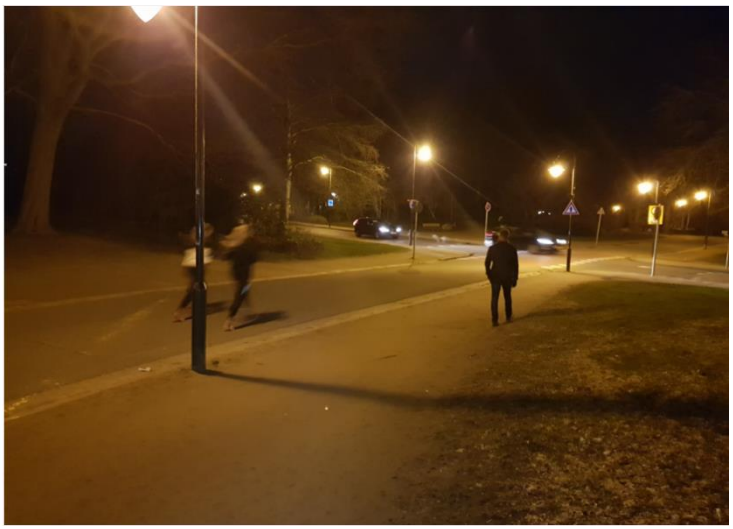



Strongly disagree – disagree – neutral – agree – Strongly agree

15. The absence of broken windows or graffiti will increase my feeling of safety


Strongly disagree – disagree – neutral – agree – Strongly agree

16. Many other people in the park will increase my feeling of safety



Strongly disagree – disagree – neutral – agree – Strongly agree

<u>Built environment characteristics:</u>

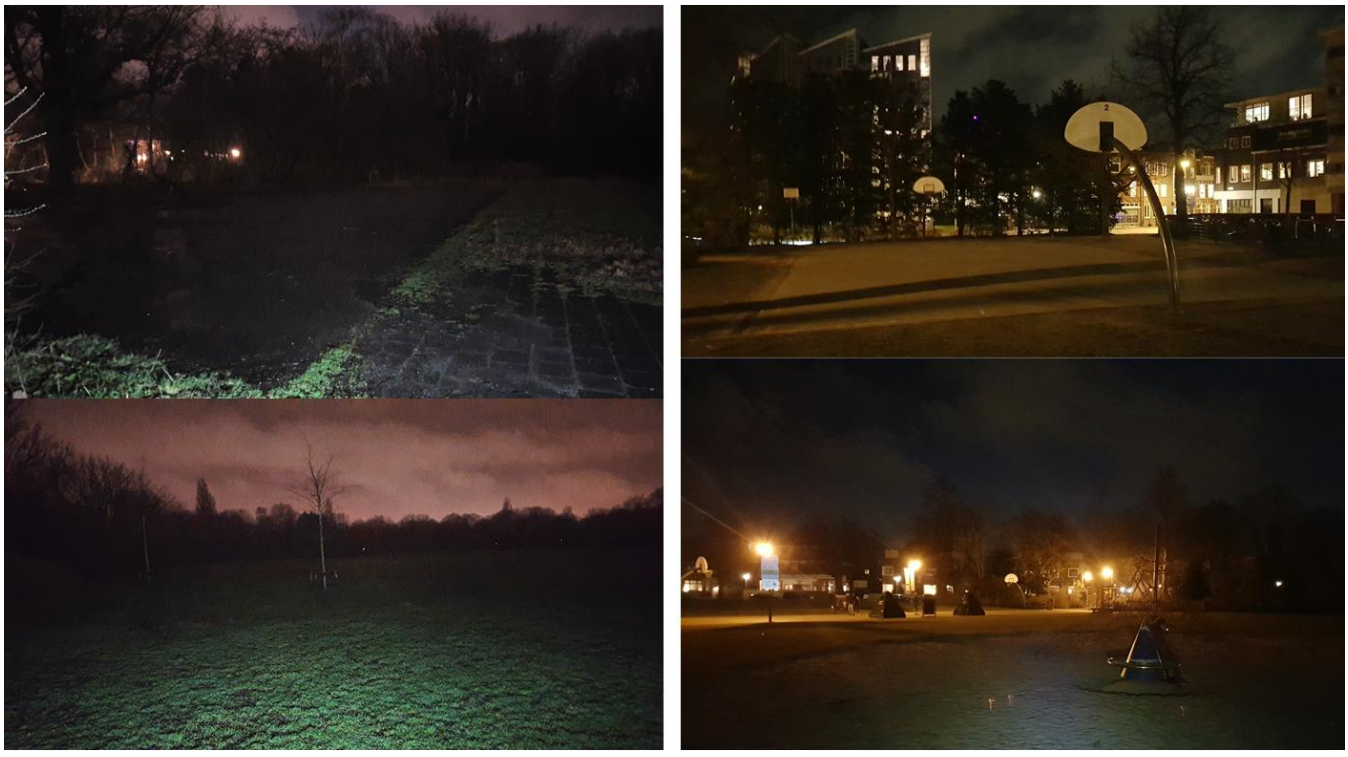
17. The fact that there are clear reference/meeting points or points of reference in the park increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

18. The fact that there are a lot of houses with windows facing the park increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

19. The presence of mixed land use (e.g. cafes, bars, sport facilities) increase my feeling of safety



Strongly disagree – disagree – neutral – agree – Strongly agree

20. The fact that there is street lighting at night increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

21. Not having to go through narrow streets increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

22. A clear path, so not very densely vegetated (trees/shrubs), will increase my sight forward, and this increases my feeling of safety

23. The fact that there are a lot of access/refuge points in the park increases my feeling of safety

Strongly disagree – disagree – neutral – agree – Strongly agree

You will now have the option to include some extra information regarding your perceived safety in the Noorderplantsoen and Stadspark, as you might think other characteristics will also influence your perceived safety. These characteristics will be analyzed after the survey is closed.

General questions Noorderplantsoen and Stadspark:

24. I feel completely safe in the Noorderplantsoen during the day
Strongly disagree – disagree – neutral – agree – Strongly agree

25. I feel completely safe in the Stadspark during the day
Strongly disagree – disagree – neutral – agree – Strongly agree

26. I feel completely safe in the Noorderplantsoen during the night
Strongly disagree – disagree – neutral – agree – Strongly agree

27. I feel completely safe in the Stadspark during the night
Strongly disagree – disagree – neutral – agree – Strongly agree

28. Are there other factors that influenced your perceived safety of the Noorderplantsoen?
Please specify.

28. Are there other factors that influenced your perceived safety of the Stadspark?
Please specify.

7.3. Appendix 3: Analysis of medians

As explained in the analysis in section 4.5, the medians are checked to see if these are approximately the same as the means. As means can give a wrong interpretation if there are two spread out centers, this is important to check. The medians are less detailed, as they only show the exact Likert-scale number. Figure 12 and 13 show the medians and means of all characteristics during the day and at night.

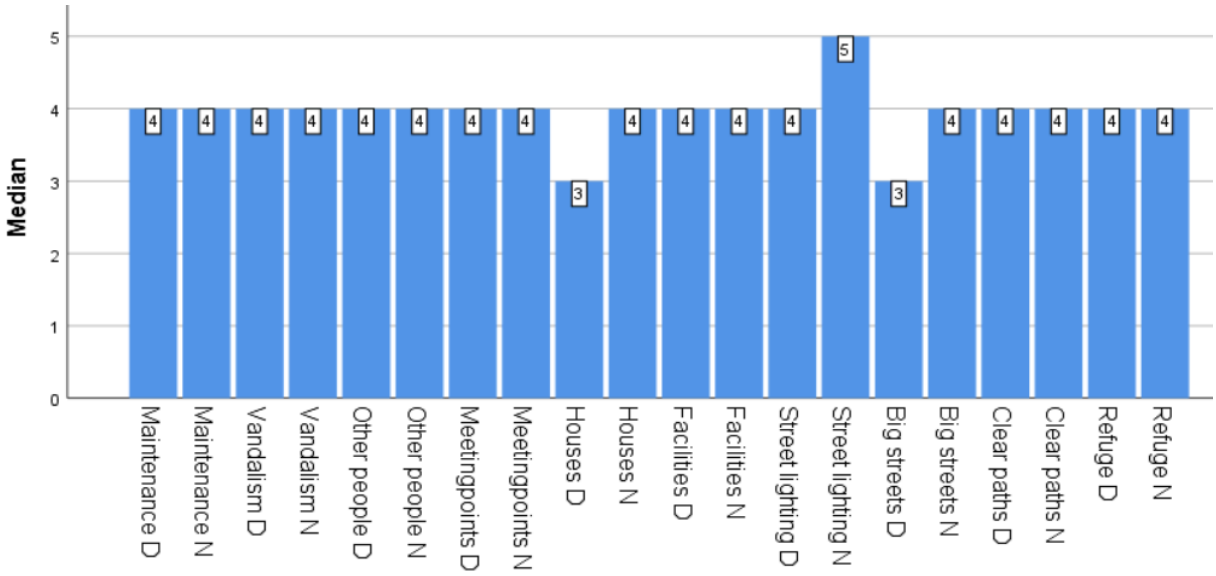


Figure 12: Medians showing all characteristics during the day (D) and at night (N) (Author, 2021).

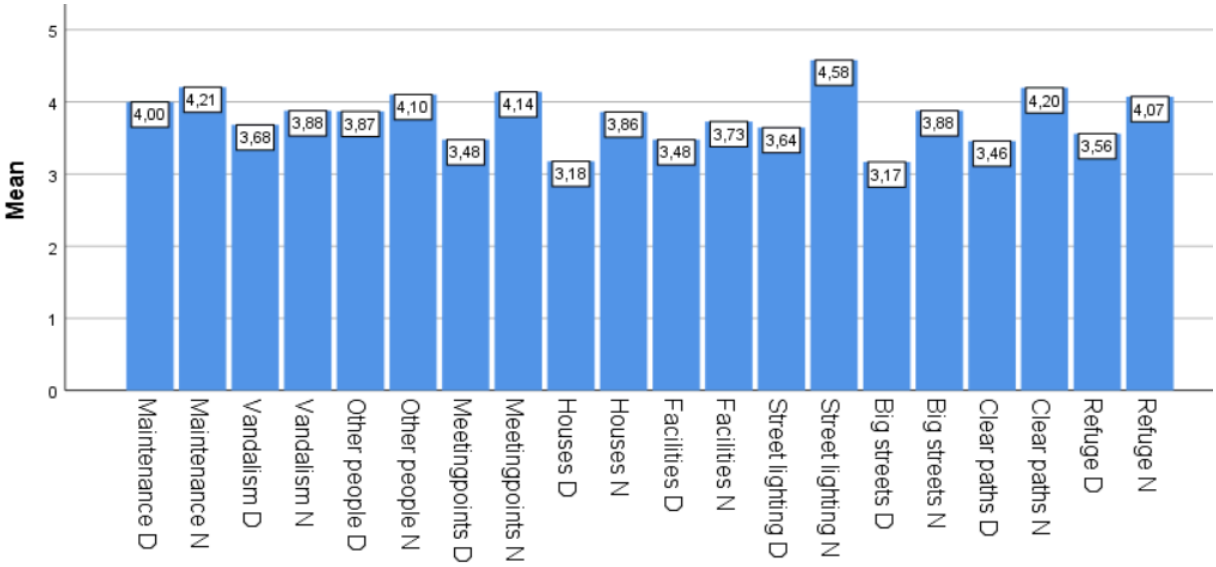


Figure 13: Means showing all characteristics during the day (D) and at night (N) (Author, 2021).

As can be seen in figure 12 and 13, the means and medians do not deviate much from each other. The variables with the lowest means also have the lowest medians (‘houses D’ and ‘Big Streets D’), and the variable with the highest mean also has the highest median (‘street lighting N’).

Therefore, it is concluded that the mean is a proper measure of central tendency, which can be used in the frequency analysis with error bars, to answer sub-question two and three.

7.4. Appendix 4: Raw dataset

Figure 14: Raw dataset (Author, 2021).

Where:

Gender = 1 = Man
Gender = 2 = Women
Gender = 3 = Other
Gender = 4 = Prefer not to say

Other variables:

1 = completely disagree
2 = disagree
3 = neutral
4 = agree
5 = completely agree

Respondent	Age	Gender	Race	Maintenance	Vandalism	People	Meetingpoints	Houses	Facilities	Streetlights	Broad streets	Clear path	Refuge	Maintenance N	Vandalism N	People N	Meetingpoints N	Houses N	Facilities N	Streetlights N	Broad street N	Clear path N	Refuge N	Safe NPS D	Safe SP D	Safe NPS N	Safe SP N	Other factors NPS	Other factors SP
1	50-64	1	Nee, hoewel het voor een blank ie1d makkelijk gezegd is	3	4	4	4	3	4	3	3	2	3	4	4	5	5	4	4	5	4	4	4	4	3	3	2	Gebied met drugsdealers	Ver weg van huizen
2	65+	2	Nee	4	3	3	5	2	4	1	5	5	3	4	3	4	3	3	5	5	3	4	3	4	4	3	4	Politie, boas, maakt het veilig	Nee
3	18-29	1	Nee, ik heb geen gevoel dat mijn etniciteit een rol speelt.	5	3	4	4	3	3	4	3	4	3	4	3	4	4	3	3	4	3	4	3	5	5	5	5		
4	18-29	1	Nee	4	2	4	4	2	4	4	2	4	4	4	2	4	4	2	4	4	4	4	4	4	4	4	4		
5	18-29	3	Ja. Als wit persoon voel ik me vrij veilig	5	5	4	2	3	4	5	2	3	4	4	4	2	4	4	2	5	5	5	5	5	5	5	2		
6	65+	1	Nee. Een mens is een mens nietwaar	3	2	4	3	2	3	4	4	3	3	4	4	3	4	3	3	4	3	4	3	5	5	3	3	Nee	Nee
7	30-49	2	Nee	4	4	4	3	4	4	4	3	4	3	4	4	3	4	3	4	4	3	4	3	4	4	3	3		
8	30-49	1	Nee, blanke 1	5	5	4	4	3	2	5	2	4	2	5	4	4	3	3	3	5	4	4	2	5	5	5	5		
9	50-64	2	Nee	4	4	5	4	4	3	3	2	3	4	5	4	5	5	5	4	5	5	5	5	5	5	4	3	Het feit dat er wegen doorheen lopen is fijn	Ik ken de weg niet zo goed, 's nachts is dat spannend
10	18-29	2	Nee, ik ben een blank en Nederlandse. Ik heb niet het idee dat anderen zich door mij onveilig voelen en dat ik, omdat ik Nederlands ben, mij onveilig hoef te voelen.	4	5	4	4	4	4	5	5	4	3	5	4	3	5	5	3	5	5	4	4	5	5	3	3		
11	30-49	2	Nee	3	4	5	5	3	4	4	3	2	2	4	4	4	4	4	4	5	4	4	4	5	5	1	1	Ja wanneer er overvallers / zedendelinquenten actief zijn	Als 2 alleen s nachts in een park rondlopen lijkt me onverstandig
12	30-49	1	Nee, de gemeente doet toch wat ze willen	4	4	3	3	3	3	4	4	3	3	4	4	3	3	3	3	3	4	3	3	4	4	4	4	Nee	Nee
13	18-29	2	Nee	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2	2		
14	30-49	1	Soms kan dat een rol spelen denk ik, afhankelijk van waar men zich bevind, en op welk tijdstip	2	3	2	4	2	3	4	2	2	2	3	2	2	4	2	2	2	2	2	2	4	4	3	3		
15	65+	1	nee	2	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	3	3		
16	18-29	1	Hangt er vanaf. Ik ben wit en als ik een groepje zwarte jongeren zie op een bankje, met een dikke boombox. Die ondertussen wat zitten te roken dan wel. Het scheelt niet heel veel en komt ook niet vaak voor maar als het gebeurt gebeurd dan wel.	4	5	4	3	2	4	3	5	4	2	5	5	4	4	5	3	5	4	5	4	5	4	4	2	Nee	Nee
17	18-29	1	Nee	5	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	5	4	4	4	5	4	4	2	De centrale ligging van het plantsoen t.o.v. stad	De decentrale ligging van het park t.o.v. stad en andere wijken
18	18-29	2	Nee. Ik ben zelf blank en voel me daardoor nier per se veiliger/minder veilig.	4	5	3	4	3	3	3	3	4	4	5	5	5	5	4	4	5	5	4	4	5	5	3	2		
19	30-49	2	Nee	4	4	4	4	4	4	1	3	3	4	4	4	5	5	5	5	5	5	5	5	4	4	3	3	Groepjes lawaaierige jongens die je intimideren	Nee
20	30-49	1	nee	4	5	4	4	4	2	2	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	2	2	nee	nee
21	18-29	2	Nee	4	3	4	4	4	4	3	3	4	4	5	5	5	5	5	5	5	5	5	5	5	5	4	3	1	Groepen jongeren/ouderen bij elkaar in de nacht
22	18-29	2	Nee	5	4	5	4	4	3	2	2	3	3	5	5	5	4	5	4	5	4	4	4	5	4	4	3		
23	30-49	2	Nee	4	2	5	2	4	4	3	2	2	4	4	2	3	2	5	2	5	4	4	4	5	4	2	1		
24	30-49	2	Nee	4	3	4	4	3	4	4	4	3	3	4	3	4	4	3	4	5	3	3	3	5	4	3	3		
25	50-64	2	Ik weet niet beter of ik ben zoals ik ben. Moeilijk voor te stellen hoe het voelt om een andere huidskleur te hebben.	5	4	4	5	5	5	3	5	5	5	5	4	5	5	5	5	5	5	5	5	5	4	2	1	Nee. Verder: Ik vertoon me 's nachts niet in het Noorderplantsoen of Stadspark, dus ik heb bovenstaande vragen op gevoel (niet aan de hand van mijn ervaring) beantwoord.	Nee. Verder: Ik vertoon me 's nachts niet in het Noorderplantsoen of Stadspark, dus ik heb bovenstaande vragen op gevoel (niet aan de hand van mijn ervaring) beantwoord.
26	30-49	1	Nee	4	4	4	4	2	4	4	4	4	4	5	4	5	5	4	3	5	4	4	4	5	5	4	3	Het park ligt midden in de stad	Het is erg groot, regelmatig snachts nog schimmige figuren aanwezig in het donker vooral in de zomer.

Respondent	Age	Gender	Race	Maintenance	Vandalism	People	Meetingpoints	Houses	Facilities	Streetlights	Broad streets	Clear path	Refuge	Maintenance N	Vandalism N	People N	Meetingpoints N	Houses N	Facilities N	Streetlights N	Broad street N	Clear path N	Refuge N	Safe NPS D	Safe SP D	Safe NPS N	Safe SP N	Other factors NPS	Other factors SP
27	18-29	2	Nee, denk eerder dat dit met geslacht te maken heeft.	3	2	4	4	4	4	4	2	2	3	2	2	5	4	4	4	4	2	4	4	5	5	5	2	Locatie: midden in de stad.	Veel zwervers / vreemde figuren die daar 's avond rond struinen.
28	18-29	2	Nee	4	2	4	3	3	4	3	2	3	4	4	2	5	5	4	4	5	4	5	5	4	4	2	1	Eerdere verkrachtingen	Gekke gebeurtenissen gezien
29	18-29	2	Onbewust ben ik meer op mijn hoede als ik jongens in houdies zie bijvoorbeeld. Deze kledingstijl past meer bij oa de hiphop scene die weer geassocieerd wordt met Marokkanen en Turken. Dus indirect wel denk ik.	4	5	4	3	2	2	3	2	3	4	5	4	5	5	5	5	5	5	5	5	5	5	2	1	Hoe groot het park is. Maar dat heeft met een vlucht route gehoord voelen als je schreeuwt te maken	park is. Maar dat heeft met een vlucht route gehoord voelen als je schreeuwt te maken
30	18-29	2	Nee	4	2	4	2	2	4	5	4	4	3	4	4	2	4	2	4	5	4	4	4	4	4	2	2		
31	18-29	1	Nee	4	2	5	3	3	3	4	4	3	5	4	4	2	4	3	3	5	5	4	4	5	5	2	2	Of iket ie1d ben	of ik met ie1d ben
32	18-29	1	Hierin Nederland niet, omdat ik denk dat iedereen veilig over straat kan	4	3	4	3	2	4	5	4	2	2	5	3	5	5	2	4	5	4	2	2	5	5	4	4	Midden in stad	De omvang van het park
33	50-64	2	Nee	4	4	3	4	4	3	4	4	4	4	4	5	5	5	5	3	5	5	5	5	5	4	4	2	Dronken mensen komen hier meer voor dan in stadspark	
34	50-64	2	Nee	4	4	3	3	3	3	2	4	3	4	4	5	5	5	5	5	5	5	5	5	5	5	3	1	Aanwezigheid v Politie	
35	50-64	1	Ja, ik denk dat een witte 1 veiliger over straat kan dan een 1 van een andere etnische groep.	4	4	2	2	2	2	1	2	2	2	5	4	5	5	4	4	5	5	5	4	5	5	5	2	Kom er dagelijks dus voelt als thuis	Vroeger wel 4 nageroepen door homos tijdens het joggen in het donker.
36	65+	2	nee	5	3	5	3	3	4	3	3	3	4	5	4	5	5	4	5	5	5	5	5	5	5	3	1	het feit dat er enkele mensen aanwezig zijn, fietsend of wandelend is prettig	nee
37	65+	2	Nee. Wel mijn leeftijd	4	3	4	4	5	4	5	4	4	5	5	5	5	5	5	5	5	5	4	5	5	3	3	1	1	Nee	Nee
38	18-29	1	Nee ik denk dat etniciteit geen rol speelt. Ik wandel veel door parken en kan mij moeilijk voorstellen dat etniciteit een verschil maakt.	4	4	5	3	3	3	4	3	4	3	4	4	4	4	4	4	5	4	4	3	4	5	4	4	Nee	Nee
39	30-49	2	Nee ik denk niet dat dit een rol speelt bij mijn veiligheid	5	4	5	5	5	4	5	4	5	4	5	4	5	5	5	5	5	5	5	5	5	5	2	2	Nee	Nee
40	18-29	2	Ja een beetje wel, omdat ik blond, blank en klein ben.	4	4	5	4	3	4	5	4	4	4	4	5	5	4	3	3	5	4	4	5	5	5	2	2	Voornamelijk of er meerdere mensen zijn. Dan voel ik mij veiliger.	Zelfde als hierboven
41	18-29	2	Zeker. Blank en lang haar en een 2. Vooral mensen die naroepen geeft een onveilig gevoel	5	4	4	4	2	3	5	2	2	3	5	5	5	4	4	3	5	2	3	5	5	5	2	2	Met meer mensen voel ik me veilig. Mensen die schreeuwen en na roepen geven me een onveilig gevoel	Zelfde als ik noorderplatsoen
42	18-29	1	Nee	5	5	5	5	5	5	5	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	3	
43	18-29	2	Nee	4	4	4	4	3	5	5	4	4	3	4	4	4	4	4	3	5	4	4	4	4	4	4	3	Nee	Nee
44	18-29	1	Nee, geen gevoel bij.	4	4	3	3	2	2	3	2	2	2	4	2	3	4	3	3	4	2	2	2	5	5	5	5		
45	65+	2	Nee	5	4	4	2	4	3	1	2	4	5	5	5	5	4	5	3	5	3	5	5	4	4	2	2	Nee	Nee
46	65+	4	Nee, eerder groepsgedrag	3	4	2	2	2	2	3	2	3	4	4	3	3	4	3	3	4	3	4	4	5	5	4	3		
47	18-29	2	Nee	4	4	4	4	2	3	4	2	3	1	4	4	4	4	2	2	4	2	2	4	4	4	4	4		
48	18-29	1	Nee, het is niet iets waar bij stil sta als ik door een park loop of fiets	4	4	2	3	3	4	5	2	4	3	4	4	3	4	4	3	4	4	4	4	4	4	4	3	Nee	Nee
49	50-64	1	Nee	4	4	4	4	4	2	2	2	4	4	4	5	4	4	2	3	5	3	4	4	5	5	4	3		
50	65+	1	Bij mij niet	1	2	2	2	3	3	1	1	2	2	1	2	1	2	3	2	1	2	1	1	1	1	2	2	Veen licht	Brede straten
51	18-29	1	Sure, ik ben een witte, getatoeerde sterke 1. Dat is natuurlijk heel anders dan als het gaat om een andere sekse of etniciteit, die worden vaker aangevallen	4	2	2	5	2	5	5	5	2	4	4	2	4	4	2	3	5	5	5	5	5	5	5	5		
52	Zeg ik	2	Wellicht. Gevoel gebasereerd op vooroordelen	4	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	3	4	4	4	4	3	3		
53	18-29	2	in mijn geval denk ik van niet	5	5	5	4	5	4	5	3	3	4	5	5	5	5	5	4	5	5	5	5	5	4	2	1		
54	Zeg ik	1	Nee	4	2	3	3	3	3	4	3	3	4	4	2	4	4	4	4	4	4	4	4	5	5	3	3		

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55	30-49	1	Nee, geen invloed	4	5	4	4	3	3	2	4	5	4	5	5	4	4	5	5	5	5	5	5	1	1	3	3		
56	18-29	1	Nee, ik ben nederlands maar ik heb niet het gevoel dat dit invloed heeft op mijn veiligheid, dat ervaar ik niet zo in ieder geval	4	2	4	4	4	4	2	4	4	5	4	2	5	5	5	4	5	5	5	5	5	1	1	3	nee	
57	65+	2	Nee, blanke 2	4	3	4	3	3	4	2	4	3	4	5	3	5	2	4	2	5	5	5	4	5	4	2	2	Bepaalde groepjes jongens die rondhangen	Bepaalde groepjes jongens die rondhangen
58	65+	1	Nee, blanke 1	4	3	5	4	3	3	2	3	5	5	5	5	3	5	5	5	5	3	5	5	4	4	3	2	Nee	Nee
59	30-49	2	Nee	4	2	4	4	2	2	3	2	3	3	4	2	4	4	4	4	4	4	4	4	5	3	2	1	In het verleden zijn er berovingen en verkrachtingen geweest. Dat geeft een gevoel van onveiligheid ‘s nachts. Maar ook heel vroeg in de ochtend.	Het Stadspark is voor mij onbekend en te donker. Ik zal hier nooit ‘s avonds en of ‘s nachts doorheen gaan.
60	18-29	2	Ik denk het niet	4	4	5	4	3	3	3	3	3	4	5	5	5	4	4	4	5	4	5	5	5	5	5	2	Het Noorderplantsoen ligt dicht bij het centrum, wat ook een prettig gevoel geeft.	Stadspark is een stuk groter en onoverzichtelijker, wat in het donker niet fijn is. Daarnaast is het meer afgelegen wat voor mij het gevoel geeft dat mensen met slechte bedoelingen hier eerder rond zullen hangen
61	18-29	2	Soms, je voelt je soms iets minder prettig als jonge 2 op straat. Vooral s’nachts	5	4	5	4	5	4	5	4	5	4	5	5	5	3	5	3	5	5	5	5	5	3	3	2	Nee	Nee
62	30-49	1	Wellicht wel. Ben een blanke 1 van mid 40 en er waar geen tot weinig onveiligheid.	3	3	3	3	3	3	4	3	3	3	3	4	4	3	4	3	4	4	4	4	4	5	5	4	3			
63	30-49	2	Nee	5	5	5	4	4	5	5	5	4	4	5	5	5	5	5	5	5	5	5	5	4	4	2	2	Nee	Nee
64	30-49	1	Ik denk het niet, maar dat zegt iedereen die geen (negatieve) ervaring ondervonden heeft n.a.v. etniciteit denk ik.	4	3	4	4	3	4	4	2	3	3	3	3	4	4	3	4	5	2	4	3	5	5	4	4	Doorgaande wegen die door het park lopen. Dit is bij Noorderplantsoen het geval. Bij Stadspark toch minder/minder logische route.	Doorgaande wegen die door het park lopen. Dit is bij Noorderplantsoen het geval. Bij Stadspark toch minder/minder logische route.
65	Zeg ik	4	Nee	4	4	2	2	2	2	4	2	2	2	2	4	2	2	2	2	4	2	4	2	4	4	4	4	Nee	Nee
66	30-49	1	Ja, sneller doelwit politie	1	1	3	2	2	3	4	2	2	2	5	4	4	2	2	2	5	2	4	4	5	5	4	3	Nee	Nee
67	50-64	1	nee	3	4	4	1	2	2	4	3	3	3	4	3	4	4	4	3	5	5	5	3	5	5	4	4	-	veel andere wandelaars alleen, dus geen groepen
68	30-49	1	Nee. Voel mij even veilig rondom alle verschillende etniciteiten.	2	1	2	2	2	2	2	2	2	2	4	2	3	4	3	2	5	4	4	2	5	5	4	3	Met name de verlichting die er overal is maakt dat je je veiliger voelt.	Hier is dus bijna geen verlichting. Dit is echt het belangrijkste verschil.
69	30-49	1	nee	3	3	3	3	3	3	4	2	2	2	2	2	2	2	2	2	4	2	4	3	4	4	4	3		
70	18-29	1	Ja	5	3	4	3	3	4	5	4	4	4	5	4	5	4	4	4	5	4	5	5	4	4	3	2	Aanwezigheid van politie	Aanwezigheid van politie
71	18-29	2	Nee	4	5	3	2	2	4	4	4	4	4	4	5	4	5	5	2	5	3	4	5	4	4	2	2		
72	50-64	2	Nee	4	3	4	4	2	5	4	3	4	4	5	4	5	4	4	5	5	5	5	5	5	5	4	3		Geen ervaring
73	Zeg ik	1	Nee	4	3	4	3	4	4	5	4	4	4	5	3	5	5	3	5	5	4	5	5	5	5	4	3	De fietsroutes door het park	
74	50-64	2	Ja als blonde blanke 2 wordt je vaker aangesproken	5	4	5	4	3	4	5	4	3	4	3	4	5	5	5	4	5	4	4	4	5	4	2	2	Altijd mensen en in de stad is fijner	Erg afgelegen en groot.
75	30-49	1	Nee	5	5	5	4	2	2	5	2	5	4	5	5	3	4	4	2	5	2	5	4	5	5	4	3	Regelmatige aanwezigheid van handhaving/politie	Minder vaak aanwezige handhaving/politie
76	50-64	1	Nee	4	4	4	4	4	4	5	4	4	4	4	4	5	4	4	4	5	4	4	4	5	5	4	3		De grootte
77	18-29	2	Nee, ik denk niet dat ik een groter doelwit ben, of gezien wordt als een groter gevaar vanwege mijn etniciteit. Geslacht speelt wel een rol denk ik.	4	5	4	4	4	4	4	3	4	5	4	5	4	5	5	3	5	3	4	5	4	4	2	2	Mensen die je lastig vallen. De hoeveelheid mensen 's nachts; als er maar 1 of 2 anderen zijn beïnvloed dat mijn gevoel van veiligheid niet, misschien zelfs negatief maar als er meer mensen aanwezig zijn voel ik me veiliger.	Mensen die je lastig vallen. De hoeveelheid mensen 's nachts; als er maar 1 of 2 anderen zijn beïnvloed dat mijn gevoel van veiligheid niet, misschien zelfs negatief maar als er meer mensen aanwezig zijn voel ik me veiliger.

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78	50-64	2	Ik denk het wel. Ik kan me voorstellen dat bijvoorbeeld een islamitische gesluierde 2 anders behandeld wordt dan een blanke 2 in bepaalde delen van het land en omgekeerd een blanke ongesluierde 2 omgekeerd ook in andere delen van het land.	4	4	4	2	4	2	2	4	5	5	4	4	5	4	4	5	5	4	5	5	5	4	4	3		
79	30-49	2	Nee...	4	4	4	3	3	4	4	3	4	3	5	4	5	4	4	4	4	4	4	4	5	5	4	2	Aanwezigheid van anderen, ookal ken ik ze niet..dus soort van drukte	Rondhangende, drinkende/onder invloed zijnde ‘zwervers’ , misschien meer/vaker in Noorderplantsoen? Als ik er over nadenk ben ik niet echt bang, loop er ‘gewoon’ net een boog omheen
80	30-49	2	nee	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	2	2		
81	50-64	1	Nee. Sta hier nooit bij stil	4	3	4	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	3	3	Overzichtelijk	Meer afgelegen stukken
82	Zeg ik	2	Nee	3	4	3	2	2	3	2	2	2	2	4	5	4	4	4	4	4	3	4	3	5	5	4	3	Is maar klein park, je bent er zo uit	
83	50-64	1	Nee merk ik niets van	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	2	5	5	5	5		
84	50-64	1	Nee, geen gevoel hierbij.	2	2	3	4	2	4	4	3	4	2	2	2	3	4	3	4	4	3	4	2	4	4	4	4	Vertrouwen in mij zelf	Zie hierboven
85	50-64	1	Ja afhankelijk van waar je bent	4	2	2	4	4	4	1	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	3	4		
86	50-64	1	Nee	5	5	4	3	2	2	2	3	3	3	5	5	5	4	4	4	5	3	4	5	5	5	4	3	Drugsgebruik	Ontmoetingsplekken!!
87	50-64	2	Afhankelijk van waar ik ben.	4	2	4	3	3	3	4	3	4	4	4	3	4	4	3	4	4	4	4	4	4	5	5	4	Ik ben ermee bekend. Dat scheelt een hoop.	Hetzelfde als hierboven.
88	30-49	1	Dat zou wel kunnen alleen heb ik daar geen last van.	5	4	5	3	3	4	4	3	3	4	5	4	5	5	4	4	5	4	4	4	5	5	4	3		Groot park en minder overzichtelijk
89	30-49	2	Ja, als 2 alleen in het donker over straat lijkt mij minder veilig dan wanneer ik een 1 was	4	4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
90	50-64	1	Ik denk dat mijn etniciteit niet meespeelt in mijn gevoel van veiligheid. Het zou wel kunnen dat mijn etniciteit meespeelt in mijn veiligheid, maar dat zou dan uit onderzoek gehaald kunnen worden, daar heb ik geen weet van.	4	5	4	4	3	2	3	2	4	3	4	5	4	4	4	4	4	4	4	5	3	4	4	4	4	Dronken mensen (overdag bijvoorbeeld dak- en thuislozen)	Dronken mensen (overdag bijvoorbeeld dak- en thuislozen)
91	18-29	2	Nee	3	4	4	5	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	4	4	2	
92	65+	1	Misschien wel. Ik ben een blanke 1 en voel me vrij veilig.	3	3	4	2	3	2	4	3	3	2	3	3	4	4	3	3	4	3	3	4	4	4	4	4	3		
93	50-64	1	Nee	5	5	5	5	5	5	5	3	3	3	5	5	5	5	5	5	5	3	3	3	5	5	3	3		

Respondent	Age	Gender	Race	Maintenance	Vandalism	People	Meetingpoints	Houses	Facilities	Streetlights	Broad streets	Clear path	Refuge	Maintenance N	Vandalism N	People N	Meetingpoints N	Houses N	Facilities N	Streetlights N	Broad street N	Clear path N	Refuge N	Safe NPS D	Safe SP D	Safe NPS N	Safe SP N	Other factors NPS	Other factors SP
94	50-64	1	Ja.	3	4	4	4	4	5	1	2	3	5	3	4	5	3	3	5	5	4	5	5	5	5	2	2		
95	50-64	2	Nee	4	5	4	2	3	2	3	3	2	4	3	3	3	3	3	3	3	3	3	3	4	4	3	3	Ik kom niet in heT donker in de parken	Kom niet in donker in het park
96	50-64	2	Nee	4	4	4	4	3	3	4	4	4	4	4	4	5	5	5	4	5	5	5	5	5	5	2	2		
97	50-64	1	Nee	5	5	4	2	4	4	4	4	3	4	5	5	5	5	5	5	5	3	5	5	5	5	4	2		
98	30-49	2	Omdat ik tot de "meerderheid" behoor heb ik nooit een gevoel van onveiligheid gehad. Indien in een groep valt waar dat wel zo is, zichtbaar is, kan dat , helaas, van invloed zijn op je veiligheidsgevoel.	4	4	5	4	4	5	4	4	4	5	5	4	5	5	5	5	5	5	5	5	5	5	2	2	Nee	Nee
99	50-64	2	Ik denk het niet maar heb daar nooit zo bij stilgestaan	5	5	5	5	5	4	5	5	5	5	5	5	4	5	5	5	5	5	5	5	4	4	3	2	Het feit dat er veel gezinnen en studenten komen geeft een prettig gevoel	Het feit dat het zo groot en uitgestrekt is geeft een onveiliger gevoel
100	50-64	1	Ja, blank (en 1) geeft wlk minder risico	5	5	5	4	5	4	5	4	4	4	5	5	3	5	4	3	5	5	5	5	3	4	3	3	Grootte van het park	Idem
101	50-64	2	Nee denk niet dat dat uitmaakt	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	Surveillerende stadswachten bevorderen gevoel van veiligheid, groepjes jongeren waarvan ik niet kan inschatten wat de reden is dat ze daar aanwezig zijn, geeft eerder gevoel van onveiligheid.	Ik kom niet vaak in stadspark
102	18-29	1	Nee witte 1 dus voel me niet bedreigd Door huidskleur	5	3	2	3	2	4	5	3	5	4	5	4	4	4	2	4	5	5	5	5	5	5	2	4		
103	18-29	2	Misschien een beetje, alsof ik waardevolle spullen bij me draag.	5	5	4	3	3	3	5	4	4	4	5	5	5	5	5	5	5	5	5	5	5	4	3	3	2		
104	18-29	2	Ja, ik voel me vaak veilig	5	4	4	4	3	4	4	3	4	4	5	4	5	5	4	4	5	5	4	5	4	3	4	2		
105	30-49	2	Ja, als Nederlander voel ik weinig bedreiging van medeburgers. Ik kan me voorstellen dat dit anders is als je in de minderheid bent op het gebied van etnische achtergronden.	4	4	5	4	3	4	5	2	3	4	5	4	5	5	5	4	4	4	4	5	4	4	2	3	Verhalen over 2enmishandeling jaren geleden	Nee
106	50-64	1	Nee	4	4	3	2	2	3	2	2	4	4	4	4	4	4	3	4	4	3	4	4	3	3	3	3	Ik ben er al erg lang niet geweest, dus moeilijk te zeggen	Ik ben er al jaren niet geweest, dus moeilijk te zeggen
107	50-64	2	Ik begrijp deze vraag niet eerlijk gezegd, omdat	4	4	4	4	3	3	4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4	3	2	Het is midden in de stad, er zijn altijd	Hier is de 'bewoonde' wereld wat verder weg

7.5. Appendix 5: Descriptive statistics of respondents

In table 1 and 2, the descriptive statistics of the respondents are presented. The descriptive statistic include age and gender.

Table 1: Frequency table of age (Author, 2021).

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18-29	36	33,6	33,6	33,6
30-49	26	24,3	24,3	57,9
50-64	29	27,1	27,1	85,0
65+	11	10,3	10,3	95,3
Prefer not to say	5	4,7	4,7	100
Total	107	100	100	

Table 2: Frequency table of gender (Author, 2021).

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	50	46,7	46,7	46,7
Female	54	50,5	50,5	97,2
Other	1	,9	,9	98,1
Prefer not to say	2	1,9	1,9	100
Total	107	100	100	

7.6. Appendix 6: Ordinal regression on age and gender

Here, 4 ordinal regressions are shown.

Ordinal regression 1: age and gender with the overall perceived safety in the Noorderplantsoen during the day.

Ordinal regression 2: age and gender with the overall perceived safety in the Stadspark during the day.

Ordinal regression 3: age and gender with the overall perceived safety in the Noorderplantsoen at night.

Ordinal regression 4: age and gender with the overall perceived safety in the Stadspark at night.

The model fitting information table shows us how well the model fit the data. In ordinal regression 1 and 2, we can see that this result is not significant, so we should be careful with interpreting the results.

In the goodness of fit table we would like to fail the null-hypotheses. We want a p value greater than 0.05. In all ordinal regressions, this is the case.

The Pseudo R-square Nagelkerke tells us what percentage of the variance is explained by our model. In all ordinal regressions, this is not very high. This is logical if you think about the fact that a lot of variables influence the overall perceived safety, and only age and gender are included here.

The test of parallel lines table tests the assumption of proportional odds. We want this p value to be greater than 0.05. In ordinal regression the P-value is less than 0.05, so we should be careful with interpreting these results.

The parameter estimates table shows the locations of each relation. This is the table where we can get our specific information from. We look at the significance of all variables in the 'location' row, and the 'sig.' column.

The 'estimate' column shows the direction of the variable. This means that if we have a value higher than zero, this indicates that higher cumulative scores are expected for the other group, in relation to the reference category.

The results are discussed in section 5.1.

* = this parameter is set to zero because it is redundant. This means that this is the reference category, which all other categories are compared to.

Ordinal Regression 1

Table 3: Case processing summary (Author, 2021).

Variable	Categories	N	Marginal percentage
Safe NPS D	1	2	2%
	2	1	1%
	3	4	4%
	4	34	34%
	5	59	59%
Age	18-29	35	35%
	30-49	26	26%
	50-64	29	29%
	65+	10	10%
Gender	Male	48	48%
	Female	52	52%
Valid		100	100%
Missing		0	
Total		100	

Table 4: Model Fitting Information (Author, 2021).

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	61,594			
Final	54,248	7,346	4	,119

Table 5: Goodness-of-fit test (Author, 2021).

	Chi-Square	Df	Sig.
Pearson	25,004	24	,406
Deviance	22,539	24	,547

Table 6: Test of parallel lines (Author, 2021).

Model	-2 Log Likelihood	Chi-square	Df	Sig.
Null hypothesis	54,248			
General	27,190	27,058	12	,008

Table 7: Pseudo R-Square (Author, 2021).

Cox and Snell	,071
Nagelkerke	,084
McFadden	,039

Table 8: Parameter Estimates (Author, 2021).

	Category	Estimate	Std. Error	Wald	Df	Sig.	Lower bound	Upper bound
Location	Age=18-29	1,937	,723	7,174	1	,007	,520	3,354
	Age=30-49	1,581	,736	4,609	1	,032	,138	3,024
	Age=50-64	1,667	,729	5,235	1	,022	,239	3,096
	Age=65+	0*	-	-	0	-	-	-
	Gender=1	-,219	,408	,288	1	,592	-1,020	,581
	Gender=2	0*	-	-	0	-	-	-

Ordinal Regression 2

Table 9: Case processing summary (Author, 2021).

Variable	Categories	N	Marginal percentage
Safe NPS D	1	3	3%
	2	1	1%
	3	8	8%
	4	45	45%
	5	43	43%
Age	18-29	35	35%
	30-49	26	26%
	50-64	29	29%
	65+	10	10%
Gender	Male	48	48%
	Female	52	52%
Valid		100	100%
Missing		0	
Total		100	

Table 10: Model Fitting Information (Author, 2021).

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	67,235			
Final	61,359	5,876	4	,209

Table 11: Goodness-of-fit test (Author, 2021).

	Chi-Square	Df	Sig.
Pearson	23,449	24	,493
Deviance	21,612	24	,602

Table 12: Test of parallel lines (Author, 2021).

Model	-2 Log Likelihood	Chi-square	Df	Sig.
Null hypothesis	61,359			
General	49,725	11,634	12	,476

Table 13: Pseudo R-Square (Author, 2021).

Cox and Snell	,057
Nagelkerke	,065
McFadden	,027

Table 14: Parameter Estimates (Author, 2021).

	Category	Estimate	Std. Error	Wald	Df	Sig.	Lower bound	Upper bound
Location	Age=18-29	1,217	,693	3,080	1	,079	-,142	2,576
	Age=30-49	1,415	,723	3,833	1	,050	-,002	2,831
	Age=50-64	1,495	,715	4,380	1	,036	,095	2,896
	Age=65+	0*	-	-	0	-	-	-
	Gender=1	,404	,389	1,081	1	,298	-,358	1,166
	Gender=2	0*	-	-	0	-	-	-

Ordinal Regression 3

Table 15: Case processing summary (Author, 2021).

Variable	Categories	N	Marginal percentage
Safe NPS D	1	3	3
	2	27	27
	3	27	27
	4	35	35
	5	8	8
Age	18-29	35	35%
	30-49	26	26%
	50-64	29	29%
	65+	10	10%
Gender	Male	48	48%
	Female	52	52%
Valid		100	100%
Missing		0	
Total		100	

Table 16: Model Fitting Information (Author, 2021).

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	94,300			
Final	72,955	21,346	4	,000

Table 17: Goodness-of-fit test (Author, 2021).

	Chi-Square	Df	Sig.
Pearson	24,947	24	,409
Deviance	21,267	24	,623

Table 18: Test of parallel lines (Author, 2021).

Model	-2 Log Likelihood	Chi-square	Df	Sig.
Null hypothesis	72,955			
General	61,905	11,049	12	,525

Table 19: Pseudo R-Square (Author, 2021).

Cox and Snell	,192
Nagelkerke	,205
McFadden	,077

Table 20: Parameter Estimates (Author, 2021).

	Category	Estimate	Std. Error	Wald	Df	Sig.	Lower bound	Upper bound
Location	Age=18-29	1,403	,686	4,190	1	,041	,060	2,747
	Age=30-49	,993	,703	3,922	1	,157	-,384	2,370
	Age=50-64	1,383	,698	3,922	1	,048	,014	2,751
	Age=65+	0*	-	-	0	-	-	-
	Gender=1	1,616	,400	16,295	1	,000	,831	2,401
	Gender=2	0*	-	-	0	-	-	-

Ordinal Regression 4

Table 21: Case processing summary (Author, 2021).

Variable	Categories	N	Marginal percentage
Safe NPS D	1	11	11%
	2	37	37%
	3	33	33%
	4	14	14%
	5	5	5%
Age	18-29	35	35%
	30-49	26	26%
	50-64	29	29%
	65+	10	10%
Gender	Male	48	48%
	Female	52	52%
Valid		100	100%
Missing		0	
Total		100	

Table 22: Model Fitting Information (Author, 2021).

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	103,199			
Final	71,306	31,894	4	

Table 23: Goodness-of-fit test (Author, 2021).

	Chi-Square	Df	Sig.
Pearson	25,267	24	,391
Deviance	21,211	24	,626

Table 24: Test of parallel lines (Author, 2021).

Model	-2 Log Likelihood	Chi-square	Df	Sig.
Null hypothesis	71,306			
General	58,099	13,207	12	,354

Table 25: Pseudo R-Square (Author, 2021).

Cox and Snell	,273
Nagelkerke	,291
McFadden	,114

Table 26: Parameter Estimates (Author, 2021).

	Category	Estimate	Std. Error	Wald	Df	Sig.	Lower bound	Upper bound
Location	Age=18-29	,981	,691	2,072	1	,150	-,354	2,316
	Age=30-49	1,092	,706	2,396	1	,122	-,291	2,476
	Age=50-64	1,064	,695	2,339	1	,126	-,300	2,427
	Age=65+	0*	-	-	0	-	-	-
	Gender=1	2,206	,434	25,803	1	,000	1,355	3,058
	Gender=2	0*	-	-	0	-	-	-

7.7. Appendix 7: Spearman's rank correlation analysis

The null hypothesis for the Spearman's rank correlation test is: there is no relationship between how the independent variables are ranked as important and the dependent variable 'overall perceived safety'. This is done with 4 different dependent variables:

- Dependent variables '*overall perceived safety in Stadspark/Noorderplantsoen during the day',* with as independent variables all social and built environment characteristics ranked at importance during the day (tables 2 and 3).
- Dependent variables *'overall perceived safety in Stadspark/Noorderplantsoen at night'* with as independent variables all social and built environment characteristics ranked at importance at night (tables 4 and 5).

The null hypothesis is rejected when we find a significant result (indicated with * or **). Then we can conclude that there is a relation between how people perceive their safety in an urban park and how high they rank certain characteristics as important for their perceived safety. If the correlation coefficient is positive, we find a positive relationship, if the correlation coefficient is negative, we find a negative relationship.

* = significant at the P = 0.05 level.
** = significant at the P = 0.01 level (so more significant).

Table 27: Analysis with dependent variable '*overall perceived safety in Noorderplantsoen during the day'* (Author, 2021).

Characteristic \ results	**Correlation coefficient**	**Sig. (2-tailed)**
Maintenance D	,107	,271
Vandalism D	-,038	,695
Presence people D	,172	,076
Reference/meeting points D	,040	,682
Houses D	-,024	,804
Facilities D	,008	,936
Street lighting D	,052	,597
Big streets D	,023	,814
Clear paths D	-,151	,120
Refuge D	,028	,771

Table 28: Analysis with dependent variable '*overall perceived safety in Stadspark during the day'* (Author, 2021).

Characteristic \ results	**Correlation coefficient**	**Sig. (2-tailed)**
Maintenance D	-,030	,760
Vandalism D	-,014	,886
Presence people D	,038	,694
Reference/meeting points D	-,100	,303
Houses D*	-,208	,032
Facilities D	-,099	,311
Street lighting D	,123	,206
Big streets D	-,117	,229
Clear paths D*	-,205	,035
Refuge D	-,119	,222

Table 29: Analysis with dependent variable '*overall perceived safety in Noorderplantsoen at night*' (Author, 2021).

Characteristic \ results	**Correlation coefficient**	**Sig. (2-tailed)**
Maintenance N	-,090	,358
Vandalism N	-,148	,128
Presence people N	-,151	,119
Reference/meeting points N*	-,236	,015
Houses N**	-,349	,000
Facilities N*	-,242	,012
Street lighting N	-,180	,063
Big streets N*	-,222	,022
Clear paths N	-,148	,127
Refuge N**	-,341	,000

Table 30: Analysis with dependent variable '*overall perceived safety in Stadspark at night*' (Author, 2021).

Characteristic \ results	**Correlation coefficient**	**Sig. (2-tailed)**
Maintenance N**	-,274	,004
Vandalism N**	-,348	,000
Presence people N**	-,380	,000
Reference/meeting points N**	-,373	,000
Houses N**	-,541	,000
Facilities N**	-,282	,003
Street lighting N**	-,379	,000
Big streets N**	-,344	,000
Clear paths N**	-,384	,000
Refuge N**	-,537	,000